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90152

Senegal: Rice Structural Adjustment (RSA) Program

Program Assistance Approval Document (PAAD)
Project Paper (PP)

Program No. 685-0297

Project No. 685-0301

United States Agency for International Development
Dakar, Senegal

February 16, 1994

U.S. AGENCY FOR
INTERNATIONAL
DEVELOPMENT

ACTION MEMORANDUM FOR THE ACTING ASSISTANT ADMINISTRATOR FOR AFRICA

FROM: AFR/SWA, Judith Gilmore

SUBJECT: Senegal Rice Structural Adjustment (RSA) Program Grant (685-0297) and Project Support Grant (685-0301)

I. Problem

Your approval is requested for a $30 million grant for a five-year combined project and non-project sector assistance program for the Republic of Senegal (GOS) entitled the "Rice Structural Adjustment Program" (the "Program"), to enable the Government to implement a comprehensive liberalization of the rice market in Senegal. The grant comprises (a) $28 million in non-project assistance in the form of a conditioned cash transfer to be disbursed in three tranches as conditions precedent are met; and (b) $2 million in project assistance in the form of technical assistance and related costs for effective implementation of the reform program. USAID/Dakar, through an ad hoc Delegation of Authority to the Mission Director, intends to obligate $8 million for non-project assistance and $2 million for project assistance during Fiscal Year (FY) 1994.

II. Discussion

A. Program Description

The purpose of the Program is to increase the incomes of farmers who currently produce paddy rice for the internal Senegalese market through liberalization of rice marketing and processing. The Program will provide the necessary financial and technical resources to liberalize and privatize the rice processing and marketing systems in Senegal.

The Program combines policy and institutional reforms with projectized inputs (designed largely to monitor the effects of the Program in the rice sub-sector and to sustain policy initiatives) to establish the price incentive and institutional foundation upon which Senegal can build a more efficient rice sub-sector. The Program has been developed following an extended multi-donor/GOS dialogue on agriculture sector policy and an

associated adjustment strategy, the *Programme d'Adjustement du Secteur Agricole*" (PASA). PASA discussions produced agreement on specific reform measures, including those in the rice sub-sector.

Through the Program, the GOS will apply to the rice sub-sector the general principles that have guided PASA discussions. In particular, with the disbursement of the third tranche of the Program, the GOS will have (1) eliminated all administered pricing in the rice sub-sector, (2) replaced a fixed paddy price with a reference (or indicative) paddy price, (3) abolished all rice transport cost subsidies, assuring that consumers pay the full cost of differential transport costs, (4) eliminated fixed rice distributors' margins, and (5) abolished the fixed wholesale price for broken rice in Dakar -- the linchpin of the current administered pricing system. With the exception of a duty (now a perequation) to be paid on imported rice, the GOS will no longer directly manipulate any prices in Senegalese rice markets.

Institutional reforms will be far-reaching as well. With the disbursement of the third tranche, the GOS will have (1) reformed all key institutions in the rice sub-sector, (2) privatized or closed all state-owned rice mills, (3) eliminated SAED activities in paddy marketing and processing, and CPSP activities in local wholesale rice marketing. The CPSP, which is currently heavily involved in purchasing, importing, storing and transporting rice, will be restructured -- limiting its role to monitoring the rice sub-sector, contracting with the private sector for broken rice imports under emergency conditions only, and for the management of security stocks of rice on behalf of the GOS.

These policy and institutional reforms are important only insofar as they generate economic improvements and solid impact at the people-level. Analyses show that the potential economic benefit from improved resource allocation, stemming from reductions in SAED and CPSP inefficiencies and subsidiès to irrigation systems, could amount to $25 million per year. Efficiencies will increase the incomes of paddy-producing farm families in the Senegal River Valley, based on production responses to changed incentives (e.g. improved infrastructure, access to less expensive energy and to credit at market rates). Incomes of these families, as well as paddy processors, traders and transporters, will be tracked closely through the five years of the program.

The Ministry of Finance, the official executing agency for the Government of Senegal, will nominate a GOS Steering Committee to meet regularly with USAID representatives to conduct progress reviews (see Section V of the PAAD for details). USAID/Dakar and the GOS will assure that the policy actions required by the first tranche conditionalities are taken prior to the disbursement of funds. The Program Agreement will contain as Conditions Precedent priority actions for the GOS, which will correspond to the three disbursements under the Program (cf. Section VII of the PAAD for conditions precedent, covenants and verification procedures).

B. Financial Summary

The RSA Program is designed as a five-year effort with a Program/Project Assistance Completion Date (PACD) of March 31, 1999. A Summary Program Budget and Illustrative Disbursement Schedule are provided below:

Summary Program Budget ($ '000)

Item		Amount
Conditional Resource Transfer		28,000
Complementary Project		2,000
Commodities	487	
Training	185	
Technical Assistance (Buy-in)	350	
Surveys and Studies	795	
Audits and Evaluations	95	
Contingency	88	
Total Complementary Project	2,000	
Grand Total RSA Program		30,000

Illustrative Disbursement Schedule ($ '000)

Item	Fiscal Year 1994	1995	1996	1997	1998
Conditional Resource Transfer	8,000	10,000	10,000	0	0
Complementary Project					
Commodities	487	0	0	0	0
Training	32	45	49	49	10
Technical Assistance (Buy-in)	50	90	90	90	30
Surveys and Studies	0	230	130	230	205
Audits and Evaluations	0	0	20	75	0
Contingency	23	17	17	17	14
Total RSA Program	8,592	10,382	10,306	461	259

C. Committee Actions and Findings

The Program Review Committee met on December 17, 1993 to review the Rice Structural Adjustment Program. The Committee, which commended the GOS and the Mission in their efforts to bring about real structural reform in Senegal's rice sub-sector, recommended that the RSA program be approved at the requested level pending completion of specific actions subsequently documented in STATE 015737 (cf. PAAD Annex 11). Actions include (1) incorporating in the PAAD a detailed discussion on the potentially positive and negative impacts on project beneficiaries (producers/consumers), as well as the poor majority and other vulnerable groups; (2) determining the impact of the perequation on the program; (3)

revising the FY 1994/95/96 OYB to ensure that the entire program can be accommodated within the Mission's straightlined OYB; (4) urging the Senegalese Ministry of Finance to settle GOS Brooke arrearages as quickly as possible, so that Senegal would not be in Brooke violation at the time of authorization; and (5) submitting a revised IEE addressing environmental mitigation and impact, with appropriate covenants.

The Mission responded satisfactorily to the above request in DAKAR 1018 (cf. PAAD Annex 11), dated February 3, 1994; and in PAAD text revisions. The PAAD now contains several additional explanatory paragraphs related to "people-level impact"; and two new covenants designed to mitigate potentially negative effects of the Program on the environment and on vulnerable groups. The revised and approved Initial Environmental Examination recommends a categorical exclusion for technical assistance, training, and studies; and a negative determination for commodities, equipment and supplies. A revised FY94-96 budget now accommodates all RSA program and project costs within the straightlined OYB. On the perequation, the recent 50% devaluation of the FCFA has more than eliminated the positive perequation -- which according to the IMF was negative as of February 3, 1994.

Based on the above submissions the Project Committee recommends approval of the RSA Program, noting that the social, economic, financial and institutional analyses are sound, feasible, and justify the need for this combined project and program sector assistance. The Mission has clearly identified assumptions and constraints, and has modified the design to include actions to reduce risk. In addition, the Implementation Plan is realistic and establishes a reasonable timeframe for carrying out the Program. The PAAD meets the requirements of Sections 611 (a), (b) and (e) of the FAA, as well as requirements of Advisory and Assistance Executive Approval.

E. Special Concerns

1. Major Conditions and Covenants: The conditions and covenants linked to disbursement of RSA program assistance are the foremost means to effect liberalization and privatization of Senegal's rice sector. RSA policy and institutional reforms are also the sine qua non for long-term sustained increases in income levels of those households comprising Senegal's poor majority.

2. Host Country 25% Contribution: USAID//Dakar requests a waiver of the requirement in Section 110 of the FAA that the GOS provide at least 25% of the cost of the total program (attached).

3. Implementing Agencies: The Grantee will be the GOS, acting through the Ministry of Finance, Economy and Plan; and the Ministry of Agriculture. The program will support rice sub-sector

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price and institutional reforms designed and implemented by the GOS, which has an approved policy framework in place - negotiated between the GOS and the key donors under the leadership of the World Bank and as part of the PASA discussions. The program is entirely consistent with and integrated within the agriculture sector adjustment strategy of the GOS. The Program accepts the Grantee's approach to, and goals for, reform in the rice sub-sector and seeks to facilitate their implementation.

4. Gray Amendment: USAID/Senegal is committed to increasing the access of Gray Amendment entities to Mission program activities and proposes to use, where possible, Gray Amendment firms for Program impact monitoring studies. In accordance with USAID policy, any contract of $500,000 or more will contain a provision requiring that at least 10% of the dollar value of the contract be subcontracted with a firm meeting the disadvantaged enterprise qualifications.

5. Responsible Officers for USAID. Because the RSA Program contemplates a life-of-project funding level of $30 million, the USAID/Dakar Mission Director does not have authority to authorize and obligate this Program without a Delegation of Authority (DOA) from the Assistant Administrator for Africa. Therefore, to initiate this program with FY 1994 funds, you will be required to authorize the Program and also to provide an ad hoc delegation of authority to the USAID/Dakar Mission Director to execute the agreements and obligate the funds. Day-to-day implementation of the Program will be ensured by the Mission's Program Officer. The Mission's principal USAID/W contact for this program will be the Africa Bureau's Country Development Officer for Senegal.

6. Women in Development: The basic policy reforms to be implemented through this Program will specifically address issues related to increasing incomes of farmers through a liberalized, privatized rice marketing system. The Program is important for women, who are involved in many aspects of the production, marketing and processing of paddy rice. The Program's effect on women's welfare and income, especially female-headed households, will be monitored closely throughout the duration of the program.

7. Cash Transfer Mode of Assistance: A separate Action Memorandum (attached) for your approval outlines the reasons for a cash transfer mode of assistance, taking into account other assistance options for this type of program.

III. Waivers

USAID/Dakar proposes that the requirement under FAA Section 110 that the GOS contribute 25% of the program costs be waived. A detailed explanation of this case is included in the attached waiver, for your signature.

IV. Justification for the Congress

A Congressional Notification (CN) was submitted to Congress on January 7, 1994, and expired without objection on January 22, 1994. An exemption from the separate account requirement was contained in the CN.

V. Authority

Pursuant to your authority as Acting Assistant Administrator, Bureau for Africa, as well as your alter ego authority as stipulated in Africa Bureau Delegation of Authority No. 550, you have the authority to act on the recommendation presented below.

V. Recommendations

1. That you sign the attached Project Authorization and Data Sheet, thereby approving life-of-project funding of $2 million for the Senegal Rice Structural Adjustment Support Project (685-0301);

2. That you sign the attached Program Assistance Approval Document Facesheet authorizing $8 million for the Senegal Rice Structural Adjustment Program (685-0297) in FY 1994;

3. That you sign below to approve the ad hoc delegation of authority, pursuant to Delegation of Authority (DOA) 551, to the USAID/Dakar Mission Director to sign both the Program and Project Grant Agreements, thus obligating $8 million and $2 million, respectively, of FY 1994 DFA/SDP grant funds.

Approve: Carol A. Peasley

Disapprove: _____

Date: 18 February 1994

4. That you sign the attached Action Memoranda

a. requesting approval of a waiver of the requirement in Section 110 of the FAA that the Government of Senegal provide at least 25% of the cost of the total RSA Program; and

b. requesting approval for the cash transfer mode of assistance under the RSA Program.

Attachments:

1. Project Authorization
2. Project Data Sheet
3. Program Assistance Approval Document Facesheet
4. Action Memorandum to waive the 25% Host Country Contribution
5. Action Memorandum to Approve the Cash Transfer Mode of Assistance
6. The Rice Structural Adjustment PAAD

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Drafted:USAID/Senegal:MBèye:3Feb94
Revised:AFR/SWA:JBreslar:7-17Feb94:7-8124

Clearances:

USAID/Senegal:

PRM:JVanderVcan (draft)
ANR:LJepson (draft)
RLA:AAdams (draft)

USAID/W:

AFR/SWA:TVandergriff	(draft)	Date:	02/14/94
AFR/SWA:WDarkins	(draft)	Date:	02/09/94
AFR/DP/PFP:PRader	(draft)	Date:	02/09/94
AFR/ARTS/EA:JSmith	(draft)	Date:	02/09/94
AFR/ARTS/FARA:JGaudet	(draft)	Date:	02/09/94
GC/AFR:PJohnson		Date:	18 Feb 94
G/R&D/EID:GSteele	(draft)	Date:	02/14/94
G/R&D/WID:PBoyle	(draft)	Date:	02/14/94

CLASSIFICATION: Unclassified

AGENCY FOR INTERNATIONAL DEVELOPMENT PROGRAM ASSISTANCE APPROVAL DOCUMENT (PAAD)	1. PAAD Number 685-0297:685-T-612 2. Country Senegal 3. Category Non-Project Sector Assistance 4. Date 16 February 1994
5. To Carol A. Peasley, A-AA/AFR	6. OYB Change Number Not Applicable
7. From Judith Gilmore, AFR/SWA	8. OYB Increase: $7,134,993 SDP/$865,007 DFA. To be taken from: Prior-Year Deob/FY 1994 DFA
9. Approval Requested for Commitment of $8,000,000	10. Appropriation Budget Plan Code

11. Type Funding	12. Local Currency Arrangement	13. Estimated Delivery Period	14. Transaction Eligibility Date
☐ Loan ☒ Grant	☐ Informal ☐ Formal ☒ None	03/31/94 - 03/31/97	February 18, 1994

15. Commodities Financed Not Applicable, Cash Disbursement

16. Permitted Source	17. Estimated Source Not Applicable
U.S. only	U.S.
Limited F.W.	Industrialized Countries
Free World	Local
Cash $8,000,000	Other

18. Summary Description The purpose of the Senegal Rice Structural Adjustment program is to increase the incomes of farmers who produce paddy rice for the internal Senegalese market through liberalization of rice marketing and processing. Over the life-of-program various policy and institutional reforms will (1) eliminate all administered rice prices; (2) replace a fixed paddy price with a reference (or indicative) price; (3) end rice transport cost subsidies; (4) eliminate fixed price distributors' margins nationwide; (5) end the fixed wholesale price for broken rice in Dakar; and (6) restructure the sub-sector's two key institutions. The GOS will also privatize or close all state-owned rice mills; and end its involvement in paddy marketing and processing, and in local wholesale rice marketing. In the end the GOS will focus on monitoring the rice sub-sector, and contracting with the private sector for broken rice imports under emergency conditions only, and for the management of rice security stocks as necessary.

The attached PAAD/PP justifies a $30 million program consisting of $28 million in cash transfers, to be disbursed in three annual tranches, and $2 million in project assistance. The $8 million first tranche is targetted for FY 1994 disbursement. As Senegal belongs to the West African Monetary Union and does not manage its own foreign exchange, the program is exempt from separate account requirements of Section 537(b)(1) of the FY 1994 Foreign Assistance Appropriations Act. Congress

(Continued on the following page)

19. Clearances		Date	20. Action
USAID/Senegal Director:JEColes		2/18/94	☒ APPROVED ☐ DISAPPROVED
GC/AFR:PJohnson		18 Feb 94	
AFR/SWA:WDarlow	AFR/DP:PRoller	2/18/94 2/18/94	Authorization Signature: Carol A. Peasley — Date: 18 Feb. '94
AFR/SWA:JBrosler	AFR/SWA:TVandergriff	18 Feb 94 2/18/94	
AFR/ARTS:JSmith	AFR/ARTS:JGaudet	2/18/94 2/18/94	Title Acting Assistant Administrator for Africa
G/R&D/EID:GStoele	G/R&D/WID:PBoyle	2/18/94 2/18/94	

AID 1120-1 (8/91) CLASSIFICATION: Unclassified

(Continuation):

was notified of USAID's intent to allow this exemption via the normal Congressional Notification process. The program will not generate local currency nor require special local currency deposits,

Conditions Precedent to Disbursement (Program Conditionality):

Tranche No. 1: Prior to the first disbursement or to the issuance of any commitment documents under the Program Grant Agreement, the Grantee shall, except as the Parties may otherwise agree to in writing, furnish to USAID, in form and substance satisfactory to USAID:

a. An opinion of counsel acceptable to USAID that the Program Grant Agreement has been duly authorized and/or ratified by, and executed on behalf of, the Grantee, and that it constitutes a valid and legally binding obligation of the Grantee in accordance with all of its terms;

b. A statement of the names of the persons holding or acting in the office of the Grantee specified in Section 8.2 of the Program Grant Agreement and of any additional representatives, together with a specimen signature of each person specified in such statement;

c. The name, address and account number of the bank into which the dollars under this Grant will be deposited;

d. The names, titles and affiliations of the members of the Grantee's Steering Committee for the Rice Structural Adjustment program (RSA Steering Committee);

e. With the intention of eventually eliminating all administered prices for rice:

i. Evidence that the GOS has published and made effective a reference farm paddy price for rice;

ii. Evidence that the GOS has abolished the transport cost subsidy for broken rice in all regions except Kolda and Ziguinchor and that the final broken rice price to consumers includes the full effect of transport costs in all regions except Kolda and Ziguinchor; and

iii. Evidence that the GOS has eliminated administered prices (except wholesale broken rice in Dakar) and margins for all types of rice in all regions except Kolda and Ziguinchor by having liberalized distributors' margins in all regions excluding Kolda and Ziguinchor;

f. With the effect of completing SAED's disengagement from purchasing and processing local rice:

i. Evidence that the GOS has closed, sold, or transferred to the private sector all SAED mills; and

ii. Evidence that the GOS has established the subsidy to qualifying private mills at 25 FCFA per kilogram;

g. With the intention of eventually completely restructuring CPSP:

i. Evidence that the GOS has developed and adopted the restructuring plan for the CPSP;

ii. Evidence that the CPSP has disengaged from purchasing and distributing local rice; and

iii. Evidence that the CPSP has extended its rice market monitoring measures to all regions.

Tranche No. 2: Prior to the second disbursement under the Program Grant Agreement, the Grantee shall, except as the Parties may otherwise agree to in writing, furnish to USAID, in form and substance satisfactory to USAID:

a. With the intention of eventually eliminating all administered prices for rice (with the adoption of these conditions, the only remaining administered price in the rice markets of Senegal is the wholesale price of imported broken rice in the Dakar region):

i. Evidence that the GOS has abolished the transport cost subsidy for broken rice in Kolda and Ziguinchor and that the final broken rice price to consumers in all regions includes the full effect of transport costs; and

ii. Evidence that the GOS has eliminated administered prices (except wholesale broken rice in Dakar) and margins for all types of rice in all regions by liberalizing distributors' margins in Kolda and Ziguinchor;

b. Evidence that the GOS has reduced the subsidy to qualifying private mills to 15 FCFA per kilogram;

c. With the intention of eventually completely restructuring CPSP:

Evidence that the CPSP has fully implemented Phase I of its reorganization plan (Phase I includes those changes in the organization and operations of the CPSP that precede or are undertaken simultaneously with the relevant reforms identified as conditions precedent to disbursement of the first and second tranches);

ii. Evidence that the CPSP has disengaged from all internal distribution of all types of rice, except in the regions of Kolda and Ziguinchor;

iii. Evidence that the CPSP has closed all its regional warehouses, except in the regions of Kolda, Ziguinchor and Dakar;

iv. Evidence that the GOS has permitted the private sector to import broken rice; and

v. Evidence that the CPSP is not involved in any way in the importation of any type of rice except broken rice.

Tranche No. 3: Prior to the disbursement of the third tranche under the Program Grant Agreement, the Grantee shall, except as the Parties may otherwise agree to in writing, furnish to USAID, in form and substance satisfactory to USAID:

a. With the effect of eliminating all administered prices of rice, evidence that the GOS has abolished the administered wholesale price for broken rice in Dakar;

b. Evidence that the GOS has abolished the subsidy to qualifying private mills;

c. With the effect of completely restructuring CPSP:

i. Evidence that the CPSP has completely implemented its reorganization plan;

ii. Evidence that the CPSP has disengaged from all internal distribution of rice in the regions of Kolda and Ziguinchor;

iii. Evidence that the CPSP has closed all its regional warehouses in the regions of Kolda, Ziguinchor and Dakar; and

iv. Evidence that the activities of CPSP are limited to (1) monitoring the rice sector, (2) contracting with the private sector for broken rice imports only, under emergency conditions only, and (3) contracting with the private sector for the management of security stocks of rice on behalf of the CPSP.

Covenants:

In addition to the above conditions precedent, the following special covenants form part of the Grant Agreement.

1. The Grantee agrees to furnish evidence that any and all amounts owed to the US Government, under any ongoing or prior GOS-USAID/Dakar project, have been duly paid or settled in a manner acceptable to USAID;

2. The Grantee agrees that it shall not in any way discontinue, reverse or otherwise impede any action it has undertaken in satisfaction of any condition precedent identified in Section VII.A. above, except as may be mutually agreed to in writing by both the GOS and USAID.

3. The Grantee agrees that, in June of each of the years 1994, 1995, 1996 and 1997, the Minister of Finance, the Minister of Agriculture, and the Mission Director of USAID/Dakar, or their representatives, will meet and will jointly agree on the level of funding allocated to the UPA line item in the GOS budget.

4. The Grantee agrees that it will prepare an environmental monitoring, evaluation and mitigation plan to guide the process by which it will identify, monitor and, if necessary, design and implement measures to mitigate undesirable environmental consequences of the RSA program.

5. The Grantee agrees that it will participate in surveys and studies leading to the identification of potential negative effects of the Rice Structural Adjustment program on vulnerable groups such as farm households headed by women, women farm workers, and smallholders in the delta area of the Senegal River Valley; and, if necessary, to design and implement measures to mitigate undesirable consequences.

ABC-468-A
92 # 2

AGENCY FOR INTERNATIONAL DEVELOPMENT

PROJECT DATA SHEET

1. TRANSACTION CODE: A (A = Add, C = Change, D = Delete) — Amendment Number: — DOCUMENT CODE: 3

COUNTRY/ENTITY: SENEGAL

3. PROJECT NUMBER: 685-0301

4. BUREAU/OFFICE: 06

5. PROJECT TITLE (maximum 40 characters): RICE STRUCTURAL ADJUSTMENT

6. PROJECT ASSISTANCE COMPLETION DATE (PACD): MM 03 DD 31 YY 99

7. ESTIMATED DATE OF OBLIGATION (Under 'B.' below, enter 1, 2, 3, or 4)
A. Initial FY 94 B. Quarter 2 C. Final FY 94

8. COSTS ($000 OR EQUIVALENT $1 =)

A. FUNDING SOURCE	FIRST FY B. FX	C. L/C	D. Total	LIFE OF PROJECT E. FX	F. L/C	G. Total
AID Appropriated Total	1,150	850	2,000	1,150	850	2,000
(Grant)	(1,150)	(850)	(2,000)	(1,150)	(850)	(2,000)
(Loan)	( )	( )	( )	( )	( )	( )
Other U.S. 1.						
Other U.S. 2.						
Host Country		107	107		535	535
Other Donor(s)						
TOTALS	1,150	957	2,107	1,150	1,385	2,535

9. SCHEDULE OF AID FUNDING ($000)

A. APPROPRIATION	B. PRIMARY PURPOSE CODE	C. PRIMARY TECH. CODE 1. Grant	2. Loan	D. OBLIGATIONS TO DATE 1. Grant	2. Loan	E. AMOUNT APPROVED THIS ACTION 1. Grant	2. Loan	F. LIFE OF PROJECT 1. Grant	2. Loan
(1) SS				0	0	2,000		2,000	
(2)									
(3)									
(4)									
TOTALS				0	0	2,000		2,000	

10. SECONDARY TECHNICAL CODES (maximum 6 codes of 3 positions each)

11. SECONDARY PURPOSE CODE

12. SPECIAL CONCERNS CODES (maximum 7 codes of 4 positions each)
A. Code
B. Amount

13. PROJECT PURPOSE (maximum 480 characters)

TO INCREASE THE INCOMES OF FARMERS CURRENTLY PRODUCING PADDY RICE FOR THE INTERNAL SENEGALESE MARKET THROUGH THE LIBERALIZATION OF RICE MARKETING AND PROCESSING.

14. SCHEDULED EVALUATIONS
Interim MM 10 YY 95 MM YY Final MM 02 YY 98

15. SOURCE/ORIGIN OF GOODS AND SERVICES
☐ 000 ☐ 941 ☐ Local ☒ Other (Specify) 935

16. AMENDMENTS/NATURE OF CHANGE PROPOSED (This is page 1 of a ____ page PP Amendment.)

17. APPROVED BY
Signature: Carol A. Peasley
Carol A. Peasley
Title: Acting Assistant Administrator for Africa
Date Signed: MM 02 DD 18 YY 94

18. DATE DOCUMENT RECEIVED IN AID/W, OR FOR AID/W DOCUMENTS, DATE OF DISTRIBUTION
MM DD YY

PROJECT AUTHORIZATION

Name of Country: Senegal

Name of Project: Rice Structural Adjustment Program Complementary Project

Number of Project: 685-0301

1. Pursuant to Section 496 of the Foreign Assistance Act of 1961, as amended, I hereby authorize the Rice Structural Adjustment Program Complementary Project for Senegal (the "Cooperating Country"), involving planned obligations of an amount not to exceed Two Million United States Dollars (U.S. $2,000,000) in grant funds ("Grant") over a five-year period from the date of authorization, subject to the availability of funds in accordance with the USAID OYB/allotment process, to help in financing foreign exchange and local currency costs for the Project. The planned life of the Project is five years from the date of initial obligation.

2. The Complementary Project will finance commodities, technical assistance, training, surveys and studies to enable the Ministry of Agriculture's Unité de Politique Agricole ("UPA") to monitor policy reforms in the rice sub-sector and initiate any corrective steps as necessary. It also will finance required audits and evaluations of the Rice Structural Adjustment Program.

3. The Project Agreement, and amendments thereto, which may be negotiated and executed by the officer to whom such authority is delegated in accordance with USAID regulations and delegations of authority, shall be subject to the following essential terms and covenants and major conditions, together with such other terms and conditions as USAID may deem appropriate.

a. <u>Source and Origin of Commodities, Nationality of Services</u>

Commodities financed by USAID under the Project shall have their source and origin in Senegal, the United States, or in countries included in USAID Geographic Code 935, except as USAID may otherwise agree in writing. Except for ocean shipping, the suppliers of commodities or services shall have Senegal, the United States, or countries included in USAID Geographic Code 935 as their place of nationality, except as USAID may otherwise agree in writing. Ocean shipping financed by USAID under the Project shall be financed only on flag vessels of the United States or countries included in USAID Geographic Code 935, except as USAID may otherwise agree in writing.

b. Conditions Precedent to Disbursement

Prior to the first disbursement or to the issuance of any commitment documents under the Project Grant Agreement, the Cooperating Country shall, except as the Parties may otherwise agree to in writing, furnish to USAID, in form and substance satisfactory to USAID:

(i) An opinion of counsel acceptable to USAID that the Project Grant Agreement has been duly authorized and/or ratified by, and executed on behalf of, the Grantee, and that it constitutes a valid and legally binding obligation of the Grantee in accordance with all of its terms;

(ii) A statement of the names of the persons holding or acting in the office of the Grantee specified in Section 8.2 of the Project Grant Agreement and of any additional representatives, together with a specimen signature of each person specified in such statement.

Carol A. Peasley

Carol A. Peasley
Acting Assistant Administrator for Africa

18 Feb. 1994

Date

O:\SWAPUB\DOCS\SENEGAL\RSAP.AUT
Drafted:RLA:DAAdams:11/16/93

Clearances:

USAID/Senegal:

PRM:JVanderVeen (draft)
ANR:LJepson (draft)
PDO:JWooten (draft)
OFM:WMcKeel (draft)
DDIR:DLSheldon (draft)

USAID/W:

AFR/SWA:JBreslar	(draft)	Date:	02/09/94	
AFR/SWA:TVandergriff	(draft)	Date:	02/09/94	
AFR/SWA:WDarkins	(draft)	Date:	02/09/94	
AFR/SWA:JGilmore	(draft)	Date:	02/16/94	
AFR/DP/PFP:PRader	(draft)	Date:	02/09/94	
AFR/ARTS/EA:JSmith	(draft)	Date:	02/09/94	
AFR/ARTS/FARA:JGaudet	(draft)	Date:	02/09/94	
GC/AFR:PJohnson		Date:	18 Feb 94	
G/R&D/WID:GSteele	(draft)	Date:	02/14/94	
G/R&D/WID:PBoyle	(draft)	Date:	02/14/94	

Senegal: Rice Structural Adjustment (RSA) Program/Project

Action Memorandum for the Assistant Administrator
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Project Authorization

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LIST OF ACRONYMS

AE	Adult Equivalent
AEPRP	African Economic Policy Reform Program
AFR	Africa Bureau
AFR/ARTS	Africa Bureau/Analysis, Research, and Technical Support
AFR/SWA	Africa Bureau/Sahel West Africa
AFR/ONI	Africa Bureau/Office of New Initiatives
AFR/DP	Africa Bureau/Development Planning
AID	(United States) Agency for International Development
AJAC	Association des Jeunes Agriculteurs de la Casamance
API	Assessment of Program Impact
ATA	Agent Technique d'Agriculture
ATE	Agent Technique d'Elevage
ATEF	Agent Technique des Eaux et Forêts
ATH	Agent Technique d'Horticulture
BCEAO	Banque Centrale des Etats de l'Afrique de l'Ouest (Central Bank of West African States)
CARAT	Centre d'Appui pour le Recyclage des Agents Techniques
CARIT	Centre d'Appui pour le Recyclage des Ingénieurs des Travaux
CBNRM	Community-Based Natural Resources Management
CDH	Centre pour le Développement de l'Horticulture
CERP	Centre d'Expansion Rurale Polyvalent
CFD	Caisse Francaise de Développement
CGRSP	Commissariat Général à la Réforme du Secteur Parapublic
CIF	Cost Insurance Freight
CNAPTI	Centre national d'Application des Pratiques et Techniques de l'Irrigation.
CNCAS	Caisse nationale de Crédit Agricole du Sénégal (Agricultural Credit Bank)
CNTS	Confédération Nationale des Travailleurs du Sénégal
CPSP	Caisse de Péréquation et de Stabilisation des Prix (Price Equalization and Stabilization Fund)
CV	Coefficient of Variation
DA	Direction de l'Agriculture
DDI	Direction de la Dette et de l'Investissement
DERBAC	Projet Autonome de Développement Rural de Basse Casamance
DFA	Development Fund for Africa
DPDA	Déclaration de Politique de Développement Agricole (Statement of Agricultural Development Policy)
DRC	Domestic Resource Cost
ECAMI	Energy, Commodities, African Management and Investment
EEC	European Economic Community
EISMV	Ecole Inter-Etats des Sciences et Médecines Vétérinaires
ENCR	Ecole Nationale des Cadres Ruraux
ESF	Economic Support Fund
ESP	Enquête sur les Priorités

FCFA	Franc de la Communauté Financière Africaine
FED	Fonds Européen de Développement
FY	Fiscal Year
GDP	Gross Domestic Product
GES	Groupements Economiques du Sénégal
GIE	Groupement d'Intérêt Economique
GOS	Government of Senegal
IBRD	International Bank for Reconstruction and Development
IEE	Initial Environment Examination
IFPRI	International Food Policy Research Institute
IMF	International Monetary Fund
INDR	Institut national de Développement Rural
ISRA	Institut Sénégalais de Recherches Agricoles
ITA	Ingénieur des Travaux
KAP	Knowledge, Attitudes and Practices
Logframe	Logical Framework
MDRH	Ministry of Rural Development and Hydraulics
MEFP	Ministry of Economy, Finance and Plan
MOA	Ministry of Agriculture
NGO	Non Governmental Organization
NPA	Non Project Assistance
NPA	New Agricultural Policy
NRBAR	Natural Resources-Based Agricultural Research
ONCAD	Office National de Coopération et d'Assistance pour le Développement
OYB	Operational Year Budget
PAAD	Program Assistance Approval Document
PACD	Project Assistance Completion Date
PAGRI	Programme Pilote d'Amélioration des Services d'Appui aux Agriculteurs
PAIP	Program Assistance Initial Proposal
PARCE	Projet Aménagement et Reboisement du Centre-Est
PASA	Programme d'Ajustement du Secteur Agricole
PDESO	Projet de Développement de l'Elevage au Sénégal Oriental
PDRG	Plan Directeur de Développement Intégré pour la Rive Gauche de la Vallée du Fleuve Sénégal
PNAP	Programme National d'Appui aux Producteurs
PNVA	Programme National de Vulgarisation Agricole
PP	Project Paper
PRIMOCA	Promotion Rurale Intégrée en Moyenne Casamance
PVO	Private Voluntary Organization
RDA	Regional Development Agency/Authority
RSA	Rice Structural Adjustment
SAED	Société Nationale d'Aménagement et d'Exploitation des Terres du Delta du Fleuve Sénégal et des Vallées du Fleuve Sénégal et de la Falémé
SDP	Sahel Development Program

SODAGRI	Société de Développement Agricole et Industriel
SODEFITEX	Société de Développement des Fibres Textiles
SODESP	Société de Développement de l'Elevage dans la Zone Sylvo-Pastorale
SODEVA	Société de Développement et de Vulgarisation Agricole
SOMIVAC	Société pour la Mise en Valeur de la Casamance
SONACOS	Société Nationale de Commercialisation des Oléagineux du Sénégal
T&V	Training and Visit
UNACOIS	Union Nationale des Commercants et Industriels du Sénégal
UPA	Unité de Politique Agricole
URIC	Unité Rizeries, Intendance et Commercialisation
USAID	United States Agency for International Development
WAMU	West African Monetary Union

I. Summary and Recommendations

A. Introduction

The Senegal Rice Structural Adjustment (RSA) program uses Development Fund for Africa (DFA) funds. It is a $30 million, five year, non-project sectoral assistance program. The goal of the RSA program is to increase private sector incomes through the liberalization of agricultural markets. This is an avowedly long-term goal consistent with the thrust of USAID/Dakar's approved Country Program Strategic Plan. That strategic plan states that, for USAID/Dakar, "... emphasis is placed on increasing income per capita in the long run."

The primary purpose of the RSA program is to increase the incomes of farmers who currently produce paddy rice for the internal Senegalese market. The RSA program will accomplish this program goal by supporting the efforts of the Government of Senegal (GOS) to implement two fundamental changes in the rice sub-sector. First, administratively determined prices will be replaced with a price system that better reflects real economic costs. Second, inefficient parastatal enterprises will be replaced with efficient, competitive private enterprises.

Of the amount to be obligated under the RSA program, $28 million will be in the form of a non-project sector assistance program grant, and $2 million will be in the form of a complementary project. USAID/Dakar anticipates that the program grant will be disbursed in three tranches approximately 12 months apart over FYs 1994, 1995, and 1996 in the amounts of $8 million, $10 million and $10 million respectively. The complementary project, which is designed primarily to monitor and sustain the policy reforms in the rice sub-sector, will extend over five years. The RSA program will not generate local currencies.

The RSA program has been developed following an extended multi-donor/GOS dialogue on agriculture sector policy and an associated sector adjustment strategy, the Programme d'Adjustement du Secteur Agricole (PASA). Early in these discussions, the GOS developed a statement of agricultural policy, the Déclaration de Politique de Développement Agricole (DPDA), and an associated Action Plan. The most recent versions of the DPDA and its associated Action Plan were produced in November 1990. Thereafter, the GOS on the one hand, and the World Bank, the French, the European Economic Community, the Germans (as an associated partner), and USAID on the other hand, began to engage in very active discussions on PASA issues. These discussions successfully produced an agreement on many specific policy reform measures, including measures in the rice sub-sector. For the most part, these measures were not implemented according to the timetable that the GOS had, in principle, accepted. Partly as a consequence, with the exception of a few

pro-forma interactions, the PASA discussions halted in mid-1992.

After the Senegalese presidential and national assembly elections of 1993, USAID/Dakar signaled its interest in proceeding with a bilateral policy reform program focussed on the rice and, to a limited degree, the groundnuts sub-sectors. In early fall, 1993, after the newly installed government had settled in, the GOS responded by opening a formal dialogue with USAID/Dakar on these two sub-sectors.

Earlier in 1993, in discussions that were wholly consistent with but which took place outside the framework of the PASA discussions, USAID agreed to fund two studies on the privatization of SONACOS, the Senegalese groundnut processing parastatal enterprise. USAID/Dakar and AFR/ONI financed a team of international consultants from Price-Waterhouse who are now in Senegal working on the second (final) report on the privatization of SONACOS. USAID/Dakar anticipates that this report will be completed before the end of 1993.

Upon completion of this report, the GOS will have satisfied the first of three conditions relating to the groundnuts sub-sector proposed by USAID/Dakar in its Agriculture Sector Grant Program Assistance Initial Proposal (PAIP) of March 15, 1991 (the RSA Program Assistance Approval Document has evolved from this PAIP). The other two proposed conditions were, (1), the acceptance by the GOS of the report on the privatization of SONACOS, and, (2), the elimination of the state monopoly on the exportation of groundnuts and groundnut products. Taken together, these were the three conditions that referred to the groundnuts sub-sector in the proposed Agriculture Sector Grant PAIP. In short, the groundnuts portion of the program initially proposed in the PAIP is well in hand.

Additional work in the groundnuts sub-sector is called for; however, support for that work will require the massive resources of a multi-donor effort, as envisioned in the PASA discussions. As such, further policy reform efforts in the groundnuts sub-sector fall outside the manageable interest of USAID/Dakar. In November, 1993, the GOS and USAID/Dakar dropped the groundnuts sub-sector from further discussions under the bilateral policy reform program. The outcome of those bilateral discussions is the proposed RSA program, a tightly focussed policy reform program that covers only the rice sub-sector.

The RSA program remains a key component of the overall agreement tentatively negotiated by the GOS and the donors during the PASA discussions. It was always intended that USAID would be responsible for providing donor assistance to support policy reforms in the rice sub-sector. As reflected in the Senegal Agriculture Sector Program PAIP, USAID/Dakar has, for years, consistently focussed its attention on policy reforms in the rice

sub-sector.

The RSA program reinforces and extends past and present agriculture sector components of the various structural adjustment programs supported by the donor community in Senegal. It is a logical follow-on to USAID/Dakar's ESF IV-VI programs of the mid-1980s, which supported earlier reforms in Senegal's agriculture sector.

B. Recommended Actions

AFR/SWA recommends Bureau approval and initial authorization of the Rice Structural Adjustment (RSA) Program for the Government of Senegal (GOS). This combined project (685-0301) and non-project (685-0297) sector assistance program contemplates life-of-project authorizations and obligations totalling $30,000,000, consisting of $28,000,0000 of non-project sector assistance and $2,000,000 of complementary project support assistance. Initial FY 1994 obligations will total $8,000,000 of non-project sector assistance and $2,000,000 of project assistance. The proposed non-project assistance will require incremental authorizations and obligations totalling $20,000,000. The project assistance will be fully authorized and obligated in FY 1994 and will not require incremental obligation. Development Funds for Africa (DFA) and Sahel Development Program (SDP) grants will finance both the project and non-project sector assistance activities. Incremental obligations for the NPA program may be incurred through FY 1996. The anticipated PACD is December 31, 1999.

C. The Grantee

The Grantee will be the Government of Senegal, acting through the Ministry of Economy, Finance and Plan, and the Ministry of Agriculture. The program will support rice sub-sector price and institutional reforms designed and implemented by the Government of Senegal, which has an approved policy framework in place. This framework was negotiated, between the GOS and the key donors under the leadership of the World Bank, as part of the PASA discussions. The program is entirely consistent with, and fits under, the agriculture sector adjustment strategy of the GOS known as the Déclaration de Politique de Développement Agricole (DPDA). USAID/Dakar is supporting an initiative that is already in place. This initiative is led by the Government of Senegal. This program accepts the Grantee's approach to, and goals for, reform in the rice sub-sector and seeks to facilitate the implementation of those reforms.

D. Program Summary

The RSA program combines policy and institutional reforms with projectized inputs (designed largely to monitor the effects

of the RSA program in the rice sub-sector and to sustain policy initiatives) to establish the price incentive and institutional foundation upon which Senegal can build a more efficient rice production system.

Through the RSA program, the GOS will apply the general principles that have always informed the PASA discussions to the rice sub-sector. In particular, with the disbursement of the third tranche of the RSA program, the GOS: (1) will have completely eliminated all administered pricing in the rice sub-sector, (2) will have replaced a fixed paddy price with a reference (or indicative) paddy price, (3) will have abolished all rice transport cost subsidies assuring that consumers pay the full amount of differential transport costs, (4) will have eliminated fixed rice distributors' margins throughout the country, and (5) will have abolished the fixed wholesale price for broken rice in Dakar (the lynchpin of the current administered pricing system). With the exception of a duty (now a perequation) to be paid on imported rice, the GOS will no longer be able to manipulate directly any prices in the rice markets in Senegal.

Institutional reforms will be far-reaching as well. With the disbursement of the third tranche of the RSA program, the GOS will have completely reformed the key institutions of the rice sub-sector. The GOS will have privatized or closed all state-owned rice mills, will have eliminated SAED's activities in paddy marketing and processing, and will have eliminated CPSP's activities in local wholesale rice marketing. The CPSP, which at the present time is heavily involved in purchasing, importing, storing and transporting rice, will be restructured. After having been restructured, the activities of the CPSP will be limited to monitoring the rice sub-sector, contracting with the private sector only for broken rice imports under emergency conditions only, and contracting with the private sector for the management of security stocks of rice on behalf of the CPSP. The private sector will be importing broken rice. The Policy Program Matrix for the RSA program is presented in Annex A.

To achieve the objectives of the RSA program, AFR/SWA requests total program financing of $30,000,000. Of this $30 million in USAID grant funds, $28 million should be allocated as non-project (sector) assistance and $2 million as project support assistance.

E. Summary Program Budget

A summary program budget follows (Table 1).

II. Macroeconomic Policy Setting

Viewed in terms of historical trends in macroeconomic

aggregates, and despite numerous internal and external shocks, Senegal's economy has been remarkably stable. In real terms,

Table 1: Summary Program Budget ($ '000)

Item		Amount	
Conditional Resource Transfer			28,000
Complementary Project			2,000
Commodities		487	
Training		185	
Short-term Training	100		
In-country Workshops (Buy-in)	45		
In-country Seminars (Buy-in)	40		
Technical Assistance (Buy-in)		350	
Surveys and Studies		795	
Income Surveys	320		
DRC Studies	300		
Ad-hoc Studies	175		
Audits and Evaluations		95	
Contingency		88	
Total Complementary Project		2,000	
Grand Total RSA Program			30,000

between 1960 and 1989, the trend growth rate in gross domestic product (GDP) was 2.3 percent, just below the 2.4 percent 1960-1989 average population growth rate. While the long term trends indicate a small annual (0.1 percent) decline in per capita incomes, in more recent years GDP growth improved. In the 1980s real GDP grew at about 3.0 percent, slightly above the rate of population growth, which increased to 2.7 percent. Better results were achieved in the late 1980s, due in part to improved agricultural performance. GDP grew at over 4 percent in 1986, 1987 and 1988, turned slightly negative in 1989, and recovered to exceed 4 percent for 1990. Growth slowed again to one percent in 1991. Figures for 1992, which may be revised downward, indicate growth of almost three percent. Thus, despite relative long term stability, Senegal's economy is characterized by wide and abrupt year-to-year variation. For example, since 1980 the rate of growth in real GDP has varied from negative four percent (a result of the 1984 drought) to positive 15 percent (marking recovery from the 1980-81 drought). Indeed, a key feature of Senegal's growth pattern is its variability and its strong correlation with primary sector growth, which in turn is heavily dependent on rainfall.

A. Sources of Gross Domestic Product

The erratic nature of Senegalese growth is not unexpected in a small, open, agriculturally based economy that is subject to the vagaries of Sahelian rainfall and to fluctuating world prices for primary products. Thus, while there have not been dramatic changes in the composition of GDP over the past twenty-five

years, some significant adjustments in production patterns have occurred. The share of the primary sector (crops, livestock, fisheries and forestry) decreased from almost 24 percent of GDP in 1960 to about 19 percent in 1991, while the share of the secondary sector increased from 12 percent of GDP to 19 percent of GDP. The services sector, including domestic workers, held its share relatively constant at about 50 percent. While the share of administrative salaries, about 13 percent of GDP in 1965, decreased to about 10 percent in 1991 after rising to over 16 percent in the early 1980s before the adoption of the structural adjustment program.

1. Primary Sector

Real output from the primary sector as a whole has grown, on average, at only 1.4% per year. A large part of the sluggishness of the primary sector is due to very slow growth in the crops sub-sector, which generated growth of only 0.1 percent per year over the 1960-91 period, while the livestock and fishing sub-sectors posted growth rates of 3.8 and 3.1 percent, respectively. Output from the forestry sub-sector declined throughout the 1970s and early 1980s, reflecting the continued loss of forest cover in Senegal (harvest of about 60,000 hectares per year with recent replacement rates of about 20,000 hectares per year).

Primary sector production continues to have a considerable effect on the economy as a whole. Agriculture provides raw materials for about 30 percent of Senegal's industry, and the peanut oil mills alone contribute about 12 percent to the secondary sector. Additional significant impacts on output are generated in the tertiary sector, which includes transport, trade, and miscellaneous services.

The agricultural (crops) sub-sector is the largest single component of the primary sector, but its relative share of the sector total has declined steadly from about 70% in the 1960s to about 54% in the 1980s. Aside from bad weather in 1977, 1978, 1980, 1983, and 1989, a long-term shift from cash crops to lower-value food crops has contributed to stagnation of value added in agriculture, as a growing rural population seeks to maintain food security in the face of relatively constant yields and fixed or declining land resources. For example, the average total area planted in Senegal during the ten years between 1980 and 1989 was 3.6 percent below the 1970-79 average, with the area devoted to cash crops declining by 16.3 percent, and food crop areas rising by 8.7 percent (an average increase of 0.8 percent per year). However, since the rural population has been increasing by about 2.1 percent per year, the food crop area planted per rural person decreased by about 1.2 percent per year. This is reflected by an increasing need for imported food as well as by a serious erosion in rural purchasing power.

2. Secondary Sector

Senegal's protected secondary sector (industry) has been a leading growth sector of the economy, especially since the mid-1970s. More recently, however, the growth of the sector has stagnated. Lack of raw materials, high energy costs, high labor costs (manufacturing wages about 10 percent lower than the Cote d'Ivoire, but about 86 percent higher than Tunisia, and about 400 percent higher than Indonesia, according to Senegal: Evaluation of the New Industrial Policy, June 1992, published by the World Bank), excessive bureaucracy, and an overvalued domestic currency are some of the serious constraints to renewed growth in the industrial sector.

Industrialization (particularly through import substitution favoring agri-business and textiles) has been a high priority of the Senegalese government since early in the independence period. The industrial sector (mining, industry, handicrafts, construction, and public works) was the only sector to increase its share of GDP over the 1960-1991 period. The share of industry alone increased from 9 percent of GDP in 1960 to an estimated 15 percent of GDP in 1991. This level of industrial expansion has required significant tax breaks, direct subsidies from the Treasury, export incentive payments, direct government investment in productive enterprises, significant use of donor resources, the granting of monopoly rights, directed and subsidized credit, tariff barriers on competing imports, and the imposition of quantitative import controls (most of these controls were removed under the industrial sector reform of the mid-1980s).

3. Tertiary Sector

More important than the role of industry is the large share in the Senegalese economy held by the tertiary sector (transport, trade, miscellaneous services) throughout the independence period. Whatever the enthusiasm for industrial development, it should be clear that the Senegalese economy will never pass through the stage of dominance by manufacturing, construction, and related secondary sector activities that typified development in much of the West. Senegal made a direct transition from a predominantly agricultural economy to a predominantly service economy without ever passing through the industrial stage, and it did so more than thirty years ago, before the independence period began. A large part of the original development of the services sector was intended to support the administration of then-French West Africa. At independence, Senegal was left with a fairly well developed infrastructure, but one meant to support a much larger economic system.

4. Quartenary Sector

The quartenary sector is defined as the value of salaries of government and domestic (household) workers. The share of government salaries in GDP routinely averaged 12-13 percent of total GDP. The level in 1960 was in fact 12.6 percent, and the 1990 figure was 10 percent, with a peak in the early 1980s of over 16 percent before the IMF stabilization program began to bite with regard to the government wage bill. Salaries paid to domestic workers have increased from about one percent to 1.5 percent of GDP over the 1960-1990 period.

B. Exports/Imports

In addition to the changes in the aggregate structure of GDP, the dramatic changes in the composition of trade over time help trace the evolution of Senegal's economy. This is particularly evident with respect to commodity exports. Senegal was a quasi-monoculture exporter in the 1960s: groundnuts accounted for almost 80 percent of export value in 1965. Over time, Senegal has diversified into phosphates, petroleum re-exports, and fresh and canned fish -- currently the most important source of foreign exchange, representing about 25 percent of export value. Senegal also has developed a tourist industry which, by the late 1980s, provided foreign exchange earnings about equal to those from groundnuts, or about 20 percent of export value. This industry has fallen on hard times since 1991, first because of reduced traffic resulting from the Gulf War and second due to the security situation in the Casamance (the regions of Kolda and Ziguinchor).

As a whole, exports of goods and services have averaged about 25 percent of GDP since the mid-1980s, compared to 35 percent between 1975 and 1984. Exports grew at about 3 percent per year in real terms between 1986 and 1990. The general economic downturn of the last few years, compounded by domestic and trade policy failures, has contributed to a retrenchment of the sub-sector. Indeed, exports have decreased in both nominal and real terms since 1990.

The share of imports of goods and services in total GDP has averaged about 30 percent since the mid-1980s, compared to 45 percent between 1975 and 1984. In real terms, imports grew a little more slowly than exports between 1986 and 1990. Since 1990, import growth appears to have slowed to barely over 1 percent per year.

The share of food in commodity imports has decreased from over 30 percent in the early 1960s to about 20 percent currently. Rice imports, now at a level of about 400,000 metric tons, have held their share fairly constant over time. Petroleum products increased their share from about 12.5 percent of commodity imports in the mid-1970s to a peak of over 26 percent in 1980-81, before returning gradually to the former level. Machinery

imports, with a share of about 16 percent in the early 1960s, increased to an average share close to 30 percent in the late 1970s, during the period of rapid industrialization. They have since fallen back to about 25 percent.

C. Income Distribution

As suggested by the discussion above, the urban/rural dichotomy in the Senegalese structure of production has important implications for income distribution at any given point in time. At present, the primary sector as a whole accounts for about 20 percent of GDP in Senegal, too low for an economy where 61 percent of the population lives in rural areas. Moreover, a good deal of income within the primary sector does not accrue to persons living in rural areas.

As indicated in the Senegal Labor Force and Employment Survey, at the time of independence Senegal had one of the highest urban/rural income differentials in Africa -- a ratio of about 16:1. By the mid-1980s, this ratio had fallen to about 7:1 with only a few signs that temporary and permanent migration to Dakar and to secondary cities was coming to a halt (emigration from Senegal also has been important; about one million Senegalese reportedly live overseas).

The financial stabilization and New Agricultural Policy of the early- to mid-1980s contributed to turning the domestic terms of trade in Senegal in favor of rural producers. As a consequence, as reported in Commander, S., Structural Adjustment and Agriculture: Theory and Practice in Africa and Latin America, Duruflé estimated that rural per capita incomes were 15% of urban incomes in 1960/63, 16% over the period 1969/73 and 20% of urban incomes for the period 1979/83.

More recent estimates show similar urban/rural income relationships, as well as demonstrating the extreme variability in both rural and urban incomes. A comparison of average rural incomes for all zones to nationwide urban income, based on the data presented in Table 2, indicates a current rural-urban income ratio of about 30 percent. This suggests that at least part of the farm income enhancement goal of the New Agricultural Policy was achieved. However, the data also reveal enormous variations in incomes within both populations, and must therefore be interpreted with care. Indeed, the tendency for producers to allocate greater shares of land to lower value food crop production may indicate a slowing or reversal of the more favorable terms of trade situation for rural zones.

The conclusions are simple ones. Poverty in Senegal is primarily a rural phenomenon. Efforts to alleviate poverty must be based on efforts to increase the incomes of households engaged in crop production. Although the production of paddy rice for

Table 2: Estimated Per Capita Income in Rural and Urban Areas

Region		Period	Per Capita Income		Sources and definitions
			FCFA	Dollars	
Rural	Central Groundnut Basin	1989/90	39,974	141	Kelly, V., et. al, Consumption and Supply Impacts of Agricultural Price Policies, ISRA/IFPRI, December 1992, pg 63 and 68.
	(CV)		(50%)		
	Southwest Groundnut Basin	1989/90	53,035	187	
	(CV)		(93%)		
	Southeast Groundnut Basin	1989/90	60,730	213	
	(CV)		(57%)		
	Central-Eastern Senegal	1989/90	46,210	163	1989/90 is October-September; 1990/91 is July-June.
	(CV)		(146%)		
	All Rural Zones				
	Lowest 1/3	1989/90	27,410	96	Original data in Adult Equivalents (AE) converted to per capita: 1 AE = 1.3 people
	Middle 1/3	1989/90	38,410	135	
	Highest 1/3	1989/90	80,045	282	
Kaolack-Urban		1990/91	83,625	302	Rural income is gross value of output plus net value of other revenue generating activities.
	(CV)		(140%)		
Tambacounda-Urban		1990/91	79,950	289	
	(CV)		(67%)		
Both Urban Zones					
Lowest 1/3		1990/91	36,542	132	Original data in Adult Equivalents (AE) converted to per capita: 1 AE = 1.3 people
Middle 1/3		1990/91	75,913	274	
Highest 1/3		1990/91	171,764	620	
All Urban, Nationwide		1990	160,060	588	
Lowest 1/5		1990	31,189	115	
Middle 1/5		1990	117,072	430	
Highest 1/5		1990	836,384	3075	
Dakar		1990	197,578	726	
National GDP		1990	216,513	796	GOS/MFEP/DPS

Note: Exchange rates: 284 (1989/90); 272 (1990); 277 (1990/91) from IMF statistics (USAID database).
CV = coefficient of variation (standard deviation as a percent of the mean).

commercial markets absorbs only a small share of the resources of the agricultural sector, rice is an extremely important product in Senegal. As described below, the rice sub-sector is inefficiently organized in virtually all aspects: production, importation and distribution. The potential for substantial gain is great.

D. Policy Environment/Structural Adjustment

One of the first African countries to undertake a structural adjustment program, Senegal began implementing significant macroeconomic policy reforms in the early 1980s. Generous support from the donor community and the International Monetary Fund (IMF), supplemented by a series of public and private external debt reschedulings, stimulated further price, trade, fiscal, and monetary reforms in the mid- to late-1980s. Sector programs to liberalize both agriculture and industry were initiated, in the context of Senegal's medium- and long-term adjustment program of 1984 to 1992.

Starting in 1988, however, "adjustment fatigue" clearly set in and macroeconomic policy discipline began to weaken. In spite of efforts to recoup budget slippages in 1991, the trend of policy deterioration accelerated as the election campaign of 1993 approached. A few reform measures, such as tariff liberalization and public sector wage bill reduction, were gradually reversed. Policies aimed at stimulating the private sector, such as increasing the flexibility of the labor market and reducing the costs of industrial inputs, were weakly implemented all along. As a result, the outcome of structural adjustments to date is mixed. The economy as a whole is stagnant and uncompetitive. Although inflation remains under control at around 2 percent per year, and although liberalization of the financial sector continues, the budget deficit, briefly eliminated in 1991, is expected to reach about 2.2 percent of GDP by the end of 1993. Even this level is due only to the stringent austerity program initiated by the GOS to avoid a deterioration in the deficit estimated at 6.4 percent of GDP at mid-year, and to regain credibility among (and to secure renewed financing from) the donors.

Senegal has implemented some significant agricultural sector reforms over the last seven years, but there is much which remains to be accomplished. As of November, 1993, the reform program has accomplished the following: (1) all price and marketing restrictions on local cereals (except rice) have been removed; (2) price and import controls on intermediate and wholegrain rice have been eliminated; (3) input subsidies on agricultural chemicals, farm machinery, fertilizers, and seeds have been removed; (4) the fertilizer, farm equipment, and agricultural chemical production and distribution system has been privatized and the majority of the seed production and distribution system has been shifted to the private sector; and, (5) several of the integrated regional development authorities have either been eliminated or vastly down-sized.

1. Macroeconomic Context

Despite recent difficulties, which to some extent reflect the challenges of sustaining economic reform in the context of building democracy, Senegal's achievements in macroeconomic policy should not be downplayed.

For example, the role of the government in the economy, measured by the ratio of public expenditures to GDP, has been reduced by about one third: from 32 percent in 1981, this ratio has been at or below 20 percent for the past three years. Many parastatal agencies have been closed, including a number of the rural development agencies, and most of those remaining have had their subsidies severely reduced if not eliminated.

The budget deficit as a proportion of GDP has declined from

a peak of 11.5 percent in 1981. Its current level of 2.2 percent, even though representing a deterioration from 1991 and 1992, is tame by comparison.

Inflation fell from a peak of 11.4 percent in 1985 to about 2 percent in 1991 and has remained at about that level ever since. Strong control over monetary policy is exercised by the regional Central Bank of West African States (BCEAO).

Prices of most consumer goods were decontrolled in 1987 and 1988, and the office in charge of price controls was abolished in 1990. Sixteen so-called strategic goods, including sugar, wheat and wheat flour, broken rice, cooking oil, pharmaceuticals, cement, electricity, water, petroleum and transportation remain controlled.

Credit policy, also under BCEAO guidance, continues to evolve toward greater flexibility. Interest rates are highly positive, a zone-wide weekly monetary auction has just been instituted which now determines the prime lending rate and is expected to lead to more flexibility in the overall structure of interest rates, bank-by-bank credit allocations are being replaced by a system of required reserves, and bank supervision is being conducted rigorously and at regular intervals. Preferential credit allocations were eliminated at the outset of the banking sector reform in 1988.

The current account deficit of the balance of payments fell from 12.2 percent of GDP in 1985 to 3.6 percent in 1991, but has since increased to an estimated 5.1 percent of GDP in 1993.

There are, however, several important shortcomings in Senegal's macroeconomic policy. These are most apparent in the fiscal and labor policy areas. The inability of the GOS to deal effectively with the exchange rate issue also has seriously affected the outcome of macroeconomic policy.

Specifically, in spite of the dramatic results at the level of the public sector deficit, budget policy still is not well defined. On the expenditure side, the government has found it difficult to set priorities, particularly with respect to the reduction of the public sector wage bill. As a result, budget cuts have by and large been taken across the board on operating expenses, severely hampering the efficient implementation of government operations, including the implementation of development projects. The current fiscal crisis finally led the GOS to adopt wage reductions among the austerity measures announced in August, 1993, and implemented as of October, 1993. These measures continue to meet with stiff resistance from unions, which continue to seek alternatives and to emphasize their displeasure by calling strikes.

In terms of public resource mobilization, the GOS has not been able to achieve a key goal of the structural adjustment program, namely a broadening of the tax base. Reliance on windfall profits from controlled products such as petroleum continues to be the rule. In order to compensate for declining income tax receipts, most of the tariff reforms of 1986-87, designed to stimulate industrial production, have been reversed. Not surprizingly, customs fraud has gained new vigor as a result. Neither has the GOS been able to eliminate the large-scale exonerations which result in substantial revenue losses. In 1991, 37.5 percent of the total value of imports (CIF value) were granted legal exonerations from the payment of import duties.

Another major policy problem is the high cost of labor. This issue has been on the reform agenda throughout the 1980s, since the high wage structure of Senegal, compared to that of many other developing countries, is a serious constraint to international competitiveness. Elliot Berg has noted that, in 1986, labor costs in the manufacturing sector in Senegal were 10 percent lower than in Cote d'Ivoire but 60 percent higher than in Malaysia and 370 percent higher than in Indonesia. In Ghana, in 1987, the average cost of a civil servant was equivalent to 1.3 times per capita GDP, compared with 9.1 in Senegal. Reduction in the public sector wage bill and implementation of more flexible labor policies in the economy at large are two aspects of the same issue. While some progress has been made in terms of introducing greater flexibility in hiring, the GOS has not yet officially adopted the new Labor Code drafted in 1991. The austerity program, in addition to a 15 percent reduction in public sector wages, also requires a four percent contribution from firms, which is to be taken out of workers' salaries.

Finally, the exchange rate issue is now recognized by virtually all analysts of Senegal's economy as a key impediment to development. Because of Senegal's membership in the seven-member West African Monetary Union (WAMU), it has no control over the exchange rate which has been pegged to the French franc at a rate of CFAF 50 = FF 1 since 1948. Reforms aimed at improving competitiveness have focussed on reducing inflation relative to trading partners (very successful), promoting established exports through subsidies (partially successful but now floundering due to the lack of budget resources), and reducing the level of protection through tariff policy (largely reversed in the late 1980s). Exchange rate overvaluation is conservatively estimated at around 50 percent. While an exchange rate change is by no means a panacea, and should not be implemented in the absence of complementary fiscal and monetary policies, it is now seen as almost inevitable given the economic distortions that exist in Senegal and in several other WAMU and Franc zone member countries. Many unknowns surround this issue, not the least of which is the amount of devaluation that would best suit the member countries, each of which faces a separate set of domestic

and external constraints.

2. Agricultural Policy

The basis for reform in Senegal's agricultural sector was established in 1984 when the New Agricultural Policy (NAP) was formulated. The NAP set price liberalization and state disengagement from production, processing and marketing agricultural products and agricultural inputs as the guiding principles for sector reform intended to improve rural incomes. Serious reforms began in 1986 following preparation of the 1986 Cereals Policy. Cumulative progress on implementing reforms was impressive through the late 1980s.

Starting in late 1989, the process of transferring the principles of the NAP into concrete action continued in the form of discussions on the Programme d'Adjustement du Secteur Agricole (PASA) between the GOS on the one hand, and the major donors led by the World Bank on the other. The PASA discussions started at the sector level. The discussions emphasized three major commodities: rice, groundnuts and cotton. Agricultural credit, agricultural research and natural resource management issues were also part of the discussions.

In late 1989 and early 1990, when the PASA discussions were still quite young, the GOS developed a preliminary statement of agricultural policy called the Déclaration de Politique de Développement Agricole (DPDA), and an associated Action Plan. Thereafter, the GOS on the one hand, and the World Bank, the French, the European Economic Community, the Germans (as an associated partner), and USAID on the other hand, began to engage in very active discussions on PASA issues. These discussions successfully produced an agreement on many specific policy reform measures, including measures in the rice sub-sector.

On the commodity side, the programs that emerged from these discussions were fairly specific. Policy proposals on natural resource management and agricultural credit issues were less so. Operationally, USAID/Dakar has responded to the natural resource policy issues with reform measures supported by the multi-year PL-480 program and, for implementation at the rural community level, by the new Community-Based Natural Resources Management (CBNRM) project. USAID/Dakar is responding to agricultural research issues through the Natural Resources-Based Agricultural Research (NRBAR) project.

a. PASA Discussions

The PASA has provided a valuable and productive mechanism through which the various donors and the GOS could collaborate in the review and analysis of major problems and constraints in the agricultural sector. It has been an especially useful mechanism

for coordination and for donor interaction. The PASA process required that the GOS initiate and maintain its own internal policy discussion and working groups. While the process of completing the program has been slow, the existence and maintenance of these kinds of interactions is clearly a positive, if non-quantifiable, outcome.

Given the complexity of the economic and social issues surrounding the major commodity systems being discussed, it became clear that a general "committee" was not the appropriate mechanism through which commodity specific adjustment proposals could be developed, so a series of technical sub-committees were formed (one for cotton, one for rice, and one for groundnuts). These committees developed, in turn, basic proposals for each sub-sector. The French are the only donor active in the cotton sector, so they and the GOS completed the cotton component of the PASA program. The other committees are composed of donors, the GOS institutions active in the respective sub-sector, the Ministry of Agriculture and the Ministry of Finance. Each committee reports to the Ministry of Agriculture and then to a larger group chaired by the Minister of Finance. This larger group consists of the GOS and virtually all active donors in Senegal. Under this process program agreements were completed for cotton and rice and basic guidelines were established for restructuring the groundnut system.

The character of the dialogue changed in mid-1992. By that time, most of the elements of the adjustment package had been defined. However, the process had been very time-consuming and occasionally frustrating. With presidential and national assembly elections scheduled to take place in 1993, the GOS did not implement the policy measures according to the timetable tentatively agreed upon by all parties. Unhappy with the progress on promised reforms on the macroeconomic policy front, the World Bank decided that the "competitivity" issue (involving, inter alia, the highly overvalued FCFA, the currency used in all the West African Monetary Union countries, including Senegal) represented a constraint which had to be eliminated before it (the IBRD) would make additional major investments in any of these countries. The European Economic Community (EEC) and later the French (who had already provided bilateral support to implement reforms in the cotton sub-sector as their contribution to the PASA reform program) followed the lead of the World Bank. This effectively halted the PASA discussions. The various technical committees still met from time to time to discuss the status of, or to continue to define specific programs, and both the World Bank and the EEC continued to participate and to contribute. But there was little substantive progress on PASA issues from mid-1992 until early fall, 1993.

In a small way, this change in the character of the PASA discussions helped resolve a problem of growing concern to the

donors. The World Bank and the EEC had earlier adopted the position that adjustment measures agreed to under the PASA would have to be defined, scheduled, and fully implemented before they would commit to a formal policy reform program in agriculture (although there seemed to be some ambiguity in the positions of these two institutions). The Bureau for Africa's Non-Project Sector Assistance Guidance of October 26, 1992, (NPA Guidance) may be flexibly interpreted, but it does state that reforms made prior to authorization give the appearance that associated disbursements are intended to provide primarily balance of payments or (in the case of Senegal) budgetary support, which are not DFA objectives (see Section V.A.2.b).

In the fall of 1993, responding to signals sent by USAID/Dakar and after having passed through the 1993 elections process, the GOS opened formal bilateral discussions with USAID/Dakar on the rice and ground-nuts subsectors, the two sub-sectors under the PASA discussions of primary concern to USAID. Meanwhile, in March, 1993, in a parallel development that took place outside the framework of the PASA discussions, Price-Waterhouse began a preliminary study (funded jointly by USAID/Dakar and AFR/ONI) on the privatization of SONACOS, the groundnut processing parastatal enterprise. Upon completion, this preliminary study led to another study (currently in progress), also funded jointly by USAID/Dakar and AFR/ONI, which will result in a final report to the GOS on the privatization of SONACOS. USAID/Dakar anticipates that this report will be formally submitted to the GOS in February, 1994.

Upon completion of this report, the GOS will have satisfied the first of three conditions relating to the groundnuts sub-sector proposed by USAID/Dakar in its Agriculture Sector Grant Program Assistance Initial Proposal (PAIP) of March 15, 1991 (the RSA Program Assistance Approval Document has evolved from this March 15, 1991, PAIP). The other two proposed conditions were, (1), the acceptance by the GOS of the report on the privatization of SONACOS, and, (2), the elimination of the state monopoly on the exportation of groundnuts and groundnut products. Taken together, these were the three conditions that referred to the groundnuts sub-sector in the proposed Agriculture Sector Grant program PAIP. In short, the groundnuts portion of the program initially proposed in the PAIP is well in hand.

Additional work in the groundnuts sub-sector is called for; however, support for that work will require the massive resources of a multi-donor effort, as envisioned in the PASA discussions. As such, further policy reform efforts in the groundnuts sub-sector fall outside the manageable interest of USAID/Dakar. In November, 1993, the GOS and USAID/Dakar dropped the groundnuts sub-sector from further discussions under the bilateral policy reform program. The outcome of those bilateral discussions is the proposed RSA program, a tightly focussed policy reform

program that covers only the rice sub-sector.

The RSA program remains a key component of the overall agreement tentatively negotiated by the GOS and the donors under the PASA discussions. It was always intended that USAID would be responsible for providing donor assistance to support policy reforms in the rice sub-sector. As reflected in the Senegal Agriculture Sector Program PAIP, USAID/Dakar has, for years, consistently focussed its attention on policy reforms in the rice sub-sector.

b. USAID/GOS Dialogue on the Rice Structural Adjustment Program

Discussions under the PASA umbrella on the rice sub-sector program were largely completed in March, 1992. The rice sub-sector program was designed to rationalize a broad array of distortions in rice pricing and to restructure the key parastatal institutions involved in the sub-sector. Negotiations on the rice sub-sector dealt extensively with politically sensitive fiscal issues (the perequation, or tax, on imported rice generates revenues for the GOS and locally produced rice, being heavily subsidized, absorbs those revenues). The stability of retail rice prices and assurances concerning the quantities of regional rice stocks also are politically sensitive issues, especially in urban areas.

The rice sub-sector in Senegal is rather unusual. It is linked, in complex ways, with two other important agricultural sub-sectors. Rice is a substitute in consumption with other local cereals consisting of, for the most part, coarse grains, essentially sorghum and millet. Coarse grains, in turn, are substitutes in production with groundnuts. Partly because Senegal is governed by the rules of the West African Monetary Union (WAMU) and is therefore unable to deal effectively with a severely overvalued domestic currency, it has adopted a second-best policy of heavily subsidizing its groundnuts export products and heavily taxing its rice imports. Doing so further complicates the interactions between rice, coarse grains, and groundnuts. The coarse grains markets are fully liberalized. The rice and groundnuts markets are tightly controlled.

As a consequence, the rice sub-sector policy reforms contemplated under this RSA program are unusual. Despite many surface similarities, analysts should not confuse what the GOS, with the support of USAID/Dakar, is attempting to accomplish in reforming the rice sub-sector with that more "typical" agricultural policy reform program that is familiar to most people who work in the development field. In that more "typical" situation, a model policy reform program would be designed to increase production and to free markets by eliminating a government-controlled marketing board and consumer subsidies

(see, e.g., Section IV.A.3.a of the NPA Guidance). In that "typical" situation, benefits ordinarily accrue to the producers and the taxpayers while costs ordinarily are borne by the consumers and the former employees of the marketing board. However, in Senegal, unlike the "typical" case just outlined, the government at present heavily taxes imported rice which is the basic consumer wage good purchased by politically potent urban residents. Production by farmers, not consumption by consumers, is highly subsidized. This unusual policy context heavily informs the nature and the impact of the reforms that will be carried out under the RSA program.

In broad terms, the package for the rice sub-sector includes elimination of fixed wholesale and retail prices in the various regions, transfer of internal distribution of imported rice to the private sector, liberalization of rice imports, elimination of state intervention in processing and marketing locally produced rice, institution of a flexible farm paddy price, and a restructuring of SAED (the paddy purchasing and processing parastatal active in the Senegal River Valley) and CPSP (the rice importing and marketing parastatal). USAID/Dakar's current multi-year PL-480 program supports the RSA program by privatizing the management and distribution of PL-480 rice.

Implementation of some rice sector reform measures has begun, but in a piecemeal fashion. The private sector soon will have installed enough paddy processing capacity to process all of the rice in the Senegal River Valley. Price controls and import restrictions on intermediate and long grain rice have been eliminated, but the far larger broken rice import market still is tightly controlled. As just noted, the process of privatizing the management and distribution of PL-480 rice is well underway. But the most important adjustment elements of the rice sub-sector program have not been implemented. These are: elimination of the fixed farm price for paddy, elimination of the rice transport subsidy on broken rice (this is essentially a fee tacked on to the price of rice to cover the negotiated costs of transporting rice to different locations throughout Senegal), elimination of regional wholesale and retail margins, disengagement of the CPSP from the regional distribution of rice, adoption of a CPSP restructuring plan, disengagement of SAED and CPSP from local rice processing and marketing, and liberalization of broken rice imports. In addition, the GOS has agreed to "restructure" CPSP. The precise terms of reference are now being negotiated; the final terms of reference will restrict the new CPSP to (1) rice market price monitoring activities, (2) managing contracts implemented by the private sector to import broken rice, but only in times of declared emergency, and (3) managing contracts implemented by the private sector to look after stocks of rice to be consumed in times of declared emergencies. USAID/Dakar has recently agreed to finance the work necessary to develop a restructuring plan for the CPSP outside the confines of the RSA

program. This work is expected to begin early in 1994.

E. Exceptional Financing Requirements and Arrangements

As noted in Section II.D. above, the stringent budget measures adopted by the GOS in the 28-month austerity program announced in mid-August 1993 were designed to control a growing deficit that threatened to reach 6.4 percent of GDP by the end of 1993. This program, which includes public sector salary cuts of 15 percent, will reduce operating expenditures by 16.5 percent compared to 1992. Revenue deterioration in 1993 (almost 13 percent) cannot be fully recovered in the final months of the year. Nevertheless, the doubling in the customs stamp tax from 6 to 12 percent and elimination of some customs tax exonerations are expected to yield about CFAF 9 billion; additional "contributions" in the form of forced loans from private sector firms and the 4 percent levy on private workers' salaries will increase revenues by an estimated additional CFAF 10.5 billion. The increase in revenues will contribute one third and the decrease in expenditures will contribute two thirds of the correction needed. As a result, the overall budget deficit will be held to 2.2 percent of GDP. The GOS also counts on resumption of donor financing and debt rescheduling to cover the estimated financing gap of CFAF 53.3 billion, or $ 184 million.

For 1994, the situation appears even more difficult. In spite of holding expenditures to just below the 1993 level, including a further decrease in the overall public sector wage bill, and increasing revenues by 14 percent (back to the 1992 level), the currently estimated financing gap will reach CFAF 75 billion, or $ 258 million. This reflects the GOS desire to clear all of its external arrears by the end of 1994.

Both of these estimates are based on the assumption that Paris Club rescheduling of external debt can be secured, for a value of about $ 103 million each year.

This situation results from a number of factors. Revenues have deteriorated partly as a result of a series of three relatively poor harvests. The dependence of the economy on agriculture, documented in this paper, means that a bad harvest is reflected not only at the farm level, but also in the incomes of traders, transporters, and food processors, including some large industrial firms. The tourism industry was also severely affected in part by a resurgence of domestic unrest in the Ziguinchor Region where the largest tourist facilities are located. Inappropriate policies are at fault as well, since the GOS has not been able to promote continued economic diversification and growth through the formal private sector that would increase the tax base. Control over expenditures deteriorated in late 1992 and early 1993, as the elections approached. In addition, the failure of the GOS to "stay on the

wagon" with the IMF -- resulting partly from a refusal to take unpopular measures such as wage cuts just prior to an election campaign -- has meant suspension of budget support from the World Bank and several other donors, as well as reductions in project aid.

Clearly, Senegal will need the help of all its friends in order to address these demanding circumstances. Through the austerity program, the GOS hopes to demonstrate its will to pursue sound macroeconomic policies in view of moving toward sustainable growth and to restore its credibility among the donors. IMF teams visited Senegal in July and October, 1993, to discuss GOS intentions. Ministry of Finance officials have also made several trips to Washington and Paris for discussions with the multilateral institutions and other officials. The GOS hopes to be able to secure a Paris Club rescheduling in the near future, as well as a resumption of substantial bilateral aid flows.

III. Analytic Framework

A. The Agricultural Sector

Senegal's population is divided approximately 40% urban and 60% rural, with about 23 percent of the national population living in the greater Dakar area. Official population projections estimate that the national population will exceed nine million by 1998 (a national growth rate of 3.1% per year). By 2015 the national population is projected to be about double the 6.9 million people counted by the 1988 Population Census. In 1988 almost one half (47%) of the total population was below 15 years of age.

The Dakar "bias" in the geographic distribution of the population is reflected in the distribution of national output, in that around 55 percent of GDP is generated in and around Dakar (this estimate, which probably is still valid, is based on 1981-84 data; recent data on the regional distribution of income are not available). Nearly half of the contribution to GDP generated outside Dakar is attributed directly to the primary sector. Given the estimates of per capita income in rural and urban areas provided in Section II.C above, it is clear that, while there is undeniably poverty in the Dakar region, a substantial majority of the poor people in Senegal live in rural areas.

If related secondary activities in transportation, processing and marketing are included, the share of GDP attributable directly and indirectly to the primary sector would be much greater. Clearly, the primary sector, and within the primary sector crop-based agriculture, is the dominant economic activity outside Dakar. The <u>1992 Enquête sur des Priorités (Priority Survey)</u> found that 65% of the economically active

population in Senegal was engaged in agriculture. Within rural areas, 81% of the heads of household claimed agriculture as their principal activity. Similarly, the 1992 USAID Knowledge, Attitudes and Practices Survey of the rural population in the regions of Fatick, Kaolack, Tambacounda, Kolda and Ziguinchor found that 85% of all active family members above 10 years of age were engaged in agriculture (92% if the category "student" is excluded). Village surveys conducted in 1988 under the ISRA/IFPRI Price Policy Study gave similar results -- cropping was the primary source of income by almost 100% of all villagers surveyed.

The character of agricultural production changes dramatically from the far north (the Senegal River Valley, where irrigated agriculture, largely rice, is dominant) through the north and north-east (where rainfed agriculture is problematic and livestock are more important) into the central groundnut basin (where the dominant crops are millet and groundnuts) and through the southern half of the country (where a more diverse set of crops is possible, including sorghum, maize, rice, groundnuts, fruits, vegetables and cotton). However, with the exception of the regions of St. Louis in the north and Ziguinchor in the south, groundnuts and millet/sorghum account for the majority of the area planted and quantity produced. Groundnuts and millet/sorghum account for about 85 percent of all land planted in Senegal. 43% of all land planted and 47% of all land planted to groundnuts and of all land planted to millet/sorghum are in the regions of Fatick and Kaolack. Fatick and Kaolack also account for all of the edible groundnuts produced in the country (See Table 3). Crop diversification increases in the south (Tambacounda, Kolda, and Ziguinchor), with maize, and paddy rice gaining an important share of area planted. All the cotton produced in Senegal is grown in Kolda and Tambacounda.

In order of importance by volume produced nationally, the various crops rank as follows: (1) groundnuts, (2) millet/sorghum, (3) paddy rice, (4) maize, and (5) cotton. It is notable that three of the five most important crops (and both of the major cash crops) are those which still have fixed producer and consumer prices and considerable state intervention in marketing and processing -- groundnuts, cotton and rice. These crops are also closely linked on the production side through competition for productive resources such as land, labor, and other inputs, as well as on the consumption side. Groundnuts are the single most important source of cash revenue for rural families, as well as a major food source (national consumption as vegetable oil alone is equivalent to about 38 kg of groundnuts per capita). Rice accounts for over one-half of all cereals consumed by the urban population and is second only to millet/sorghum as a source of food for the rural population as a whole. In Ziguinchor, Kolda and St. Louis, rice accounts for

Table 3: Senegal: Area Planted, Production and Yields for Major Crops (Three Year Average, 1990-92)

Crop	Saint Louis	Louga	Thies	Diourbel	Sine-Saloum			Casamance			Tamba-counda	Total Senega
					Fatick	Kaolack	Total	Ziguinchor	Kolda	Total		
(1000 ha)												
Area	63.5	220.1	225.5	226.6	240.2	703.6	943.8	59.8	253.3	313.0	182.8	2175.7
Millet/Sgm	23.3	93.7	111.1	119.6	125.6	328.6	454.2	17.8	90.7	108.5	63.4	973.9
Maize	0.9	--	--	--	1.9	34.2	36.2	2.0	38.0	40.0	26.3	103.8
Paddy	23.5	--	--	--	0.1	0.1	0.2	19.7	25.9	45.7	3.9	73.3
Cowpea	5.8	22.0	8.8	15.5	1.7	1.9	3.7	0.2	0.5	0.7	0.1	56.4
Manioc	--	--	14.0	0.0	0.4	0.3	0.8	0.1	0.2	0.3	--	15.2
Oil Nuts	10.0	104.4	91.5	91.5	107.5	309.4	416.8	19.9	77.0	96.9	73.7	884.8
Table Nt	--	--	--	--	3.0	25.8	28.8	--	--	--	--	28.8
Cotton	--	--	--	--	--	3.2	3.2	--	20.9	20.9	15.5	39.6
Production (1000 mt)												
Millet/Sgm	3.9	28.0	56.0	68.5	74.9	251.7	326.5	13.4	87.9	101.3	52.3	636.4
Maize	2.3	--	0.1	--	1.3	35.9	37.3	2.1	45.2	47.3	28.9	115.9
Paddy	117.8	--	--	--	0.2	0.1	0.4	22.5	27.0	49.5	8.1	175.8
Cowpea	0.3	2.9	1.4	6.5	0.5	0.6	1.1	0.1	0.2	0.3	0.0	12.5
Manioc	--	--	34.9	0.1	1.2	0.2	1.4	0.6	0.8	1.4	--	37.8
Oil Nuts	1.3	48.4	39.3	56.3	80.2	249.8	330.1	19.5	77.4	96.9	71.3	643.5
Table Nuts	--	--	--	--	2.9	23.0	25.9	--	--	--	--	25.9
Cotton	--	--	--	--	--	2.6	2.6	--	25.3	25.3	16.5	44.3
Yield (Kg/h)												
Millet/Sgm	167	299	504	572	596	766	719	749	969	933	824	653
Maize	2433	--	--	--	690	1050	1030	1051	1190	1183	1100	1117
Paddy	5012	--	--	--	1879	1172	1574	1139	1043	1084	2097	2399
Cowpea	50	131	156	421	275	308	293	419	483	463	535	221
Manioc	--	--	2485	1638	2832	571	1793	7000	3723	4677	--	2491
Oil Nuts	127	463	430	615	747	808	792	980	1004	999	968	727
Table Nt	--	--	--	--	975	891	899	--	--	--	--	899
Cotton	--	--	--	--	--	793	793	--	1208	1208	1067	1119

Source: Averages of data from MDRH/DS

over half of all cereals consumed, and expenditures for rice represent the major cash disbursement for most rural families in nearly all regions.

The paramount importance of crop-based agriculture is reflected by GOS policy toward the agricultural sector, especially by that part of the policy related to rice and groundnuts. Production and rural incomes have been, at best, stagnant for several years. The GOS has tried to compensate by administratively manipulating farm and consumer prices. Rather than helping correct the problems, administered pricing policies have actually contributed to creating greater distortions in resource use, and have helped to establish a situation under which a major part of the agricultural sector is no longer viable.

B. Problem Statement: Prices and Institutions

The New Agricultural Policy of 1984 initiated an extensive program intended to liberalize and privatize production, marketing and processing in the agricultural sector. This policy was refined by the 1986 Cereals Policy and subsequently was implemented through a series of specific agricultural sector programs (see Section II.D.2 above). By 1990, the process of creating a more open, more flexible agricultural sector was well underway, but the major and the most politically sensitive crop sub-sectors were still under tight state control.

The state, for political reasons, attempted to maintain high (well above equivalent world market prices) and stable farm prices for cotton, groundnuts and paddy rice. Organizational and operational inefficiencies associated with a tendency to maximize employment, combined with both falling world market prices for cotton and groundnuts and with a foreign exchange disequilibrium, began to generate significant deficits, especially in the groundnut and cotton sub-sectors. Structural disequilibria in the local rice sector continued to absorb a large share of the gains from the perequation on imported rice. It became obvious that the existing structures of these sub-sectors were absolutely unsustainable: any attempt to maintain the status quo would lead to a collapse of the groundnut and cotton sub-sectors (the primary sources of cash income for the rural population) and would bring into question the economic viability of the massive investments being made in irrigated agriculture in the Senegal River Valley. At this point, the GOS developed the DPDA. With this policy statement, the GOS recognized officially that the solution to the problems in agriculture would be based on privatization, market liberalization, and institutional reform in the rice and groundnut sectors, and on the complete reorganization of the cotton sub-sector.

The structural problem in the rice sub-sector manifests itself in numerous ways: an administratively determined farm price for paddy; administratively determined marketing margins at both the wholesale and retail levels; additional distortions in relative as well as regional prices because of transport subsidies paid by the CPSP; extensive state intervention in processing and marketing locally produced rice, including payment of large subsidies to SAED for processing locally produced rice; and, state control through CPSP of broken rice imports. The rice sub-sector is organized and operated according to political rather than economic considerations, with the practical consequence that enormous amounts of local resources are misallocated each year.

This inefficiency, this severe misallocation of resources, is huge. But, for the purposes of the RSA program, more important still is the emphasis on improving economic efficiency at the farm household level. Under the terms of the RSA program,

woefully inefficient parastatal enterprises will be replaced with more efficient, competitive enterprises who respond primarily to market signals, not government directives. Woefully inefficient paddy producers will either become more efficient producers of rice or will reallocate their resources to other crops.

To emphasize the point: USAID/Dakar's strategic approach to the agriculture sector is couched in terms of increasing yields per hectare, not in terms of increasing production (see, e.g., USAID/Dakar's Assessment of Program Impact indicators under Strategic Objective Number 2, which refer, inter alia, to yields per hectare -- not to production -- of rice). USAID/Dakar is deeply concerned with increasing the efficiency of Senegalese agriculture. Whether total production of paddy increases or falls is of great interest, but is a derivative concern. This holds for the RSA program as well.

Existing policy in the rice sub-sector is intended to provide production incentives. The full cost of producing, processing, and transporting rice from the Senegal River Valley to Dakar is around 300 FCFA/kilogram, while the official wholesale price is 127 FCFA/kilogram and the CIF cost of imported rice is about 60 FCFA/kilogram. There is no evidence that these incentives have led to increased production levels. They have, instead, created a highly wasteful resource allocation system. The GOS has created complicated, cumbersome and costly systems to support production incentives to farmers who produce paddy rice. The system can no longer be sustained.

C. Financial Burdens and Adjustment

The inflexibility of past and present agricultural policies has led to the accumulation of substantial agricultural sector debt which burdens the economy. For example, the ONCAD debt has undergone several consolidations, to soften terms and to extend the repayment period, since 1980. As a result, although the government has already paid some CFAF 63 billion in interest since 1983, the principal amount of 64.3 billion is still unamortized. Overdue crop credit, amounting to FCFA 33.5 billion in principal, consists of marketing loans, guaranteed by the government, made by banks to the marketing boards essentially for peanut (80 percent), cotton, and domestic paddy rice purchases.

In essence, these agricultural debts accrued because of past and present policies, which have disconnected local prices from the realities of the world economy and which have attempted in some cases to attain contradictory goals. For example, for political reasons, in 1988 the GOS reduced the official retail price for broken rice from 160 to 130 FCFA per kilogram while holding the farm paddy price at 85 FCFA per kilogram. Thus the locally produced and processed rice, which already required a substantial state subsidy, became even less competitive and the

productivity of the billion-dollar irrigation investment in the Senegal River Basin became even more problematic. At the same time, the goal of increasing local cereals production, processing and consumption was frustrated.

Thus, despite some useful reforms in agricultural policy, the rice sub-sector retains old and unsupportable management structures. In the case of rice, agricultural policy has led primarily to massive distortions in investment priorities largely favoring the Senegal River Valley. At the same time, the policy produced inefficient marketing (to include imports) and processing institutions such as the parastatals SAED and CPSP.

D. Constraints Analysis

There are a number of constraints inhibiting the development of the rice sub-sector. Some are environmental and some are structural. Some important ones are policy related.

There are obviously natural constraints, especially those imposed by a Sahelian environment such as poor rainfall and insect infestations. Unfortunately, there is little that USAID/Dakar can do to influence the levels of precipitation or the incidence of insect infestation in Senegal. Given the limits of USAID/Dakar's manageable interest, these and other natural constraints are accepted as givens.

With a population growth rate approaching 3 percent, Senegal faces ever-increasing pressure to grow or to import more food every year, just to be able to feed the increments to its population. Again, given the demographic characteristics of Senegal, there is little that anyone can do to influence the upward trend in the overall population growth through the medium term. This constraint also is accepted as a given.

Agricultural policy is within the manageable interest of the GOS. In policy terms, the first post-independence solution to Senegal's dominant development problem, covering roughly the period from 1960 to the mid-1980s, was to create a series of national and regional development agencies, impose extensive price and marketing controls, fix prices by administrative means, provide large and pervasive subsidies and create directed government credit and investment programs. The record of achievement was not good. Output stagnated and rural incomes declined. Major state institutions, including the rural credit system, collapsed.

In short, the principal constraint to the development of the rice sub-sector is the existing policy framework. The evidence is clear. In 1991, the import perequation was applied to about 412,000 metric tons of broken rice. But it takes the perequation from about three tons of imported rice to support the subsidy for

each ton produced in the Senegal River Valley. Thus, in 1991, the "break-even point" for a self-contained rice program in which the perequation just offsets domestic subsidies was a production level in the Valley of just over 137,000 metric tons. In 1991, domestic production was below that "break-even point" at about 115,000 metric tons.

In general, a perequation system, if efficiently implemented, makes sense as an element in a "second-best" policy system in which taxes on Senegalese imports offset subsidies on exports (to adjust for an overvalued domestic currency). But the perequation system makes no sense if those taxes are used to subsidize a product that cannot possibly compete in international markets. Under a rational "second-best" policy system, the GOS needs to subsidize its (otherwise competitive) exports. If the GOS also subsidizes its domestic producers of rice, it will inevitably place extraordinary pressure on its budget. With the bulk of the perequation being devoted to subsidizing domestic producers of rice, rather than producers of otherwise competitive exports, the logic of the "second best" breaks down.

That is what is happening in Senegal. Severe economic distortions are reflected in a distorted resource mobilization and allocation process. The GOS has come to recognize that the structure of the rice sub-sector and the supporting policies need to be changed. The GOS announced its intention to permit the price system to operate more effectively as an efficient resource allocation mechanism. And the GOS needed to dismantle, or thoroughly restructure, both SAED and the CPSP, the two parastatal enterprises that were inhibiting the development of efficient private markets in rice processing and distribution.

As documented in Section II.D.2, above, and in Annex 9, the GOS began to shift toward a more liberal agricultural policy environment in the mid-1980s. In the rice sub-sector, however, change was slow to arrive. In 1992 the GOS removed licensing requirements for the importation of intermediate and whole grain rice, and reserved all imports of non-broken rice for the private sector (except PL-480 rice which was still managed by the CPSP). In 1993 the GOS privatized the management (internal distribution was already privatized) of PL-480 rice. These were modest changes in a largely unchanged system. Rice remains today the only locally produced food grain that is still subject to state control. The rice policy still in place consists principally of subsidies to rice farmers in the Senegal River Valley and taxes on (largely urban) rice consumers.

The GOS clearly recognized that changes in the rice sub-sector would have to be based on the effort to induce greater efficiency in production, in processing, and in distribution. The GOS then correctly decided, as discussed above, to liberalize prices and reform the key institutions in the rice sub-sector.

There were, and still remain, powerful forces that seek to impede or reverse the implementation of these reforms.

In principle, the state itself should strongly favor these reforms. The RSA program should save (in GOS revenues not spent) annually over CFAF 6 billion (over $22 million) over three years (see Section I.1., below). Most of this budgetary savings comes from reduced subsidies to the paddy producers in the Senegal River Valley. Additional savings to the GOS flow from the elimination of the subsidy on distributing rice throughout Senegal.

The perequation on rice imports contributes substantial amounts ($47 million in 1991 on imports of broken rice only) to the fiscal coffers of the GOS. Since the government budget is badly out of balance at the present time, the GOS does not entertain lightly substantial reductions in this revenue source. Under the RSA program, the GOS clearly retains the right to tax imports of rice (as other commodities) as it deems appropriate. However, the CPSP will no longer be the institution that collects and transfers those funds to the GOS. Historically, the CPSP has been effectively controlled by powerful political forces (see Annex 7.a.1); this fact severely compounds the difficulties of implementing policy reform in the rice sub-sector.

However, USAID/Dakar believes that the political context now facilitates the implementation of the RSA policy reforms. The GOS has signaled its interest. The government, informally, has begun the long-awaited process of removing SAED from the business of purchasing and processing paddy. After lengthy delays, the government has permitted a private firm to implement a competitively won contract to manage the handling and distribution of PL-480 rice. On a larger canvas, the government has announced and is implementing a series of emergency economic measures designed to improve its deteriorating fiscal position. The government is engaged in discussions with the IMF and the World Bank with the intention of regaining the favor of the international financial community.

E. Justification of NPA (Sector) Assistance

The analysis of constraints in the rice sub-sector reveals that the problems of the sub-sector are pervasive. Through their direct or indirect impact on the prices of other crops, quite apart from the growing popularity of rice as a consumption item, developments in the rice sub-sector affect the most rural, as well as urban, inhabitants, either as consumers or producers or both. Interventions at the sector level can change the price signals faced by large numbers of individual farmers, and can thoroughly reform highly inefficient parastatal enterprises. Only through such interventions can the economy hope to make the massive reallocation of resources that are so urgently needed.

Non-project (Sector) Assistance (NPA) is specifically tailored to dealing with this kind of development problem.

USAID/Dakar has had considerable valuable experience with NPA programs. For example, under the Banking Sector Reform program (AEPRP-II), USAID/Dakar participated in the successful effort to reconstitute a totally bankrupt financial system. USAID/Dakar's experience with this program, as with similar DFA- and ESF-funded programs, strongly supports the general conclusion that sectoral policy programs are best supported through tranched disbursement of resources conditioned on well-specified performance indicators. Experience has taught us two specific related and crucial lessons.

First, the host government must be committed to the reforms. GOS policy makers must share a sense of "ownership" of the proposed reforms. It is not enough to specify, in a program agreement, that certain policy measures be enacted. Policy makers may be willing to enact legislation, issue decrees or otherwise reform -- on paper -- their policies in accordance with the perceived wishes of their partners in development. However, if they are responding primarily out of an urgent need for external financial resources, then the conditionalities involved may be met in form but not in substance. Under such conditions the NPA program will fail.

The negotiations for the Rice Structural Adjustment program have been long and difficult. The basic agreements were reached, in principle, more than 18 months ago. USAID/Dakar, while continuing the dialogue with the GOS despite the fact that other donors were, at best, marking time, worked patiently at the technical levels until the political situation became propitious for a solid agreement. The RSA is a GOS program. The GOS commitment to its program is strong. While frustrating, the delays associated with the election season (which encompassed roughly the 12 months of FY 1993) were unavoidable. The new GOS government now is completely ready to meet the commitments it prepared before that election season began.

Second, the performance indicators must be not only well-specified, but also verifiable by observation of their effects. Thus, for example, if the government issues a decree permitting private sector firms (rather than government parastatals) to manage the process by which whole grain PL-480 rice is received, stored and distributed to wholesale dealers, but if the government through other means sees to it that the privatization process does not actually take place, then the privatization condition has been met in form but not in substance. To prevent this situation from happening, field-based reality checks are essential to assure that well-specified policy declarations are in fact being properly implemented.

The verification measures specified in this RSA program call for a number of field-based reality checks. For example, the GOS will issue a decree that effectively puts SAED out of the rice purchasing and processing business. The verification measures will include not only that the GOS send to USAID/Dakar an official copy of the decree, but also that a GOS technical team conduct a field survey to verify that the decree has taken effect. USAID/Dakar then will conduct its own field survey to confirm independently that the policy reform measure is being effectively implemented. Only then will USAID/Dakar consider disbursing the tranched funds under the RSA program.

The RSA program conforms neatly to several of the defining characteristics of non-project sector assistance under the DFA. For example, USAID/Dakar has selected the rice sub-sector as the target sector of the RSA program. The rice sub-sector is readily characterized as a set of economic activities unified by a common output narrow enough to have an analytical identity; it is also broad enough, given the crucial importance of rice as a consumption staple of choice in Senegal, to encompass significant investment and policy issues (NPA Guidance, Section III.D.).

Within the rice sub-sector, the RSA program (1) will eliminate all administered prices in the rice subsector and (2) will virtually eliminate from any involvement in the rice subsector both the CPSP and SAED, the two parastatals that currently dominate, respectively, the rice trade (domestic and international) to and throughout Senegal, and the paddy purchasing and processing industry in the Senegal River Valley.

It will take a fairly long time to achieve the purpose of the RSA program. The NPA Guidance clearly encourages USAID to use DFA non-project sector assistance resources in a non-project modality for longer-term, sustained development efforts (see, e.g., Section V.A.2.c). At the same time, that guidance explicitly requires that, at a minimum, all DFA non-project sector assistance programs must result demonstrably in increased welfare at the household level (see, e.g., Section IV.A.2.b). Positive quantifiable and measurable effects at the household level of a significant policy reform program such as that envisioned in the RSA program are seldom noted in the short-term. In fact, USAID/Dakar anticipates that the initial effects of the RSA program on the principal target group (paddy farmers) will be negative: at first, paddy prices paid to producers probably will fall, if slightly, and rice prices paid by consumers probably will rise, if slightly. USAID/Dakar anticipates that positive income effects, at the household level for families currently engaged in paddy farming, will begin to appear about three years after the implementation of the RSA program. These positive effects will be triggered largely because paddy farmers increasingly will reallocate their production resources in response to changing price signals and to an improved, more

efficient institutional setting. To confirm these effects, the GOS and USAID/Dakar will monitor program impact over a five year period.

Several factors make this an opportune time for a sector assistance program in Senegal.

First, from the donor perspective, the momentum of agriculture policy reform is currently being carried by USAID/Dakar through the RSA program, following the halt in multidonor discussions largely due to the government's unwillingness to commit itself to controversial reforms in the extended pre- and post-election period. USAID/Dakar is virtually the only reform-minded donor that is still able to leverage policy change. The other big donors are constrained by policy decisions that link their non-project assistance to a formal agreement between the GOS and the IMF or to an appropriate currency realignment. In USAID/Dakar's view, it is misguided to lose the momentum of the agriculture sector policy reform process. After all, in the meantime, the situation in the rural areas would continue to deteriorate.

For USAID/Dakar, active support for agriculture policy reform began in 1985 with the three-year sequence of ESF programs (ESF IV, VI and VI) which helped finance initial reforms undertaken in the context of the New Agricultural Policy. To the government's credit, there has been relatively little slippage overall in the commitment to maintaining the reforms undertaken in the agriculture sector, in marked contrast to the situation which obtains in the industrial sector, where the package of recommended reforms was never fully implemented.

Second, USAID/Dakar is not only still actively engaged in discussions, it has in fact been promoting successfully some of the reform issues included on the multidonor agenda, including some that lie outside the rice sub-sector. As noted above, relevant USAID/Dakar activities are the multi-year PL-480 Title III program, the new CBNRM project, and the jointly funded (USAID/Dakar and AFR/ONI) SONACOS privatization study.

Finally, non-project assistance provided at this time would complement and support the USAID interventions already in place at the local level to promote non-governmental organizations (NGOs) and local community organizations (the PVO/NGO Support project, the Kaolack Agricultural Enterprise Development project, CBNRM projects) and provide access to appropriate natural resource management technologies (NRBAR, the Southern Zone Water Management project and the CBNRM project). Other donors are also implementing supportive projects. These include the Irrigation IV project led by the World Bank and the EEC's integrated rural development project, both located in the Senegal River Valley. All these interventions, aimed directly at local populations, can

help mitigate initial negative impacts of rice and groundnut sector policy reforms on rural incomes. More important, after the RSA program reforms have been implemented, these projects likely will generate significantly greater returns than their designers had originally contemplated.

Some project assistance will accompany the non-project assistance of the RSA program. A combination of program and project assistance has proven successful in other sectoral policy reform activities. The project assistance will support technical assistance, training, commodities, and, above all, surveys and studies. USAID/Dakar will provide this project support to the Unité de Politique Agricole. This institution, housed in the Ministry of Agriculture of the GOS, will monitor the RSA program on behalf of the GOS. USAID/Dakar will, of course, manage the program on behalf of the US Government.

Project alternatives to non-project assistance have been explored and found lacking. There are several reasons. First, and most important, the GOS has invested enormous amounts of time and talent devising the reform package in the rice sub-sector. It has run and analyzed numerous simulations to better understand the impacts of the proposed reforms on various groups, and it has engaged in a complex and cumbersome process of building a consensus in support of these reforms throughout the entire government of Senegal. Second, the level of effort to reach agreement on the reforms in the rice sub-sector involved all the key donors in Senegal; the bilateral USAID/GOS discussions essentially ratified the agreements already reached among these donors as well as between the donors and the GOS. Third, and finally, the political context, as discussed above, is right. There has been a notable improvement in the attitude of the GOS favoring policy reform in the rice sub-sector, and indeed in the agriculture sector as a whole.

The commodity import alternative is also not appropriate. Such a program is well-suited to a country where a true foreign exchange constraint exists. This is not the case in Senegal. Indeed, the overvalued exchange rate combined with currency convertibility makes the relative value of imports far lower than it should be to promote optimal use of scarce resources.

F. Response to PAIP Approval Guidance and Project Changes

The PAIP for the Senegal Agriculture Sector Grant (now RSA PAIP) review was held in Washington April 9, 1991. USAID/Dakar has taken into account the guidance from AID/W in the PAIP Approval Cable (91 STATE 146036) when drafting the RSA PAAD. Since the PAIP was written, several components, including the title of the Program, have been modified due to action by the GOS and other donors, as well as revised assessments of RSA priorities by the Mission. The PAIP cable approves the proposed

design on the PAAD. It stipulates that the level of funding will not be decided until the PAAD is reviewed and that the PAAD will be reviewed in USAID/Washington.

In early fall, 1993, staff of USAID/Dakar met to discuss whether or not the PAIP, formally reviewed by USAID/Washington on April 9, 1991, was still valid. A formal meeting was subsequently held on November 24, 1993. At that meeting, USAID/Dakar (1) noted that the title of the program had changed from the Agriculture Sector Grant to the Rice Structural Adjustment program, (2) determined that the goal and purpose statements of the PAAD were not significantly different from those of the PAIP, and (3) determined that the reform measures described in the PAAD were both more focussed and materially strengthened compared to those of the PAIP but that otherwise the two documents were not significantly different from one another at the output level. Accordingly, the USAID/Dakar Mission Director determined that the PAIP remains a valid preliminary description of the program activities that are described in this PAAD, and that therefore the PAIP approval cable remains valid. This decision was transmitted to USAID/Washington by cable on November 25, 1993.

The PAIP review cable of May 4, 1991, raised several issues. These are discussed in turn below:

-- GOS commitment to reform. The principal difference between the end-of-program status proposed in the PAIP and that proposed in the PAAD is the role of the CPSP. In the PAIP, the CPSP would have become a purchasing agent for the state for broken rice imports. This would have left in place an official GOS institution with the capacity to distort the rice import markets. In the PAAD, the CPSP will be unable to intervene in rice markets except under declared emergency conditions. In particular, private sector importers will make their own deals without state involvement. The acceptance of this change by the GOS is evidence of its ample, if still developing, commitment to free market principles.

-- Expected effects of the reforms. USAID/Dakar and representatives from the Africa Bureau have spent a great deal of analytical effort on the issue impact (see Annex 9 for a detailed discussion of cross-elasticities between rice and coarse grains). The GOS and USAID/Dakar have run analytical models that identify the most likely price movements for rice. While new investments, increased productivity and crop switching all will occur at the farm level, the likely response will be small in the short run. As USAID/Dakar's analysis of DRCs suggest, the improvements in economic efficiency could be substantial. USAID/Dakar will track closely both the effects of the RSA program on farmers' incomes and on the DRCs at the farm level.

-- Local currency. USAID/Dakar has decided not to generate local currencies under the RSA program. Section IV.F, below, contains details and an explanation.

-- Appropriate funding level. USAID/Dakar proposes a $30 million funding level ($28 million in program support and $2 million in a complementary project). This is $7 million less than the level proposed in the PAIP. The $30 million level is wholly consistent with the magnitude of the $22 million in "savings" to the GOS in the first three years of the program, and with the likely reduction in the $25 million to $70 million of domestic resources that are misallocated annually by farmers who grow rice in the Senegal River Valley. The PAAD allocates the $28 million in program support in three tranches of $8 million, $10 million and $10 million respectively. Unlike in the PAIP, the proposed program in the PAAD is not front-loaded.

-- Program logframe. The RSA logframe has been revised.

-- Linkage between the RSA program and the PL-480 Title III program. These two programs fully support one another. In fact, the full implementation by the GOS of the agreement to privatize the importation of Title III rice was a key early signal of the GOS's commitment to reform the rice sub-sector.

-- Program impacts. USAID/Dakar has prepared an analysis of "winners" and "losers" of the proposed RSA program (Section IV.C., below).

-- Management/Assessment of the policy reform process. Section V describes in detail the management responsibilities under the RSA program. UPA, not ISRA, will be responsible for monitoring program implementation on behalf of the GOS. Although USAID/Dakar has worked with ISRA on policy analysis issues in the past, UPA's mandate in this area is clear and makes UPA the appropriate unit to follow the RSA program. USAID/Dakar continues to work with ISRA under the Natural Resources-Based Agricultural Research project.

-- Country Contribution Requirement, Section 110 waiver. USAID/Dakar is requesting a Section 110 waiver of host country contributions to the RSA program.

-- Bumpers/Lautenberg. The Bumpers and Lautenberg amendments do not apply (see Statutory Checklist).

IV. Program Description

The Senegal Rice Structural Adjustment program will provide tranched non-project (sectoral) assistance to the GOS upon the accomplishment of certain specified policy and institutional reforms in the rice sub-sector. The RSA program has its origins in, and is still linked to, the GOS-donor PASA discussions.

In the past few months, the new Government of Senegal announced a series of stringent fiscal measures designed to redress the deteriorating budgetary situation, approved the terms of reference for the second phase of the SONACOS privatization study, approved the privatization contract covering PL-480 rice (some auction sales already have taken place), began to implement the divestiture of SAED's rice mills, and began to negotiate the terms of reference for the study on the reform of CPSP. The last three items relate closely to important parts of this Rice Structural Adjustment program. The commitment of the GOS is strong. The GOS is negotiating in good faith and is demonstrating by its actions its seriousness of purpose.

A. Rice Policies

Through the RSA program, the GOS will apply the general principles that have always informed the PASA discussions to the rice sub-sector. In particular, with the disbursement of the third tranche of the RSA program, the GOS: (1) will have completely eliminated all administered pricing in the rice sub-sector; (2) will have replaced a fixed paddy price with a reference (or indicative) paddy price, (3) will have abolished all rice transport cost subsidies assuring that consumers pay the full cost of differential transport costs, (4) will have eliminated fixed distributors' margins throughout the country, and (5) will have abolished the fixed wholesale price for broken rice in Dakar (the lynchpin of the current administered pricing system). With the exception of a duty (now a perequation) to be paid on imported rice, the GOS will no longer be able to manipulate directly any prices in the rice markets of Senegal.

Institutional reforms will be far-reaching as well. With the disbursement of the third tranche of the proposed RSA program, the GOS will have completely reformed the key institutions of the rice sub-sector. The GOS will have privatized or closed all state-owned rice mills, will have eliminated SAED's activities in paddy marketing and processing, and will have eliminated CPSP's activities in local wholesale rice marketing. The CPSP, which at the present time is heavily involved in purchasing, importing, storing and transporting rice, will be restructured. After having been restructured, the activities of the CPSP will be limited to monitoring the rice sub-sector, contracting with the private sector only for broken rice imports under emergency conditions only, and contracting

with the private sector for the management of security stocks of rice on behalf of the CPSP. The CPSP's price stabilization function probably will be transferred to the GOS Treasury.

The GOS and the donors (notably including USAID/Dakar) have discussed, at great length, a transitional phase during which subsidies now applied to rice processing (especially in the Senegal River Valley) are reduced. An abrupt elimination of all subsidies is not considered politically or institutionally feasible. Therefore, supported by the RSA program, the GOS will establish a phased reduction in subsidies now applied to large irrigated systems. In the meantime, donors and the GOS will encourage activities designed to improve productive efficiency and to increase diversification in response to rational price signals.

B. Program Goal and Purpose

The goal of the RSA program is to increase private sector incomes through the liberalization of agricultural markets. This goal is fully articulated as Strategic Objective Number 4 of USAID/Dakar's approved Country Program Strategic Plan. It is an avowedly long-term goal: that strategic plan paper states that, for USAID/Dakar, "... emphasis is placed on increasing income per capita in the long run."

The primary purpose of the RSA program is to increase the incomes of farmers who currently produce paddy rice for the internal Senegalese market through the liberalization of rice marketing and processing. The RSA program will accomplish this purpose by supporting the efforts of the GOS to implement two fundamental changes. First, administratively determined prices will be replaced with a price system that better reflects real economic costs. Second, inefficient parastatal enterprises will be replaced with efficient, competitive private enterprises.

The objective of further liberalizing the markets of the rice sub-sector is based on the finding that these markets are woefully inefficient. Economic actors in these inefficient markets respond to irrational administered price signals. The markets themselves are dominated by costly parastatal enterprises. A comparison of the effective rates of protection (a measure of the protection afforded producers by the imposition of high import tariff barriers) for millet and rice is instructive. The pricing and marketing of millet in Senegal are basically decontrolled; the pricing and marketing of rice are controlled by the state. Calculations performed just prior to the preparation of the Country Program Strategic Plan in 1991 indicated that millet received a modest amount of negative effective protection (minus 11-12 percent) in the important peanut basin, and only slight protection (two to seven percent) in other parts of Senegal. By comparison, the substitute for

millet in consumption (rice) received heavy protection (250-300 percent). While these estimates are a few years old, they probably are close to current actual values.

Production of millet is constrained by a revealed political preference for providing protection to rice. The CPSP monopoly on importing low grade, broken rice is a source of revenue for the Treasury through the perequation system. The CPSP is sometimes thought to be a source of political patronage and funds. Subsidized rice transport contracts and distribution (trade) systems, with their guaranteed margins, can also be highly profitable for the politically well-connected, which includes the marabout class. The high internal price for rice also helps protect domestic producers.

The RSA program combines policy and institutional reforms with projectized inputs (designed largely to monitor the effects of the RSA program in the rice sub-sector and to sustain policy initiatives) to establish the price incentive and institutional foundation upon which Senegal can build a more efficient rice production system. Rather than stimulate directly increases in incomes at the farm level, it will enable those Senegalese farmers who currently produce paddy to participate in a more efficient agricultural system than the one that exists today.

Specific policy actions are described in detail in Section VII.A, "Conditions Precedent," below.

C. Program Policy Framework and Program Logic

In financial terms, likely beneficiaries (or "winners") of the RSA program will include the private rice traders who will take over the distribution functions being abandoned by SAED and the CPSP, and the private rice processors who will take over the rice milling functions being abandoned by SAED (see Annex 7.b and Annex 9). However, the gains of these winners will be largely offset by the losses incurred by those who will lose their jobs at SAED and CPSP (some of the individual losers are also winners: some of the employees of SAED are privately purchasing a SAED mill).

There will be considerable gains in efficiency as well. On the processing side, SAED mills process rice at a cost of about FCFA 30 per kilogram of processed rice, whereas a "typical" private mill is expected to process rice at between 16 and 20 FCFA per kilogram (see Annex 9, page 24). This will affect the price of paddy rice paid to farmers (see next paragraph). There also will be substantial gains in efficiency on the distribution side as the CPSP gets out of that business.

Other financial beneficiaries include rice consumers and paddy producers. Removing the rice transport subsidy will likely

result, in the short run, in a small increase in the price of rice to consumers in most regions of Senegal. For the most part, these price increases are not expected to be associated with significant changes (see Annex 9, page 28). In the long run, as more efficient processing and marketing systems emerge, there may well be downward pressure on consumer prices. But there are a host of important variables, some controlled by the GOS, that influence the price of rice. Most important of these is the rice perequation, or import duty, which, when changed, can substantially affect the consumer price of rice. In short, it is unclear how the RSA program will affect the price of rice to consumers.

It is equally unclear how the RSA program will affect financially, in the short-run, the farmers of the Senegal River Valley who currently produce paddy for the Senegalese market. There will be two immediate, and to some degree counterbalancing, changes: (1) the guaranteed farm price of 85 FCFA/kg will be eliminated; and (2) the private sector will assume responsibility for marketing and processing. While there will be some negative effects stimulated by eliminating the guaranteed farm price, they should not be substantial because actual prices received are in the 65-75 FCFA/kg range (this is the range of official and local market prices weighted by shares marketed). The rice component of the program includes a cushion by supporting a declining processing subsidy to mills which demonstrate that they have paid at least a "reference" price of 75 FCFA/kg (the subsidy will decline from 25 FCFA/kg to 15 FCFA before being eliminated entirely with the release of the third tranche). This suggests some decline in prices received by farmers; however, the emerging private mills will be smaller and more broadly distributed geographically, so reduced assembly costs should absorb much of the difference at the farmgate. The spacing (and possibly re-spacing) of the mills will take some time, so a spatial equilibrium will not occur immediately. The private sector has already responded by actually creating an overcapacity situation, and by concentrating most of the new mills in the Delta region. Since it will now be legal for all traders and processors to market local rice, the relatively low local market prices will almost certainly increase. As a consequence of all these factors, USAID/Dakar believes that the average price received by farmers will probably decline by, at most, only a few FCFA/kilogram. Given the elimination of existing institutional inefficiencies, the weighted average farm-gate paddy price actually paid to farmers may actually increase slightly. In any event, the impact in the short-run is likely to be small.

In financial terms, the only unambiguous and substantial beneficiary is the state (Section I.1., below). The high subsidies now paid to SAED for collecting and milling rice in the Senegal River Valley will be dramatically reduced. The state will also be able to reduce its expenditures significantly when

the rice transport subsidy is removed. The analysis indicates that most of these funds have been used as payments for operational and distributional inefficiencies, rather than as direct transfers to either producers or consumers. Over the first three years of the program these "savings" alone would amount to over $22 million.

This does not include substantial second-round effects, such as more efficient public and private investments and increased returns on investments. Research has shown that the rate of return on investment is positively related to "appropriate" macroeconomic and sectoral policies, so the creation of a more rational rice price policy will help to improve economic growth in the Valley. The analysis does not attempt to estimate the actual change in return to investment, but, given the huge investments in irrigation systems in the Senegal River Valley, the potential gain from even a small increase in the returns on investments is very large.

But these financial benefits are small compared to the potential economic benefits of the RSA program (Section I.1., below). From the standpoint of economic efficiency, the resources used in producing rice given current technologies should be reallocated. At current world prices and given current technologies, between $25 and $70 million in domestic resources used in the Senegal River Valley are misallocated annually. A more rational policy system clearly can contribute substantially to sustainable economic growth.

It is well-established that farmers in Senegal are "rational" in the sense that they -- like farmers throughout the world -- act to increase their meager family incomes in response to the price signals and other incentives they face. But the mechanisms by which gains in economic efficiency translate into increases in the financial incomes of farm families may not be clear. This mechanism is even more difficult to understand when the average long-term (three to five years) price paid to farmers is unlikely to change much, if at all, in response to the policy reforms undertaken under the RSA program (short-term fluctuations and regional differences are anticipated). If the price of paddy at the farmgate does not change, what incentives will cause farmers to change their production patterns? How can their incomes rise if the prices they receive for their products do not change? Some examples may help.

Opportunity Costs For example, under the existing system, farmers are forced to wait for SAED to pay them for the rice they sell to SAED. Delays are costly. Many affected farmers are forced to pay usurious interest rates on consumer loans while they wait. Farmers are forced to follow a burdensome and intimidating paper trail in order to obtain the payments due them. Farmers devote time and energy to establishing personal

relations with SAED official to assure that they will be paid. These are all sources of inefficiency. They are wasteful, unproductive activities that are a very large part of the existing system. They would be sharply reduced by a competitively organized private processing system.

Institutional Changes. Under the existing system, SAED often acts as a monopolist paddy purchasing agent. A market-driven competitive system would eliminate inefficiencies derived from a monopolistic structure. Institutional changes will accompany this move to a market-driven system. For example, private institutions such as GIEs and other farmer organizations will flourish and gain strength and thereby successfully resolve problems of access and reliability to appropriately timed releases of water in suitable amounts. As a consequence, cropping intensity rates -- and incomes -- will rise; under the present system, multiple cropping is rare.

Technological Changes. Access to emerging, lower-cost technologies, notably including access to cheap hydroelectric power and to emerging natural resource management production technologies, will change the way that farmers allocate their resources. These are two prominent technological changes that both are on the horizon and certainly will induce farmers to reallocate their resources more efficiently. But if the current system, laced as it is with institutional rigidities and administered prices, continues to operate, farmers will face severely weakened inducements to reallocate their resources.

USAID/Dakar's extensive RSA program monitoring and evaluation plan includes provisions for studies and surveys that will track these, and other, mechanisms that translate the effects of improvements in economic efficiency into increases in the incomes of farm families. As indicated in the Program Logical Framework (Annex 2), USAID/Dakar anticipates an increase in the incomes of farmers marketing paddy at the start of this program to increase by ten percent by the PACD of the RSA program.

The RSA program will help establish the foundation for a more efficient rice sub-sector, and will help to encourage longer-term adjustments. However, severe organizational and production related constraints will remain. Many of these constraints will need to be addressed through traditional donor-supported agricultural project activities. The reorganization and reorientation of SAED and CPSP are essential accompanying measures, and both are addressed by this program. In summary, the new policy creates the prospects for economic growth in the rice sub-sector; in many cases, the realization of those gains likely will be linked to discrete interventions that address particular constraints at the local level.

D. Relevance to USAID Strategy

USAID/Dakar has adopted, at the Country Program Strategic Plan level, the overall goal of increasing private sector incomes derived from the sustainable exploitation of natural resources. Strategic Objectives Numbers 2, 3 and 4 relate to the development of agriculture in Senegal. They are, respectively: Strategic Objective Number 2: increased crop productivity in zones of reliable rainfall; Strategic Objective Number 3: increased value of tree production; and Strategic Objective Number 4: increased liberalization of markets.

At the purpose level, the outputs of the RSA program reflect closely the terms of USAID/Senegal's Strategic Objective Number 4. That strategic objective is to encourage further liberalization of the market for agricultural and natural resources-based products. The two indicators identified under this strategic objective are (1) reduce marketing margins to their competitive levels, and (2) increase the share of agricultural product marketed through the private sector. USAID/Dakar will make substantial progress toward the achievement of these indicators as the RSA program is implemented.

The two targets defined under Strategic Objective Number 4 are: increased private sector activity and decreased government regulation. As shown in USAID/Dakar's recently submitted FY 1993 Assessment of Program Impact, the first five (of eight) indicators identified under Target 4.2 (Decrease Government Regulation) are specific conditionalities of the RSA program. USAID/Dakar also expects that the targets listed under the two indicators identified under Target 4.1 (Increase Private Sector Activities) will be achieved during the implementation of the RSA program.

By supporting the efforts of the GOS to abandon its administratively determined rice pricing system, and to markedly reduce the influence of its highly inefficient rice marketing and processing parastatals, the RSA program will help raise substantially the participation of private enterprises in the rice sub-sector and will help substantially reduce the role of government in that sub-sector.

E. The RSA Complementary Project

The RSA complementary project will support the implementation of the RSA program. The objective of the RSA complementary project is to enable the Unité de Politique Agricole (UPA) of the Ministry of Agriculture to sustain and monitor policy reforms in the rice sub-sector.

1. The Unité de Politique Agricole

The UPA will have the sole responsibility within the GOS for:

-- in the rice sub-sector, identifying policy problems, designing targeted policy research programs, managing contracted policy research activities, analyzing policy research results, drawing policy implications, and preparing policy options papers; and

-- coordinating, monitoring the progress of, and evaluating the impact of the RSA program.

Throughout the 1970s and well into the 1980s, Senegalese planning and policy formulation at the sectoral level, just as at the level of the economy as a whole, was the preserve of the Office of the President, the Ministry of Finance, and the (then) Ministry of Planning and Cooperation. Line technical ministries such as the Ministry of Agriculture were hardly involved in designing the policies they subsequently were responsible for implementing.

In addition, the pervasive influence of expatriate technical assistance staff (largely but not exclusively French) at all levels of policy planning was not always positive. Interventions by expatriate technical assistants helped the GOS avoid some major misallocations of resources. They strengthened some project activities. But they also inhibited the development of a strong Senegalese policy planning capacity in the line technical ministries.

This awkward situation was further exacerbated by the insistence on the part of many major donors that their development assistance activities be implemented through an array of internal project management units, parastatal agencies, ad hoc credit institutions, and regional development authorities. The donors largely shared the perception that the existing line technical ministries were fundamentally incompetent to manage Senegalese development and, therefore, should be bypassed. The result was a self-fulfilling prophecy: whatever otherwise the competence of the ministries might have been, they did not develop any capacity for policy planning.

The absence of an operationally oriented policy planning capacity was a factor (there were many other factors) that led the GOS to adopt, implicitly, a tactic that proved to be extremely frustrating to donors and inimicable to development. The GOS would agree in principle to difficult policy reforms at the level of the President and the Ministries of Finance and Planning but would then delay effective implementation until the donors themselves dropped key policy reform provisions, accepted compromises, or decided that the imperatives of "moving money" overcame strict adherence to the agreed policy reform agenda.

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This response by the GOS stimulated considerable and still-growing interest, on the part of donors, in improving their understanding of the political processes that so heavily inform the design of policy reform programs. Donors began to recognize the importance of better understanding the authority generated by a political system to execute policy reform programs, that is, the political feasibility of implementing, as well as designing, reform programs. Donors also began to recognize explicitly that the issues went far beyond measures of technical competence and organizational capacity of line ministries to design policy reform programs. However, that seemed a good place to start.

Accordingly, in the late 1980s, the World Bank and some other major donors began to favor the notion of decentralized policy planning. They argued that implementing ministries should have a substantial voice in the formulation of the policies they would be charged with implementing. The agriculture sector took pride of place. In 1989 and 1990 the GOS first released the DPDA and its associated Action Plan. The donors had not expected to be given a list of practically unrelated project proposals. They viewed the Plan of Action in particular as concrete evidence that the GOS lacked credible technical expertise in formulating an agricultural policy reform program that would be vigorously implemented given existing political structures.

The UPA was created by the GOS with World Bank financing in May 1990 as a support unit reporting to the then-Minister of Rural Development and Hydraulics (MRDH). The Ministry recently was split into the Ministries of Environment and the Ministry of Agriculture; UPA now reports to the Minister of Agriculture. The World Bank provided $1.4 million over four years. The purpose of the project was to create the UPA with a mandate to formulate rural development policies, perform appraisals of investment proposals prepared in the technical departments of the ministry, and monitor the performance of the activities implemented by the ministry. The World Bank financed the unit's main operating costs including (1) consultancy services from universities or other institutions, (2) training, (3) equipment (including vehicles, computers and office equipment, (4) maintenance services, (5) travel allowances, and (6) the director's salary. UPA was to be a small but powerful policy analysis unit.

The UPA was also given specific responsibility for developing and monitoring the PASA. It was, and is today, the focal point for the staff work and technical level contact with the donors on the PASA. It managed, and still manages, the process by which the GOS -- including the technical line Ministry of Agriculture -- develops a sense of "ownership" of the PASA policy reform program.

Under the technical direction of the UPA, the GOS and the donors began an intensive dialogue to develop a series of sub-

sector specific action plans (the UPA also provided the technical direction for the more recent bilateral discussions on the Rice Structural Adjustment program with USAID/Dakar by, e.g., running simulations on the impact of the proposed policy reform measures). The UPA provided the technical direction for the preparation of various policy statements issued by the GOS.

With the full technical support of the UPA, the GOS created several joint GOS-donor committees:

-- a general policy review committee chaired by the Minister of Finance and consisting of the Minister of Agriculture, a representative from the Presidency, a representative from the Ministry of Finance's Commisariat à la Reforme du Secteur Parapublic (the privatization commission), and the directors of several parastatals, including SAED and CPSP; a representative from the BCEAO (the central bank) often attended;

-- three technical committees -- one for the rice sub-sector, one for the groundnuts sub-sector, and one for the cotton sub-sector;

-- one special technical committee to discuss natural resource and land tenure issues.

Each technical committee reported to the Minister of Agriculture and was composed of staff from UPA, the Ministry of Finance and relevant parastatals; each technical committee also contained at least two, and often three, donor representatives. The committees were charged with developing policy proposals along with an implementation plan. The proposals were discussed within the GOS, within the donor group, and jointly with the policy review committee.

The experience gained from the dialogue demonstrates that the UPA has a valuable function to perform within the Ministry of Agriculture. The experience also demonstrates that UPA staff members continue to need training, and commodity and technical assistance support, to properly perform their complex jobs in the Ministry of Agriculture. The UPA mandate makes it the logical site for monitoring specific policy reform actions anticipated under the Rice Structural Adjustment program.

The assistance provided by the RSA complementary project will improve UPA's existing abilities, in the rice sub-sector, to formulate policy options and to prepare policy options papers for consideration by decisionmakers, and to monitor the implementation of policy reforms. The assistance provided by the complementary project also will finance joint UPA-USAID/Dakar efforts to monitor the impact of the RSG program on farm incomes at the household level, to track changes in domestic resource

costs for paddy producers in the Senegal River Valley, and to conduct related ad hoc studies.

Specifically, the project component will assist the UPA to identify policy problems in the rice sub-sector, prepare scopes of work for targeted research, obtain (through competitive contracting procedures) the services of competent local research institutions, manage field research activities and occasionally to conduct small research studies, analyze research results and draw policy implications from that analysis, to disseminate and stimulate open debate on those policy implications, and prepare policy options papers for consideration by policymakers. Project assistance will also support UPA monitoring and evaluation activities, specifically to monitor the progress of policy reform actions, verify the implementation of the policy reform process, and monitor the private sector response to emerging market opportunities. It also will support monitoring the impact of the RSA program on farm incomes at the household level (focussing on the price of paddy for producers and on the cost of rice for consumers), to track the changes in the domestic resource costs (DRCs) of paddy producers in the Senegal River Valley. Regarding the potentially adverse impact of the RSA Program on vulnerable groups, funds have been set aside specifically to track the potential negative effects on households headed by women, on changing workload patterns affecting women, and on smallholders. (For details see Section I(1) below on "Anticipated Program Impact".) The Program Agreement will include a covenant whereby the Mission and the GOS will design and implement measures to mitigate undesirable consequences as necessary. Additional ad hoc studies will be conducted should other affected groups surface during implementation. Finally, the project will prepare an environmental monitoring, evaluation and mitigation plan to overcome any undesirable environmental consequences of the program.

With support from the RSA program, UPA will be better able (1) to collaborate with various agricultural and environmental research institutions, universities, private consulting firms and other research organizations in Senegal; (2) to undertake field studies to verify agricultural data generated by, e.g., field-based extension services; (3) to develop survey and computer skills needed to analyze research results; (4) to strengthen its ability to analyze research results; and (5) to strengthen its ability to prepare, disseminate and present policy option papers for policymakers.

2. Description and Costing of Project Elements

The RSA program will provide, to UPA, "one-time" commodity support consisting of vehicles, computer equipment, office furniture, office equipment and office supplies. Much of the commodity support currently available to the UPA is old or

damaged (for example, the poor quality of electrical services has damaged many of the original computers provided by the World Bank); the RSA program will install protective systems to mitigate against these kinds of problems. The program also will support office renovations needed to bring the existing workspace up to a reasonable standard.

UPA staff consists of a director, 12 technical professionals, seven professional support staff (a statician, an accountant, a librarian, a personnel manager, an office manager and two administrative assistance), and a complement of secretaries, drivers, clerks and messengers. While the staff are relatively well trained (most of the professional staff have master's degrees), additional training is needed to improve their policy formulating skills. The RSA complementary project will support short-term training opportunities, workshops, and seminars (see Table 4). The RSA complementary project will not support long-term training. The US/Third Country training will be directly funded by USAID/Dakar. The technical assistance buy-in will fund the in-country training activities.

Table 4: Training Plan

Item	Numbers by Fiscal Year				
	1994	1995	1996	1997	1998
In-country Workshops (15 @ $3,000)	1	4	4	4	2
In-country Seminars (10 @ $4,000)	1	2	3	3	1
US/Third Country Trainees (20 @ $5,000)	5	5	5	5	0

The RSA complementary project will provide intermittent technical assistance services, based in the United States, to the UPA. USAID/Dakar will likely obtain these technical assistance services through a buy-in to a USAID/Washington contract. USAID/Dakar will develop a detailed scope of work after the RSA program has been approved and will solicit expressions of interest from both the Implementing Policy Change project and the Agriculture Policy Analysis Project-III. Either of these projects could provide the specific short-term technical assistance and training that would meet UPA's needs.

In general terms, the scope of work would call for technical assistance services to help UPA identify issues and propose policy solutions to problems relating to rice processing and marketing in the context of the liberalization of the rice sub-sector. The technical assistance services will help UPA fully articulate a comprehensive training program that can be supported under the RSA complementary project, and will include all arrangements for all in-country training activities (the workshops and seminars). The technical assistance services also will help UPA develop improved analytical techniques, develop

annual work plans, improve technical skills, assure that policy impacts are accurately assessed.

Specifically, the scope of work will call upon the contractor to:

-- help UPA identify policy problems, and monitor and evaluate policies designed to overcome those problems, by developing an array of comparative analytical (including statistical) techniques;

-- develop a training program for UPA professional staff in policy analysis and policy implementation, and in monitoring policy reform actions;

-- help UPA develop annual work plans and strengthen the abilities of UPA staff to prepare policy options papers, so that policymakers receive appropriate information in the right form at the right time;

-- help UPA develop an accessible technical data base and the capacity to disseminate information from that data base in a useful manner; and

-- provide UPA staff with the tools required to identify and assess policy options, identify policy program indicators, develop detailed policy reform programs, and analyze their effects on various interest groups.

These will be indirect management services. The RSA complementary project will not directly support particular research activities that are sponsored by UPA through individual sub-contracts or that are conducted by UPA staff members.

With the assistance of the commodities, intermittent technical assistance services, and training described above, UPA will use the financial and other resources provided by the GOS to verify the implementation of the policy reforms articulated in the RSA program. With the technical cooperation of USAID/Dakar, UPA will prepare field-based studies that verify the implementation of the policy actions taken by the GOS under the RSA program.

In addition, UPA and USAID/Dakar will collaborate on (e.g., will jointly prepare scopes of work for) a set of farm household income surveys, domestic resource cost studies, and several ad hoc studies (e.g., to monitor and evaluate the response of private traders) to the market opportunities that emerge as parastatal institutions withdraw from the rice sub-sector. These activities will be directly funded by USAID/Dakar.

A series of small surveys, based on sampling frames derived

from, for example, the Enquête sur les Priorités, undertaken on a periodic (e.g., once every 6 months) basis, should provide good information on the impact of the RSA program on incomes at the farm household level. These surveys, to be conducted by local firms, will illuminate the effects of changing prices of paddy (in production) and of changing costs of rice (in consumption) on overall changes in income, real and financial, at the farm household level. With the recent completion of the International Food Policy Research Institute (IFPRI) study of the greater groundnut basin and the anticipated (December 1993) completion of the Institute for Development Anthropology (IDA) study of the Senegal River Valley area, and with the publication of the results of the Enquete sur les Priorites, USAID/Dakar has access to a good baseline data base. Additional similar very expensive research efforts are not anticipated.

USAID/Dakar and UPA will also track changes in the domestic resource costs of a statistically significant sample of current paddy producers in the Senegal River Valley area. Since the RSA program anticipates a sharp reallocation of resources, over time, in response to changing relative prices and increasingly efficient processing and distribution institutions, the program must monitor changes in the DRCs. The methodology is well-known. A series of three studies implemented once every two years by a US firm should enable the UPA and USAID/Dakar to track adequately changes in the DRCs. The complementary project also will support a few ad hoc studies on relevant topics that may be deemed important to the RSA program.

Finally, funds set aside under the complementary project will be used directly by USAID/Dakar to conduct necessary audits and an external evaluation, scheduled for the end of the program. UPA and USAID staff will participate fully in this evaluation.

An indicative budget is provided in Table 5, below.

F. Proposed Financial Management Arrangements

Discussions on dollar disbursements, local currency generations and project financial arrangements are presented below.

1. Dollar Disbursement Arrangements

USAID financing for the RSA Program totals $30,000,000, of which $28,000,000 will be disbursed as non-project sector assistance. This assistance will be provided in tranches as specific policy and institutional reform conditions are met. Assistance will be provided on a cash disbursement basis.

Table 5: Indicative Budget, RSA Program, Complementary Project

(CFAF 280 = $1.00)

Items	Number	Unit Cost '000 FCFA	Total Cost '000 FCFA	Total Cost US $
1.1 Office Renovations			21,000	75,000
1.2 Office Furniture			10,360	37,000
Staff Desks	10	168	1,680	6,000
Secretarial Desks	5	224	1,120	4,000
Desk Chairs	15	112	1,680	6,000
Conference Chairs	20	28	560	2,000
Conference Table	1	1,120	1,120	4,000
Bookshelves	8	52.5	420	1,500
Filing Cabinets	10	98	980	3,500
Storage Shelves	10	84	840	3,000
Computer Tables	20	98	1,960	7,000
1.3 Computer equipment			37,807	135,025
Desktop Computers	15	1,050	15,750	56,250
Portable Computers	5	850	4,250	15,180
Printers	5	530	2,650	9,465
Laser Printers	2	1,200	2,400	8,570
Uninterruptable Power Supply Units	15	430	6,450	23,035
Installation @ 10% of above	10%		3,150	11,250
Expendable Supplies			3,157	11,275
1.4 Office equipment and supplies			26,348	94,090
Binding Machines	2	250	500	1,790
Photocopiers (Canon 5060)	2	7,655	15,310	54,680
Electric Typewriters	4	1,405	5,620	20,060
Slide Projector	1	1,760	1,760	6,285

Expendable Supplies			3,158	11,275
1.5 Vehicles			40,845	145,885
4-Wheel Drive Diesel	2	10,480	20,960	74,860
Equal to 405 Break Diesel	3	6,540	19,620	70,075
Motorbike	1	265	265	950
1.0 Total Commodities			**136,360**	**487,000**
2.1 Workshops (buy-in)	15	840	12,600	45,000
2.2 Seminars (buy-in)	10	1,120	11,200	40,000
2.3 Short Term Training			28,000	100,000
2.0 Total Training			**51,800**	**185,000**
3.0 Technical Assistance (buy-in)			**98,000**	**350,000**
4.1 Farm Household Income Surveys	8	11,200	89,600	320,000
4.2 Domestic Resource Cost Studies	3	28,000	84,000	300,000
4.3 Ad-hoc studies			49,000	175,000
4.0 Total Monitoring Activities			**222,600**	**795,000**
5.0 Audits/Evaluations			**26,600**	**95,000**
6.0 Contingency			**24,640**	**88,000**
Grand Total			**560,000**	**2,000,000**

a. Cash Disbursement and Commodity Import Program (CIP) Considerations.

Prior to recommending a cash disbursement modality, the alternative of CIP funding was explored. The cash disbursement mechanism was selected for the following reasons:

First, since there is ready access to foreign exchange in Senegal through the West African Central Bank (BCEAO), the added cost of CIP management is not warranted.

Second, the fact that disbursements will be made to the Central Bank of a Monetary Union governed by a strict charter and linked to the French Treasury gives a high degree of confidence in the accounting and control systems which will govern the use of the funds and lessens the likelihood that disbursements would be inappropriately used.

Third, CIPs are slower disbursing programs. Furthermore, CIPs are well-suited to a country where a true foreign exchange constraint exists. This is not the case in Senegal. Indeed, the overvalued exchange rate combined with currency convertibility makes the relative value of imports far lower than it should be to promote optimal use of scarce resources.

b. Section 537(b)(1) Exemption

Section 537(b)(1) of the FY 1994 Foreign Operations, Export Financing, and Related Programs Appropriations Act requires that U.S. assistance dollars provided as non-project sector assistance be deposited into a separate account and that the uses of those dollars be specified and agreed upon with the grantee government. Section 537(b)(4) of the same Act allows for an exemption from this requirement for non-project sector assistance through the Congressional notification process. Such an exemption is being requested for this program.

Senegal is a member of the West African Monetary Union (WAMU) which itself is part of the Franc Zone. A key provision of the Franc Zone is that the value of the local currency, in Senegal's case the Franc de la Communauté Financière Africaine (FCFA), is a convertible currency, fixed against the French franc and fully backed by the French Treasury. As a member of this Union, Senegal has turned over management of its monetary policy to the Central Bank of West African States (BCEAO). In the case of foreign exchange, the reserves of all WAMU members are pooled in the BCEAO and are available on demand for settlement of foreign exchange claims by any member. Thus, Senegal does not hold any foreign exchange in its own name. The BCEAO manages the foreign exchange accounts of the WAMU member countries. When foreign exchange destined to a given country is received by the BCEAO it is converted into CFA and credited to the individual country's account. As a result it is impossible to track dollars beyond their initial deposit with the BCEAO.

c. Effecting the Dollar Disbursements

Upon satisfaction of the Conditions Precedent to Disbursement for each tranche of non-project sector assistance funds, USAID/Dakar will receive from the GOS a Financing Request executed in accordance with USAID Handbook 4. That Financing Request will identify the bank, the account number, and the holder of the account into which USAID funds will be disbursed.

It is expected that the holder of the account will be the Central Bank of the West African States (BCEAO) and the bank account will be held in the Federal Reserve Bank of New York.

USAID/Dakar has carefully examined the proposed disbursement arrangements with the Ministry of Finance and the BCEAO and is convinced that they are both administratively and financially sound and appropriate given the objectives of the disbursements and the limitations imposed by Senegal's membership in the WAMU. Given the proposed disbursement arrangements through the Federal Reserve Bank in New York, interest will not be earned on the funds for the short period of time they are held. While it is not within the cash management responsibility of USAID to account for the proceeds of the dollar disbursements given the exemption to Section 537(b)(1) separate account legislation of the FY 1994 Appropriations Act, USAID/Senegal has explored the issue of how funds will be ultimately received by the GOS as part of its design responsibility and finds the arrangements to be satisfactory. Those arrangements are identical to the arrangements successfully used in disbursing recent tranches of USAID/Senegal's AEPRP-II banking sector program.

2. Local Currency Generation

In accordance with the decision to exempt this program from the separate account requirement for the dollar disbursement, no uses for the USAID non-project sector assistance dollars will be specified. As such, and in accordance with the October 1992 Bureau for Africa Non-Project Sector Assistance under the DFA Guidance (AFR NPA Guidance), no generation of local currency will take place.

The AFR NPA Guidance states, on page 36, that "... in cases where A.I.D. proposes to make cash disbursements to monetary union member countries, it will seek an exemption from the dollar separate account requirements. However, in effecting the actual disbursement of funds, A.I.D. will insist that procedures are in place to ensure that funds are received by the central monetary authority in the name of the Grantee, thereby assuring the proper crediting of assistance proceeds." This exemption is sought through the normal Congressional Notification process.

One of the principal beneficiaries of the RSA program is the GOS itself. It could be argued that it might, of course, be helpful if the GOS were to allocate some of the additional funds saved as a consequence of adopting the policy reforms of the RSA program to the agriculture sector. This kind of fiscal issue, however, goes well beyond the limited scope of this program. A more appropriate forum is the on-going negotiations between the GOS, on the one hand, and the IMF and the IBRD on the other. These negotiations are deeply concerned with overall

fiscal, institutional, and labor policy reforms; issues include the size as well as the nature of the GOS itself. Absent a firm agreement on these broader issues, and given the fungibility of fiscal resources, it makes no sense for USAID/Dakar to try to insist that the GOS allocate more resources to the rice sub-sector. In fact, the whole point of the PASA is to support the GOS's stated objective of reducing -- not increasing -- its direct involvement in this sub-sector. Much of this involvement in the past has clearly been demonstrated as counterproductive.

3. Project Financial Arrangements

As shown on the Project Procurement Plan in Section V.B., below, all project inputs will be financed via USAID direct disbursement. USAID/Dakar's Controller has reviewed this plan and concurred in these arrangements. The Africa Bureau Controller will review these arrangements as part of his clearance on the PAAD/PP authorization.

G. Related Donor Assistance Activities

Many donors are involved in the agriculture sector in Senegal. Many of the activities supported by these donors affect, at least to some extent, the rice sub-sector. None are purely policy oriented with a focus on rice markets. During the last four years of PASA discussions, policy work on rice has been, from the donor perspective, the domain of USAID/Dakar. The reforms of the RSA program will affect all three (St. Louis, Ziguinchor and Kolda) of the rice-producing regions of Senegal. Those reforms will, in effect, render more productive the specific project interventions supported by USAID/Dakar and the other donors.

In St. Louis (essentially the Senegal River Valley) rice production is irrigated and highly subsidized; it is characterized by fixed producer prices and heavy state involvement. In Ziguinchor and Kolda, rice production is based on traditional swamp and rainfed systems; there is little state intervention and marketed supplies are very limited.

The development of irrigated agriculture in the Senegal River Valley has opened that area to a wide range of potential crops and has introduced the possibility of multiple cropping, with the potential for three crop seasons per year. For a variety of reasons, cropping intensity is low. It seldom exceeds one. Water management in particular must be improved if multiple cropping is to become standard practice. Only then will the high fixed costs of developing irrigation systems be spread over a sufficiently large area of land to reduce water costs, as a share of total costs of production, to reasonable levels.

The environment in Ziguinchor and Kolda is such that a wide

variety of crops can be grown using traditional farming practices. But there are many constraints to efficiency in production. Distance from large markets is a problem, as is the physical separation (by The Gambia) from the rest of the country. But the key constraints to improved performance are the availability of labor and the suitability of land. Cultivating swamp rice is a very labor intensive activity. Each hectare of millet requires only 40 percent of the labor time needed to produce a hectare of swamp rice. Furthermore, farmers are abandoning their low-lying fields due to reduced rainfall levels and the consequent degradation of soils due to salt water intrusion.

In short, different physical constraints, especially those related to water, labor and land, are constraints to improved efficiency in rice production. USAID/Dakar, and other donors, support projects that address these constraints. This suggests strongly that rice price policy reform, taken together with institutional reforms, are not, by themselves, both necessary and sufficient to stimulate rapid transformation of the rice sub-sector. Technological packages also must be fashioned to address physical constraints. The reverse is equally true. Technological packages in the absence of thoroughgoing policy and institutional reforms are not likely to be successful.

1. Other USAID/Dakar Activities

The RSA program is a critical part of USAID/Dakar's overall strategy for agricultural development in Senegal. The policy and institutional reforms will set the stage for rapid growth in agricultural incomes. But non-policy constraints are being addressed at the project level. For example, USAID/Dakar's Natural Resources-Based Agricultural Research project is a nearly $20 million activity that began in 1991 and extends over seven years. The project will generate natural resources-based technologies designed to improve crop productivity for rice and three other cereals working through the Senegalese Institute for Agricultural Research (ISRA). The geographic focus of the research is on the more favorably endowed southern half of Senegal.

USAID/Dakar's Southern Zone Water Management project is an $18 million, eight-year project that began in 1988. Having gotten off to a slow start, in part due to the difficult security situation in the Ziguinchor region, the project now is proceeding at a reasonable pace. The project is designed to help farmers recover productive farmland lost to salt water intrusion, and to improve water control on non-salinized land.

The new, 1993 start, $25 million Community-Based Natural Resources Management project does not specifically address rice

problems. This project is the lynchpin in USAID/Dakar's natural resources management approach to agricultural development at the local level. Designed to enlist the support of the people at the local level, this project will demonstrate the benefits of adopting natural resources management techniques to local communities.

The $30 million, multi-year PL-480 Title III program strongly supports the RSA program. The Title III program works at the policy level, supporting the efforts of the GOS to completely turn over to the private sector the receipt, handling, transport, storage and distribution of PL-480 rice. In addition, it supports the efforts of the GOS to establish an improved policy environment for natural resources planning and management at the national level.

2. The IBRD

On the program side, the World Bank has been the lead donor coordinating PASA discussions on behalf of the donors. A description of the PASA discussions is provided in Section II.D.2.a, above. USAID/Dakar has kept the World Bank fully informed on all the discussions that have taken place bilaterally between the GOS and USAID/Dakar in the development of the RSA program.

The World Bank has put its program support to the GOS on hold. However, it continues to implement a number of projects that affect the rice sub-sector. The World Bank is supporting a four and one-half year, $36 million agricultural extension project (PNVA: the Projet National de Vulgarisation Agricole) designed to strengthen the links betwen producer organizations and the research and extension services of the GOS. But the PNVA project is more important to the RSA program than a cursory description would suggest. As part of the PNVA project, the World Bank wanted to improve the capacity for policy formulation and analysis within the Ministry of Agriculture. As a result, the GOS created, with World Bank funding, the Policy Analysis Unit, or UPA.

The World Bank funded UPA for four years as a permanent part of the Ministry of Agriculture (then the Ministry of Rural Development) at a level of $1.4 million. The project began in 1990. The GOS strengthened the analytical capacity of the UPA and developed the capacity of the Ministry of Agriculture to screen investment proposals and to monitor performance. The UPA was divided into three sections dealing respectively with (a) policy formulation, (b) project preparation and appraisal, and (3) performance monitoring.

The largest project in the agricultural sector in Senegal is funded by a consortium of donors led by the World Bank. French,

German and Arab support bring the total amount of funds devoted to the Irrigation IV project to about $66 million. Begun in 1988, the project concentrates its resources in the Senegal River Valley. Its purpose is (a) to improve the development and maintenance of small irrigated perimeters, (b) to decrease SAED's scope of activities so that private enterprises can take over the markets in question, (c) to explore the options for diversifying crops and irrigation methods, and (d) to strengthen SAED's capabilities in the areas of planning and management. To date, of particular relevance to the RSA program, this project has progressively reduced the amount of SAED's operating expenses devoted to production activities, has transferred management of 18 large perimeters (nearly 9,000 hectares) to private producer groups, and has trained SAED personnel and farmers to permit them to adapt to the new conditions that will prevail after SAED disengages from active involvement in the processing and distribution of rice. This project also supports the reorganization of SAED under its Fourth Letter of Mission (for details, see Annex 7.a.2).

3. Other Donors

France has provided support for three relevant projects. One is the Irrigation IV project just described that the French co-finance with the World Bank.

The French also provide bilateral technical and financial assistance to SAED, which will help complete the necessary reorganization of that institution. In particular, France provided CFAF 3 billion (approximately $11 million) over the 1988-1993 period (1) to help replenish SAED's liquidity and (2) to implement a restructuring/lay-off program designed to permit SAED to disengage from the processing of rice.

France also co-financed with the Abu Dhabi Fund an Irrigation Program in the Matam Department. This project, which lasted from 1985 to 1993, provided CFAF 5.5 billion (approximately $20 million) to rehabilitate 3,000 hectares of irrigated perimeters in the Department of Matam in the St. Louis region. One particularly relevant component of this project was designed to train farmers and SAED personnel to prepare for the new conditions that would result from the pending disengagement of SAED from the processing and distributing of rice.

The EEC provides ECU 48 million (approximately $60 million) to the Podor Development Support Program. This project, which began in 1990, is an integrated rural development project designed, inter alia, to rehabilitate irrigated perimeters, construct rural roads, and build markets.

H. Discussion of Assumptions

The key program design assumptions are outlined in the Logical Framework (Annex 2). At the goal level, the four primary assumptions are: (1) that there will be no drastic deterioration of the climate and other natural environmental factors (this assumption includes, for example, the absence of a severe locust invasion as well as the absence of a severe drought); (2) that there will be no dramatic change in the attitude adopted by the GOS toward the usefulness of relying on market-based allocation systems; (3) that agricultural prices do not shift substantially from their current levels in real terms (this assumption includes, for example, a steep rise in the international price of rice); and (4) that the GOS maintain its commitment to the full implementation of the agriculture sector policy reforms discussed under the umbrella of the PASA agreements.

At the purpose level, the important design assumptions are: (1) that the GOS continue to implement its policy of relying ever more heavily on the private sector in the rice sub-sector, and of continuing the process of state disengagement from all aspects of the importation, internal distribution and processing of rice; (2) that the private sector display its willingness and ability to invest in rice marketing (importation and internal distribution) and rice processing; and (3) that adequate financing be available to support those private sector firms that move into the vacuum created by the withdrawal of the marketing and processing parastatals.

USAID/Dakar is fully persuaded that the GOS is committed, at this time, to relying more heavily on market price allocation systems and on private sector institutions rather than on parastatals. In the Senegal River Valley, where the privatization process has been underway, if rather erratically, for several years, there is ample evidence that the private sector is fully capable of and is very interested in the rice processing business. Private sources of credit appear to be readily available. Recent, if still very limited, experience with the privatization of PL-480 Title III rice strongly suggests that private sector traders are willing and able to exploit the market opportunities that will be created as the CPSP withdraws from the business of importing and distributing rice.

The UPA and USAID/Dakar will engage in a fully participatory approach to implementing, and to monitoring, the RSA program. As is true of the implementation of all other policy reform programs, the implementation of the RSA program will involve overcoming unanticipated problems, dealing with newly emerging political forces, and responding to a changing macroeconomic context. Both UPA and USAID/Dakar believe that continued close collaboration at the technical level will help bring this program to a successful conclusion.

I. Monitoring and Evaluation Plan

1. Anticipated Program Impact

The RSA program will have an immediate financial as well as a long-term economic impact (details on the impact of the RSA program are found in Annex 9). As with most comprehensive sectoral policy reform programs, the impacts of the RSA program will change over time, as the private sector develops and as investments shift in response to more appropriate price signals.

The most immediate impact of the RSA program will be financial and will accrue to the GOS as financial savings: state subsidies for rice and rice processing in the Senegal River Valley will fall. Table 6 summarizes the expected immediate financial gains accruing to the fiscal accounts of the GOS from the RSA policy reforms in the rice sub-sector.

The subsidies now paid to SAED by the GOS will fall by about 1.1 billion FCFA the first year (assuming the RSA program is tranched once a year for three years), will be reduced by an additional 1.4 billion FCFA in the second year, and will be eliminated in the third year for an additional savings of 1.8 billion FCFA. The state will also reduce expenditures by 380 million CFAF in the first year, and by 766 million FCFA in each of the second and third years when the rice transport subsidy (perequation) is removed. Over the three years of the program these "savings" alone would amount to well over $22 million.

Table 6: Net Financial Impact of Rice Structural Adjustment Measures (data are in millions)

Item	YEAR 1	YEAR 2	YEAR 3	Total
Eliminate Transport subsidy	380	766	766	1,912
Reduced Sector Subsidy	1,100	1,400	1,800	4,300
Rice Sector Net FCFA	1,480	2,166	2,566	6,212
Dollars @280/FCFA	5.286	7.736	9.164	22.186

Source: Based on analysis in Annex 9.

These financial savings are more than just accounting benefits. They are real benefits: most of the expenditures being saved are payments for inefficiencies in the existing system of assembling, processing and distributing locally produced rice. There is little evidence to show that these subsidies have actually been transferred to individual farmers or to consumers.

The GOS might reasonably use these financial savings to support export commodities for which Senegal has some comparative advantage (given the existing monetary arrangements). It should be noted, however, that current rice pricing policy has more than adequately adjusted for the overvalued exchange rate by taxing rice imports at a rate much higher than that required to compensate for the overvaluation of the CFAF. A judgment of this nature obviously depends on just how "overvalued" the exchange rate really is thought to be. Analysts differ; the range is normally from 40% to 70%. According to recent IMF calculations, at a rate of about 45% the present pricing policy "breaks even," no longer providing net protection to producers of local rice.

While the financial savings are considerable, the potential economic benefits are massive. The economic analysis, based on the domestic resource cost of producing rice in the Senegal River Valley, shows that the present policy of encouraging domestic rice production (given existing technologies and institutions) results in a misallocation of between $25 and $70 million dollars per year. The RSA program will establish conditions necessary to encourage the reallocation of these resources. Administered prices will be eliminated; resource allocation decisions will made on the basis of prices that better reflect resource scarcity. Inefficient parastatals will be out of the business of marketing and processing paddy; a competitive private sector will be encouraged and supported.

Large subsidies to the irrigation system and other subsidies to rice production in the Senegal River Valley have transferred substantial amounts of resources to that area, but the cost to the economy is staggering. The domestic resource cost (DRC) of producing rice in the valley is about 3.6 (for details see Annex 9, pp. 28-31). A DRC of 3.6 means that, for each kilogram of rice produced in the Senegal River Valley, Senegal uses up domestic resources valued at 3.6 times the domestic resource equivalent of a kilogram of imported rice. Given an average CIF price for broken rice of FCFA 65 per kilogram in 1991-1992, and given that the Senegal River Valley officially marketed an average of 41.6 thousand metric tons of rice in that same period (using officially marketed production rather than total production yields a very conservative estimate of potential economic benefit; using total production yields the $70 million estimate noted in the preceeding paragraph), the value of rice replaced by domestic production averaged about CFAF 2.7 billion for officially marketed production (FCFA 65,000 x 41,600). At a DRC of 3.6, Senegal used domestic resources valued at CFAF 7,030.4 billion (2.7 billion x [3.6-1]) per year more than was necessary. At an exchange rate of CFAF 280 = $1.00, this suggests that the potential economic benefit from improved resource allocation in the Valley is about $25 million per year.

As stated in Section IV.C., the only unambiguous and

substantial financial beneficiary of the RSA program is the Government of Senegal. This is articulated in the Benefit-Cost Analysis (Annex 10) as "direct program benefits" and, by itself, yields an internal rate of return, in the conservatively estimated "base" case, of 33.3 percent. Excluding those farmers who currently produce paddy rice for the internal Senegalese market (this group will be discussed below), groups identified as possible beneficiaries are paddy processors (rice millers) and traders/transporters. It is unlikely that consumers will benefit directly from the reforms of the RSA program. For all these three groups (processors, traders and consumers), the financial impact is ambiguous (that is, for each group the impact could be positive or negative) and is certainly very small; in short, the impacts on these groups will be marginally positive or negative. However, the RSA program will monitor the effects of the policy reforms on these groups.

The potential economic benefits of the RSA program are substantial (see Annex 9). Consider, for example, the impact of a modest (five percent) improvement in the manner in which resources currently are being misallocated (in economic jargon, this amounts to a five percent improvement in the aggregate DRC). Such an improvement is equivalent to a program benefit of almost $4.5 million annually (see Annex 10). The large size of this program benefit underscores the importance of tracking closely changes in DRCs as paddy producers in the valley reallocate their resources to more efficient uses in response to market-based price signals and competitive market institutions.

USAID/Dakar expects the realization of the gains represented by improvements in the DRCs of farmers currently producing paddy rice to show up beginning in year three of the RSA program. USAID/Dakar also expects that this improvement in economic efficiency will be translated into increases in the incomes of these farmers. In short, incomes of farm families currently producing paddy rice in the Senegal River Valley will increase beginning in year four of the RSA program; this increase in incomes will be a direct consequence of the production responses of farmers to the changed incentives (e.g., improved infrastructure, better water control mechanisms, access to less expensive sources of energy, and access to credit at market rates) of a more efficiently organized rice sub-sector. The RSA program will track the incomes of these farmers throughout the five years of the program. As such, the RSA program will contribute to the alleviation of poverty in Senegal.

As indicated in Section II.C., above, poverty in Senegal is largely a rural phenomenon. Rural per capita incomes average about 30 percent of urban levels. The agriculture sector accounts for about 20 percent of GDP but about 60 percent of the population. This suggests that, in crude terms, a rural worker is about one-sixth as productive as his or her urban counterpart.

Paddy producers in the Senegal River Valley are part of the poor majority in Senegal. Most of the paddy farmers in the Senegal River Valley are located in the delta of the Senegal River. Data generated by the Enquête sur les Priorités has been re-aggregated at the level of this delta area. According to these data, paddy production overwhelmingly dominates other income-generating activities in the delta, accounting for about 40 percent of total household income. Average income per household in the delta is about CFAF 675,700 (approximately $2,413 at CFAF 280 = $1). With an average household size of just over 9 persons, the average per capita income in the delta is approximately $268. This is well below the national average ($796 in 1990) and well below the all urban national average ($588 in 1990). It is somewhat higher than the per capita income levels in the less well endowed peanut basin ($141 - $213 in 1990). The expected impact of improving incomes of paddy producers is detailed in Annex 9.

These average figures hide some important social characteristics that suggest that some vulnerable groups may be adversely affected by the RSA policy reforms. For example, family income derived from the production of paddy is nearly three times higher for households headed by men (CFAF 285,300) than for households headed by women (CFAF 108,600). There is no a priori reason to believe that the specific sectoral policy reforms defined in the RSA program will differentially affect farm households headed by women and those headed by men. However, the RSA program sets aside funds for tracking the impact of the reforms on households headed by women. The Mission and the GOS will also design and implement mitigating strategies in the event that these households are severely and adversely affected by the RSA program.

There is some evidence that the expansion of irrigated rice farming affects the work roles of women in farming activities. The Institute for Development Anthropology reports that gender roles in farming are changing (Senegal River Basin Monitoring Activity II). Traditionally male-defined tasks such as weeding, seeding and transplanting are increasingly, in irrigated rice cultivation, being performed by women (the authors found no evidence that children are similarly affected). As above, there is no a priori reason to believe that the specific sectoral policy reforms defined in the RSA program will lead to a situation in which a disproportionate burden of the workload will be borne by women. However, the RSA program sets aside funds for tracking the impact of the reforms on farm workload burden. The Mission and the GOS will also design and implement mitigating strategies in the event that women are severely and adversely affected by shifts in work loads attributed to RSA reforms.

The Institute for Development Anthropology also suggests, in the nature of an hypothesis rather than an empirically defended

conclusion, that area smallholders will be increasingly unable to make even the most modest levels of capital expenditure required by a paddy production system that is inherently capital intensive. If so, larger landholders may effectively squeeze out smallholders. The RSA program also sets aside funds for tracking the impact of the reforms on landholdings by size. The Mission and the GOS will also design and implement mitigating strategies in the event that smallholders are severely and adversely affected by the RSA program.

As part of the RSA program, the GOS will covenant that it agrees to participate, through the UPA, in the surveys and studies leading to the identification of these -- and other -- potential negative effects of the policy reforms of the RSA program on vulnerable groups, and to participate in designing and implementing the mitigating strategies that may be undertaken.

The immediate financial and economic impact of the RSA program on the other rice producing regions of Senegal (the regions of Ziguinchor and Kolda) will be minimal. The transport subsidy for these two politically sensitive regions will remain until the disbursement of the second tranche. The CPSP will maintain its presence there until that disbursement. There will be no immediate changes in prices or marketing arrangements. However, with the disbursement of the second tranche, all CPSP interventions in marketing will be eliminated. Local consumer prices for rice probably will increase. That price increase, however, will be modest. The principal reason is the proximity to the border with The Gambia and Guinea Bissau; consumers therefore generally have access to low cost rice. The recent controls on FCFA convertibility and, more important, on cross-border trade have increased transactions costs. However, trade in rice remains profitable. To the extent that the consumer price of rice in Ziguinchor and Kolda rises, the incentive for cross-border trade also will rise.

In the long term, the principal economic benefit of the RSA program will be the response of farmers to prices that better reflect scarcity values. The three regions with the highest transport subsidy (Ziguinchor, Kolda, and Tambacounda) also have the most diverse agriculture and the highest potential for increased cereal production, especially for sorghum and maize. With the elimination of the transport subsidy, the price of rice to consumers will rise somewhat. This will call forth some additional marketed output of rice in Kolda and Ziguinchor. In rural Tambacounda, where the people tend to consume imported rather than local rice, higher rice prices would cause consumers to substitute local cereals for imported rice. However, neither of these adjustments is expected to be large, because rice producers in Ziguinchor and Kolda face serious resource constraints. USAID's Southern Zone Water Management Project is designed to help relieve these constraints by improving water

management and reclaiming land made unproductive by salt intrusion. In addition, especially in Tambacounda, rice accounts for only a small part of the diet.

For all the reasons articulated above, USAID/Dakar has decided to focus on measuring the impact of the RSA program on the efficiency of farmers currently producing paddy for the commercial market. USAID/Dakar also will track the impact of the RSA program on farm household incomes.

2. Strategy: Monitoring and Assessing Impact

There are two fundamental problems inherent in any system designed to monitor and assess the impact of a comprehensive, although targeted, policy reform program. First is the problem of attribution. It is extremely difficult to measure precisely that share of the effects of a reform program that is solely due to the reforms themselves. Not only is there a host of intermediate causes and effects, there is in addition usually a large number of intervening factors. Policy reform programs typically "set the stage" for improved agricultural productivity. Without, for example, an accompanying stream of increasingly productive technological innovations, the impact of the reform program likely will be quite small (similarly, the innovation stream will likely have little impact, and likely will not flow for long, unless both an appropriate price structure and an efficient institutional framework are in place).

Second is the problem of time lags. As noted in the preceding section, the anticipated immediate effects of the RSA program are fiscal benefits accruing to the state. Assessments of the size and nature of fiscal benefits are well beyond the tightly focussed scope of this program and USAID/Dakar does not intend to engage the GOS in discussion of broad issues of fiscal policy. USAID/Dakar finds the long-term effects of the RSA program to be much more important. These effects involve most crucially the productive efficiency of farmers currently producing paddy for the market, and the incomes of farm families throughout Senegal. Time lags are unknown. It is not possible to state with certainty when the effects of the RSA program on incomes and on production costs will first be felt.

The GOS and USAID/Dakar will monitor the RSA program through the reporting system and review procedures described in Section V, below. On the GOS side, the organization system mirrors that earlier established in connection with the PASA discussions. The Ministry of Finance, as the ministry responsible for program coordination for the GOS, will certify compliance with the conditions precedent of the RSA program. The GOS Ministry of Agriculture will the the institution with primary responsibility for monitoring the program.

The monitoring plan consists of five parts. Well before the anticipated disbursement date, (1) the GOS (acting through its RSA Program Steering Committee) will meet with USAID/Dakar to discuss, and subsequently will issue a report on, exactly how it intends to fulfill all the requirements for disbursement of the forthcoming tranche of funds. (2) The Ministry of Finance will, in due course, issue a Disbursement Request certifying compliance with these requirements. (3) The Ministry of Agriculture will then prepare and issue a Field Verification Report verifying that the the policy reforms have been effectively implemented and that all requirements have been satisfied. (4) USAID/Dakar will prepare a Field Confirmation Report to confirm that disbursement is warranted. (5) Finally, UPA and USAID/Dakar will collaborate on a number of surveys and studies designed to monitor the long-term impact of the RSA program on farm production efficiency, farm household incomes, and the private sector business opportunities created in the rice processing and marketing fields.

V. Implementation Plan

The GOS will establish a reporting structure that will be able to implement and to monitor effectively the RSA program. The GOS reporting structure will be similar to the structure earlier established in connection with the PASA discussions.

A. Implementing the RSA Program

The Ministry of Finance, the official executing agency of the RSA program for the GOS, will be the ministry responsible for program coordination. In addition to its role as overall coordinator for the GOS, the Ministry of Finance will play the major role in the institutional reform of both the CPSP and, through the privatization commission, SAED. The Ministry of Finance will be responsible for compiling and transmitting to USAID/Dakar all official reports related to these activities. It will also supervise implementation of the reforms eliminating the rice transport subsidy and the reforms linked to the privatization of the importation and distribution of rice, acting through the CPSP and the GOS Interministerial Comité d'Agrément et de Suivi des Opérations Portant sur le Riz, as appropriate. Following established procedures of the GOS, the Ministry of Finance will collaborate closely with the Ministry of Agriculture.

The Ministry of Finance will nominate members of a Government of Senegal RSA Steering Committee for the program, which will meet with USAID representatives (led by the USAID/Dakar Mission Director) annually to conduct progress reviews. Details of the procedures for coordination to be followed by the two parties will be specified in the Grant Agreement. Normally the annual progress review meetings will

take place about three months before anticipated disbursements of program funds.

At each annual review, the RSA Steering Committee will review the progress of the GOS in implementing the reforms specified in the proposed RSA program and will discuss emerging problems. The RSA Steering Committee subsequently will issue an annual report (the "Annual Report of the RSA Steering Committee") describing in detail how the GOS intends to satisfy all the requirements for the next disbursement. Each of these three annual reports, one for each tranche, will be sent to USAID/Dakar over the signature of the Minister of Finance or his/her designee. Each of these three annual reports will describe in detail the policy reform actions that will be taken to satisfy the appropriate conditions precedent of the proposed RSA program. Each report will be prepared according to requirements mutually agreed upon, in writing, by both the GOS and USAID/Dakar in the annual meetings, referred to above, of the the RSA Steering Committee and representatives of USAID, led by the USAID/Dakar Mission Director.

The Ministry of Finance subsequently will prepare one "Disbursement Request" report for each tranche. Each report will request disbursement of funds, will certify compliance with the conditions precedent of the RSA program, and will describe in detail the requisite policy reform actions that have been taken. Each report will provide copies of the appropriate official documentation (laws, decrees, arretes, instructions or other documentation) in an annex. It is anticipated that the GOS will submit to USAID/Dakar three disbursement requests approximately one year apart beginning early in 1994.

The Ministry of Agriculture will be responsible for monitoring the implementation of the RSA program for the GOS. In addition to its role in monitoring the implementation of the RSA program, the Ministry of Agriculture will be responsible for implementing most of the price liberalization (excluding only the elimination of the rice transport subsidy) measures specified in the RSA program. The Ministry of Agriculture will be responsible for compiling and transmitting to USAID/Dakar all official reports related to these activities. The Ministry of Agriculture also will play a major role in the institutional reform of SAED.

The Ministry of Agriculture will send to USAID/Dakar, over the signature of the Minister of Agriculture or his/her designee, three "Field Verification Reports," one for each tranche, verifying on the basis of fully documented studies carried out in the field that the requisite policy reform actions have been effectively implemented (for details, see Section VI below). Using the financial and other resources provided by the GOS, but accessing the commodities, intermittent technical assistance services and training provided by the RSA complementary project

if and as needed, UPA will prepare these verification reports. In this way, UPA will gain the expertise and experience to conduct independent studies that verify the implementation of policy reforms. Each report will describe, in detail and as appropriate, (1) the immediate effects that the policy reform actions have had on SAED and on CPSP; (2) the immediate effects of the elimination of price controls (e.g., the elimination of the fixed farm price for paddy, the rice transport perequation, the administered trade margins on broken rice, and the administered wholesale price for broken rice in Dakar); and (3) the immediate effects of the other policy reform actions that were taken. Each Field Verification Report also will describe, in narrative form, the progress made to date toward the completion of the RSA program, and will identify the principal obstacles to rapid completion of that program. Each report will be prepared according to requirements mutually agreed upon, in writing, by both the Ministry of Agriculture and USAID/Dakar.

Following standard USAID practice, USAID/Dakar will establish an RSA Program Implementation Committee. The USAID/Dakar RSA Program Implementation Committee Chair, using in-house resources, will be responsible for preparing three "Field-based Confirmation Reports," one for each tranche, that will independently confirm that the requisite policy reforms action have been taken and effectively implemented. The Chair will, if warranted, recommend disbursement. The USAID/Dakar Mission Director will make the final determination as to whether or not the conditions precedent to disbursement for each tranche have been met. USAID/Dakar will then report compliance to USAID/Washington and request the transfer of funds.

In addition, UPA and USAID/Dakar will collaborate on (e.g., will jointly prepare scopes of work for) a set of farm income household surveys, domestic resource cost studies, and several ad hoc studies e.g., to monitor and evaluate the response of the private sector to the market opportunities that emerge as parastatal institutions withdraw from the rice sub-sector; to identify negative effects of the policy reforms on vulnerable groups; and to prepare an environmental monitoring, evaluation and mitigation plan. These surveys and studies are detailed below:

-- Farm Household Income Surveys: In collaboration with UPA, USAID/Dakar will enter into direct contracts with one or more Senegalese institutions to analyze the impact of the RSA program on farm incomes at the household level. An increase in the level of farm incomes at the household level is an important measure of the impact of the RSA program. A series of small surveys undertaken on a periodic basis should provide good information on the impact of the RSA program on farm household income levels. These surveys will illuminate the effects of changing prices of paddy (in

production) and of changing costs of rice (in consumption) on overall changes in income, real and financial, at the farm household level.

Specifically, USAID/Dakar will contract for a series of eight semi-annual reports on farm family income levels. These reports will be based on sample surveys, themselves based on a sampling frame derived from a comprehensive survey such as the Enquete sur les Priorités, that will track farm family income levels. These sample surveys will emphasize (but not exclusively so) changes in income derived from paddy production and from consumption of rice. The terms of the contract will specify confidence intervals for the survey results. Specific sites will be determined in consultation with the contractor. In addition to collecting statistically significant data, the contractor will analyze those data and, in the discussion section of the report, will present conclusions designed to inform the continuing policy dialogue process between USAID/Dakar and the GOS. The reports also will contain analytic sections based on interviews with key informants (including farm family members, local traders, community leaders, representatives from appropriate projects active in the sample areas, and relevant GOS, donor and NGO officials).

-- Domestic Resource Cost Studies: Also in collaboration with UPA, USAID/Dakar will enter into a direct contract with one or more US institutions to determine the impact of the RSA program on the domestic recource costs (DRCs) of a statistically significant sample of current paddy producers in the Senegal River Valley. The RSA program anticipates a substantial reallocation of resources, over time, in response to changing relative prices and increasingly efficient processing and distribution systems. These changes in DRCs must be monitored. The methodology is well-known. A series of studies undertaken once every two years should enable the GOS and USAID\Dakar to track adequately changes in the DRCs.

Specifically, USAID/Dakar will contract for a series of three reports designed to track changes in the domestic resource costs of a representative sample of farmers in the Senegal River Valley who currently produce paddy for the internal Senegalese market. The application of the well-known methodology to a statistically valid representative sample of farmers will require some preliminary work. During this preliminary phase, the contractor will identify that representative sample, determine the sources of relevant available information, and design the questionnaires. To assure that the reports provide comparable data, each annual report will be based on the same sampling frame (and possibly the same sample) and will

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use the same DRC data collection method. Each report will generate data and appropriate DRC estimates (by type of production system), will present and discuss findings, and will analyze those findings.

-- Ad Hoc Studies: the specific nature and content of these studies will be determined jointly by UPA and USAID/Dakar at formal meetings at the technical level that will take place every six months. An illustrative list of these ad hoc studies might include, inter alia:

(a) a series of studies that will monitor the response (the numbers of private mills, their cost structure and spatial distribution, the strength of the competitive forces at work in the rice processing industry, the validity of their accounts, etc.) of the private sector to the market opportunities that emerge as SAED withdraws from the rice sub-sector;

(b) a series of studies that (1) will monitor the response (the change in the number of traders, their marketing cost structure, the nature of the industry, etc.) of the private rice traders to the market opportunities that emerge as SAED and CPSP withdraw from from the rice sub-sector and (2) will identify the marketing constraints typically faced by those traders;

(c) an environmental monitoring, evaluation and mitigation plan that will provide for a process and the capacity within the GOS to identify, monitor and mitigate undesirable environmental consequences of the RSA program; and

(d) a study that will identify potential negative effects of the RSA program (e.g., on households headed by women, on changing workload patterns affecting women, and on smallholders) and design and implement mitigating strategies.

UPA and USAID/Dakar will be jointly responsible for evaluating the RSA program. Funds will be set aside from the RSA complementary project to support two evaluations. The first, a mid-term evaluation, will take place shortly after the disbursement of the second tranche. This evaluation will identify problems and recommend actions for solving those problems, and will determine whether or not the program is on course and can achieve its purpose. The mid-term evaluation will pay special attention to, and make recommendations on, the monitoring systems established under the companion project. UPA and USAID/Dakar staff will participate as members of the evaluation team. The final evaluation, an external evaluation that will take place after the disbursement of the third tranche, will assess the program as a whole, focussing on the lessons learned for both the GOS and USAID/Dakar.

The RSA program also includes provisions for several informal internal evaluations. Informal internal evaluations will take place during the annual meetings of the RSA Steering Committee and USAID/Dakar, as the participants review progress in implementing the RSA program. Other informal internal evaluations will take place during the twice-yearly joint UPA-USAID technical meetings to determine the nature and content of the studies to be prepared by UPA.

Funds also will be set aside from the RSA complementary project to support all required audits.

The complementary project will be managed by USAID/Dakar (see Section IV.F.1, above, for a description of the complementary project). USAID/Dakar will be responsible for the financial management of the resources disbursed under the complementary project. Disbursement of these funds will not be contingent on the satisfaction of conditionalities.

An illustrative implementation schedule follows:

Table 7: Illustrative Implementation Schedule

Item	Date
Action Memorandum, PAAD Authorization and Project Authorization Signed in AID/Washington	12/93
Grant Agreements Signed	01/94
Members of GOS ASG Steering Committee Appointed	01/94
First Semi-annual USAID/UPA Studies Agenda-Setting Exercise Completed	01/94
First Meeting between USAID and the ASG Steering Committee (to review requirements for and to review progress toward first tranche disbursement) Held	02/94
First Annual Report of the ASG Steering Committee Issued by the Ministry of Finance	02/94
First Disbursement Request Issued by the Ministry of Finance	03/94
First Verification Report Issued by the UPA	03/94
First Confirmation Report Issued by USAID/Dakar	04/94
Conditions Precedent to First Dollar Resource Transfer Met	05/94
First Annual Training Plan for UPA Staff Approved by USAID/Dakar	05/94
Contract for One-time Commodity Support to UPA Signed by USAID	06/94
Technical Assistance (for UPA) Buy-in/Contract Approved by USAID/Dakar	06/94
Second Semi-annual USAID/UPA Studies Agenda-Setting Exercise Completed	07/94

Contract for Domestic Resource Cost Studies (first of 3 Surveys to be Conducted Once Every Two Years Starting 02/95) Signed by USAID/Dakar	09/94
Contract for Farm Income Surveys (first of 8 semi-annual surveys to be conducted 02/95) Signed by USAID/Dakar	10/94
Third Semi-annual USAID/UPA Studies Agenda-Setting Exercise Completed	01/95
Second Meeting between USAID and the ASG Steering Committee (to review requirements for and to review progress toward first tranche disbursement) Held	02/95
Second Annual Report of the ASG Steering Committee Issued by the Ministry of Finance	02/95
Second Disbursement Request Issued by the Ministry of Finance	03/95
Second Verification Report Issued by the UPA	03/95
Second Confirmation Report Issued by USAID/Dakar	04/95
Conditions Precedent to Second Dollar Resource Transfer Met	05/95
Second Annual Training Plan for UPA Staff Approved by USAID/Dakar	05/95
Fourth Semi-annual USAID/UPA Studies Agenda-Setting Exercise Completed	07/95
Mid-term In-house Evaluation Completed	10/95
Fifth Semi-annual USAID/UPA Studies Agenda-Setting Exercise Completed	01/96
Third Meeting between USAID and the ASG Steering Committee (to review requirements for and to review progress toward first tranche disbursement) Held	02/96
Third Annual Report of the ASG Steering Committee Issued by the Ministry of Finance	02/96
Third Disbursement Request Issued by the Ministry of Finance	03/96
Third Verification Report Issued by the UPA	03/96
Third Confirmation Report Issued by USAID/Dakar	04/96
Conditions Precedent to Third Dollar Resource Transfer Met	05/96
Third Annual Training Plan for UPA Staff Approved by USAID/Dakar	05/96
Sixth Semi-annual USAID/UPA Studies Agenda-Setting Exercise Completed	07/96
Final External Evaluation Report Completed	12/96
Final Domestic Resource Cost Study Conducted	02/98
Final Farm Income Survey Conducted	08/98
End of Program	11/98

B. Financial Management

The RSA program is organized into two basic parts: the first

will be a dollar sector cash transfer grant (US $ 28 million); the second is a complementary project (US $ 2 million).

Dollar resources totaling $28 million will be approved and incrementally authorized to be made available to the Government of Senegal in the form of cash transfers. For each disbursement, USAID/Dakar will determine that conditions precedent have been met and fully documented through annual progress reviews. The dollar disbursements will be made to the BCEAO account in New York. The BCEAO will then buy the dollars at the prevailing CFAF/dollar exchange rate, will place the dollars in the Foreign Exchange Pool of the West African Monetary Union, and will transfer the CFAF to the GOS Treasury. As indicated above, no local currencies will be generated by the RSA program.

The anticipated disbursement schedule for non-project sector assistance is presented in Table 8, below.

To meet this disbursement schedule, USAID/Dakar will authorize and obligate NPA funds, on an incremental basis, as shown in Table 9, below.

The project provides commodities, training and technical assistance to improve UPA's existing abilities, in the rice sub-sector, to formulate policy options, to prepare policy papers, and to monitor the implementation of policy reforms. The project also provides funds for necessary audits and evaluations.

Table 8: NPA Disbursement Schedule

Item	Targets Est'd	Targets Met	Amount of Disbursement ($000)	Approximate Date of Disbursement
Tranche 1	2/94	4/94	8,000	5/94
Tranche 2	2/95	4/95	10,000	5/95
Tranche 3	2/96	4/96	10,000	5/96
Summary	Annually	Annually	28,000	Annually

Table 9: NPA Authorization and Obligation Schedule ('000)

	Authorization Date	Obligation Date	Obligation Amount
FY 1994	12/94	1/94	8,000
FY 1995	12/95	1/95	10,000

FY 1996	12/96	1/95	10,000

Support for UPA will be provided through direct USAID procurement. Technical assistance support, to include funding for in-country training activities, will be provided through a buy-in arrangement through a USAID/Washington project (see Section IV.E.2., above). No decision has yet been taken. Support through the buy-in will be US $ 435,000; this is the sum of the technical assistance line item and the in-country workshops and in-country seminars line items shown in Table 4, above.

Financial management of all other aspects of the complementary project (excluding the buy-in) will be provided directly by USAID/Dakar. USAID/Dakar anticipates that the eight farm household income surveys will by covered by four separate local fixed price contracts of approximately $80,000 each, and that the four domestic resource cost studies will be covered by a single $400,000 contract with a US Gray Amendment firm. The ad-hoc studies, totalling $75,000, will be local fixed price contracts. Support for the audits and evaluations will be provided through direct USAID contracts probably involving Indefinite Quantity Contract arrangements.

A detailed procurement plan follows:

Procurement Plan

I.	Purpose	:	Commodities for UPA
	Mode	:	Direct AID contracts with local suppliers, executed by USAID/SENEGAL/EXO
	Type	:	Commodities include office furniture, office equipment, office supplies, 5 vehicles, 1 motorbike and computer equipment.
	Competition:		Local competitive procurements based on FAR part 13 and 14, and AIDAR 706.302-70(b)(2), depending on specifications and estimated costs.
	Est. amount:		$412,000
	Target Date:		Assuming specifications are provided to EXO nlt January 1994, the target award date for these contracts will be end of March, 1994.
II.	Purpose	:	Office Renovations for UPA
	Mode	:	Architect & Engineering (A&E) and construction contracts executed by RCO/Dakar.
	Type	:	Renovations of the UPA office to accomodate GOS personnel and equipment expansion.
	Competition:		Local procurements based on AIDAR 706.302-70(b)(2) for awards of $250,000 or less by an

		overseas contracting authority.
	Est. Amount:	$75,000 (total for both A&E and constructions contracts)
	Target Date:	PIO/T will be executed and submitted by Feb. 1994: target award date for the A&E contract is 2 months thereafter. The construction contract will be awarded approximately two months after the receipt of the A&E's firms' specifications, accepted by USAID, and a PIO/T for the construction services.
III.	Purpose :	Technical Assistance for UPA
	Mode :	Buy-in to a centrally funded contract under the IPC or APAP III projects executed by FA/OP, AID/W
	Type :	To provide short-term technical assistance and in-country training to support UPA staff
	Competition:	N/A
	Est. Amount:	$435,000
	Target Date:	PIO/T will be submitted to FA/OP by Oct. 1994. Target award date for the buy-in amendment is Feb. 1995.
IV.	Purpose :	Farm Household Income Surveys
	Mode :	Direct AID fixed price contract executed by RCO/Dakar
	Type :	Contract with local firms to conduct 4 sets of 2 each (total 8) semi-annual farm household income surveys
	Competition:	Local procurement based on AIDAR 706.302-70(b)(2) for an award of $250,000 or less by an overseas contracting activity
	Est. amount:	$320,000 (4 @ $80,000)
	Target Date:	First PIO/T will be executed and submitted by July 1994: target award date is Oct. 1994. Second, third and fourth PIO/Ts will be executed annually thereafter
V.	Purpose :	Domestic Resource Cost Studies
	Mode :	Contract with an 8(a) or Gray Amendment firm using the 8(a) or the Small Disadvantaged Business set aside procedures executed by RCO/Dakar.
	Type :	Short-term technical assistance to complete 3 domestic resource cost studies.
	Competition:	Set-aside using FAR Part 19 (8(a) award) or AIDAR 706.302-71 (Small Disadvantaged Business award)
	Est. Amount:	$300,000
	Target Date:	PIO/T will be executed and submitted by Sept. 1994: target award date is Feb. 1995

VI.	Purpose :	Ad Hoc Studies
	Mode :	Direct AID fixed price purchase orders
	Type :	Short-term studies of varying topics
	Competition:	Small purchase procedures pursuant to FAR Part 13
	Est. Amount:	$175,000
	Target Date:	To Be Determined: Award will generally be two months after receipt of each executed PIO/T
VII.	Purpose :	Evaluations
	Mode :	Delivery orders against direct AID/W IQC contracts executed by FA/OP or 8(a)/Gray set-asides executed by RCO/Dakar
	Type :	Mid-term and end-of-program evaluations
	Competition:	If other than delivery orders, then possibly 8(a) or Gray Amendment set asides using FAR 19 or AIDAR 706.302-71 procedures
	Est. amount:	$95,000
	Target Date:	Award dates are end of Sept. 1995 and end of FY 1996. PIO/Ts must be executed and submitted to FA/OP or RCO/Dakar nlt three months prior to each target award date.

An illustrative obligation schedule follows (Table 10):

Table 10: Illustrative Obligation Schedule ($ '000)

Item	Fiscal Year 1995	1996	1997
Dollar Transfer	8,000	10,000	10,000
Companion Project	2,000		
Total	10,000	10,000	10,000

An illustrative disbursement schedule follows (Table 11):

Table 11: Illustrative Disbursement Schedule ($ '000)

Item	Fiscal Year 1994	1995	1996	1997	1998
Conditional Resource Transfer	8,000	10,000	10,000	0	0
Complementary Project					
Commodities	487	0	0	0	0
Training					
Short-term Training	25	25	25	25	0
In-country Workshops (Buy-in)	3	12	12	12	6

In-country Seminars (Buy-in)	4	8	12	12	4
Technical Assistance (Buy-in)	50	90	90	90	30
Surveys and Studies					
Income Surveys	0	80	80	80	80
DRC Studies (Gray Amendment)	0	100	0	100	100
Ad-hoc Studies	0	50	50	50	25
Audits and Evaluations	0	0	20	75	0
Contingency	23	17	17	17	14
Total RSA Program	8,592	10,382	10,306	461	259

A methods of implementation and financing table is presented in Table 12, below.

C. USAID/Dakar Program Coordination

Consistent with its responsibilities in managing all other non-project assistance activities, USAID/Dakar's Program Office will coordinate program implementation for USAID.

The USAID/Dakar Director will designate a program implementation committee following established procedures. The committee will be chaired by the Chief, Program Office, USAID/Dakar. The Chief, Agriculture and Natural Resources Office will play a crucial role on the committee. In addition, the

Table 12: Methods of Implementation and Financing

Method of Implementation	Method of Financing	Amount ($ '000)
Conditional Resource Transfer	Direct Payment	28,000
Complementary Project		
Commodities	Direct Payment	487
Training		
Short-term Training	Direct Payment/Direct Reimbursement	100
In-country Workshops	Direct Payment/Buy-in	45
In-country Seminars	Direct Payment/Buy-in	40
Technical Assistance	Direct Payment/Buy-in	350
Surveys and Studies	Direct Payment	795
Audits and Evaluations	Direct Payment	95
Contingency	N/A	88

committee will consist of the USDH economist, the FSN agricultural economist, the FSN macroeconomist and other representatives from the Offices of Agriculture and Natural Resources, Project Development, Financial Management and the Regional Legal Advisor. Other offices such as the Regional Contracting Office, the Executive Office and the training unit of the Project Development Office will join the program implementation committee on an ad hoc basis, as warranted.

The program implementation committee will be responsible

inter alia (1) for monitoring the RSA program for USAID, (2) for formulating recommendations to the Director on disbursements, (3) for preparing all reports originating within USAID/Dakar regarding this program, (4) for preparing and reviewing with the GOS any proposed changes or revisions in the grant agreement, and (5) for coordinating any necessary reviews to ensure that the RSA program is properly and fully implemented.

The Office of Agriculture and Natural Resources will play a key role in monitoring the policy implementation measures being called for in the RSA program, and it will be primarily responsible for the essential job of managing the UPA complementary project.

VI. Feasibility Analysis

Annex 7 contains institutional analyses of the CPSP and SAED, the two key institutions that are the principal subjects of the institutional reform components of the RSA program. Annex 7 also contains a social analysis and a political analysis. Annex 9 provides details about the economics of rice production, distribution and consumption in Senegal. Annex 6 contains an overview of the agriculture sector. A rough benefit/cost analysis can be found in Annex 10.

With the possible exception of the UPA, the RSA program is not concerned with strengthening government institutions in order to make them work more efficiently. On the contrary, the RSA program supports the oft-pronounced policy of the GOS to progressively reduce its direct role in rural development. In the case of SAED, for example, beginning as long ago as 1984, the GOS began to transfer SAED's production and construction responsibilities to farmers and to the private sector. As the overview of the agriculture sector and the social analysis in particular make clear, this tendency to reduce its direct role in rural development is broad-based and deep. It covers virtually all the sub-sectors of the agriculture sector. The GOS clearly is committed to dismantling the "dirigiste" system, with its heavy emphasis on regional development authorities (RDAs), that it established in the 1960s and 1970s. Virtually all facets of rural development were covered by these RDAs, from extension services to marketing, and from input distribution to credit delivery. Social functions, such as literacy training, also were included in the mandate of a number of these RDAs. They blanketed much of the country, and most key crops.

The RDAs received a great deal of donor support, in some sense, too much so. Some of them became unsustainably dependent on external financing. More problematic still was the effect that the relatively well-financed RDA had on traditional suppliers of services to farmers. For example, the role of traditional extension agents working for the Ministry of

Agriculture diminished sharply, yet the national field staff systems of the Ministry of Agriculture remained largely intact. There was little coordination between the several extension service systems and the RDAs. When the funds for the RDA began to dry up, and after the GOS decided to start reducing its direct role in rural development by circumscribing the functions and authorities of the RDAs, there was little left to take their places.

To be sure, the GOS moved cautiously. In the rice sub-sector, cautious movement was, in fact, glacial. There are a number of reason for this. The rice sub-sector, along with the groundnuts sub-sector, are clearly the two most politically sensitive agricultural sub-sectors in the economy. As the analysis of the CPSP makes clear, this is due in part to the difficulties involved in tracking the huge sums of money collected as a perequation, or duty, on imported broken rice. A 1991 Price-Waterhouse audit pointed to a number of serious organizational, accounting and financial management problems in the way that the CPSP conducts its business. Alleged incidents of embezzlement and corruption are frequently reported in the free press of Senegal. It is a high-cost institution responsible for doing a accomplishing a number of tasks that, in a wide variety of settings throughout the world, are typically more efficiently accomplished by the private sector.

In addition, in general terms, the "statist" mentality still is quite powerful in Senegal. As is true in many other African countries with a strong colonial heritage, the people of Senegal display a healthy skepticism concerning the benefits of the free play of market forces. For a key wage good, one that is particularly important to the politically potent urban classes, that skepticism translated in inaction. Despite the instructions contained in its fourth Lettre de Mission, SAED has not -- until recently -- made much progress in divesting itself "from the marketing and processing of paddy rice." Similarly with the CPSP: until recently there were no signs that the CPSP was interested in facing competition from the private sector in its two domains of importing and distributing rice. Both these institutions, however, recently have taken some notable actions, as documented in this PAAD. For SAED this refers to the clear progress toward privatization that has recently taken place; for the CPSP this refers to the on-going auction system, handled by a private management firm, that is being used to sell imported PL-480 whole grain rice.

Perhaps the most important reason cited by the GOS for only slowly relinquishing its direct control over the rice sub-sector is its apprehension that the private sector is unwilling and unable to fill in behind the departing parastatal institutions. This is certainly a real concern. There is little convincing evidence that the private sector "automatically," and with great

speed, fills the vacuum left by departing parastatals.

In Senegal, in the rice sub-sector, the time appears right. In the Senegal River Valley area, numerous private rice mills have sprung up in competition with, and in anticipation of the departure from the field of, SAED's mills. Rice traders are responding to emerging opportunities in internal trade; there are reports that some larger traders are preparing for forays into the hitherto closed (monopolized by the CPSP) international broken rice markets. And, having been nurtured gradually for about a decade (the product of an institutional innovation in 1984), local institutions are emerging in ever greater numbers; they now play an important part in production and in marketing. These local institutions include village institutions, Groupements d'Interet Economique (GIEs, legally defined collections of individuals organized around a specific business), rural community development associations, and local non-governmental organizations. These have formed themselves into larger groupings; one such is the National Federation of Non-Governmental Organizations of Senegal. All these new, potentially dynamic, village-oriented grassroots organizations reflect individual initiative rather than the intentions of external forces such as the GOS or the donor community. It appears that the private sector is alive and well, if still young and inexperienced.

The time for thoroughgoing reform of rice marketing may at last, after a false start in the late 1980s, be at hand. While there are a number of signs that the GOS is prepared to move forward on the long-awaited reforms actually agreed to under the umbrella of the PASA negotiations, and indeed that it has begun to do so already, perhaps the most significant sign is that the political timing is right. The government's determination to implement the recently announced austerity measures suggests that postponing unpopular policy reforms, including reforms in the sensitive rice sub-sector, is now more risky politically as is implementing those reforms. It is now very clear that the expectations of some donors that the GOS would be able and willing to implement admittedly difficult reforms in the lengthy period (about a year) preceeding the 1993 elections were misplaced. Those elections now are behind the GOS.

Those elections were openly contested, featuring much greater freedom of expression and respect for he activities of opposition parties and candidates than had be. the case in the past. The process was not as transparent as d been hoped, and was marred by allegations of registration and allot fraud. In addition, flaws in the new electoral code, wh h did not include provisions for conflict resolution, resulted delays in publishing the election results. Nevertheles several additional parties gained representation in 140-seat National Assembly, and the principal opposition part creased its seats

to 29. The ruling Socialist Party retained a comfortable majority, with 104 seats. President Abdou Diouf was returned to power for a new, seven-year term (his third).

There is evidence of growing political consciousness among "civil society". In response to the interest and public debate generated over the past year and a half by the election process, reinforced by the economic crisis which became evident after the election, several independent newspapers have begun publishing daily instead of weekly. Merchants have organized themselves into a union to press for market liberalization, in particular the end to several monopolies on the import of sugar, rice, and flour. Urban community and university groups have organized public meetings to discuss economic issues. Most of the demonstrations organized to protest against the severe austerity program that is beginning to hit the pocketbooks of urban dwellers have been approved by the government and tolerated by the police. In the countryside, grass-roots organizations are making their voices and interests heard in the national debate.

These are clear indications, in spite of the glitches, that the democratization process is proceeding well in Senegal. The United States has every interest in helping Senegal preserve its record as a model for other African nations in this regard.

Diplomatic relations between the United States and Senegal have historically been close. Senegal plays an important role in the Organization of African Unity, the Islamic Conference, and in United Nations fora in encouraging moderate policies. Senegal has a history of providing troops for various peacekeeping operations and most recently participated in the peacekeeping force in Liberia in 1990-91. It also sent a contingent of troops to Saudi Arabia during the Gulf War. Dakar's airport and port facilities are among the best in the region and are accessible to the U.S. military, and a NASA space-tracking station is installed not far from the city.

Senegal's influence as a non-aligned country extends well beyond its borders, and because of its mature, centrist posture, and its quiet but effective role in international affairs, it is held in esteem by many less developed countries, Western Europe, and the United States.

VII. Conditions, Covenants, Verification Measures and Negotiations

A. Conditions Precedent

1. Conditions Precedent to First Disbursement

Prior to the first disbursement or to the issuance of

any commitment documents under the Program Grant Agreement, the Grantee shall, except as the Parties may otherwise agree to in writing, furnish to USAID, in form and substance satisfactory to USAID:

a. An opinion of counsel acceptable to USAID that the Program Grant Agreement has been duly authorized and/or ratified by, and executed on behalf of, the Grantee, and that it constitutes a valid and legally binding obligation of the Grantee in accordance with all of its terms;

b. A statement of the names of the persons holding or acting in the office of the Grantee specified in Section 8.2 of the Program Grant Agreement and of any additional representatives, together with a specimen signature of each person specified in such statement;

c. The name, address and account number of the bank into which the dollars under this Grant will be deposited;

d. The names, titles and affiliations of the members of the Grantee's Steering Committee for the Rice Structural Adjustment program (RSA Steering Committee);

e. With the intention of eventually eliminating all administered prices for rice:

i. Evidence that the GOS has published and made effective a reference farm paddy price for rice;

ii. Evidence that the GOS has abolished the transport cost subsidy for broken rice in all regions except Kolda and Ziguinchor and that the final broken rice price to consumers includes the full effect of transport costs in all regions except Kolda and Ziguinchor; and

iii. Evidence that the GOS has eliminated administered prices (except wholesale broken rice in Dakar) and margins for all types of rice in all regions except Kolda and Ziguinchor by having liberalized distributors' margins in all regions excluding Kolda and Ziguinchor;

f. With the effect of completing SAED's disengagement from purchasing and processing local rice:

i. Evidence that the GOS has closed, sold, or transferred to the private sector all SAED mills; and

ii. Evidence that the GOS has established the subsidy to qualifying private mills at 25 FCFA per kilogram;

g. With the intention of eventually completely

restructuring CPSP:

i. Evidence that the GOS has developed and adopted the restructuring plan for the CPSP;

ii. Evidence that the CPSP has disengaged from purchasing and distributing local rice; and

iii. Evidence that the CPSP has extended its rice market monitoring measures to all regions.

2. Conditions Precedent to Second Disbursement

Prior to the second disbursement under the Program Grant Agreement, the Grantee shall, except as the Parties may otherwise agree to in writing, furnish to USAID, in form and substance satisfactory to USAID:

a. With the intention of eventually eliminating all administered prices for rice (with the adoption of these conditions, the only remaining administered price in the rice markets of Senegal is the wholesale price of imported broken rice in the Dakar region):

i. Evidence that the GOS has abolished the transport cost subsidy for broken rice in Kolda and Ziguinchor and that the final broken rice price to consumers in all regions includes the full effect of transport costs; and

ii. Evidence that the GOS has eliminated administered prices (except wholesale broken rice in Dakar) and margins for all types of rice in all regions by liberalizing distributors' margins in Kolda and Ziguinchor;

b. Evidence that the GOS has reduced the subsidy to qualifying private mills to 15 FCFA per kilogram;

c. With the intention of eventually completely restructuring CPSP:

i. Evidence that the CPSP has fully implemented Phase I of its reorganization plan (Phase I includes those changes in the organization and operations of the CPSP that precede or are undertaken simultaneously with the relevant reforms identified as conditions precedent to disbursement of the first and second tranches);

ii. Evidence that the CPSP has disengaged from all internal distribution of all types of rice, except in the regions of Kolda and Ziguinchor;

iii. Evidence that the CPSP has closed all

its regional warehouses, except in the regions of Kolda, Ziguinchor and Dakar;

iv. Evidence that the GOS has permitted the private sector to import broken rice; and

v. Evidence that the CPSP is not involved in any way in the importation of any type of rice except broken rice.

3. Conditions Precedent to Third Disbursement

Prior to the disbursement of the third tranche under the Program Grant Agreement, the Grantee shall, except as the Parties may otherwise agree to in writing, furnish to USAID, in form and substance satisfactory to USAID:

a. With the effect of eliminating all administered prices of rice, evidence that the GOS has abolished the administered wholesale price for broken rice in Dakar;

b. Evidence that the GOS has abolished the subsidy to qualifying private mills;

c. With the effect of completely restructuring CPSP:

i. Evidence that the CPSP has completely implemented its reorganization plan;

ii. Evidence that the CPSP has disengaged from all internal distribution of rice in the regions of Kolda and Ziguinchor;

iii. Evidence that the CPSP has closed all its regional warehouses in the regions of Kolda, Ziguinchor and Dakar; and

iv. Evidence that the activities of CPSP are limited to (1) monitoring the rice sector, (2) contracting with the private sector for broken rice imports only, under emergency conditions only, and (3) contracting with the private sector for the management of security stocks of rice on behalf of the CPSP.

B. Covenants

In addition to the above conditions precedent, the following special covenants form part of the Grant Agreement.

1. The Grantee agrees to furnish evidence that any and all amounts owed to the US Government, under any

ongoing or prior GOS-USAID/Dakar project, have been duly paid or settled in a manner acceptable to USAID;

2. The Grantee agrees that it shall not in any way discontinue, reverse or otherwise impede any action it has undertaken in satisfaction of any condition precedent identified in Section VII.A. above, except as may be mutually agreed to in writing by both the GOS and USAID.

3. The Grantee agrees that, in June of each of the years 1994, 1995, 1996 and 1997, the Minister of Finance, the Minister of Agriculture, and the Mission Director of USAID/Dakar, or their representatives, will meet and will jointly agree on the level of funding allocated to the UPA line item in the GOS budget.

4. The Grantee agrees that it will prepare an environmental monitoring, evaluation and mitigation plan to guide the process by which it will identify, monitor and, if necessary, design and implement measures to mitigate undesirable environmental consequences of the RSA program.

5. The Grantee agrees that it will participate in surveys and studies leading to the identification of potential negative effects of the Rice Structural Adjustment program on vulnerable groups such as farm households headed by women, women farm workers, and smallholders in the delta area of the Senegal River Valley; and, if necessary, to design and implement measures to mitigate undesirable consequences.

C. Verification Measures

The GOS and USAID agree to the following verification measures.

1. To satisfy the conditions precedent to the first disbursement:

a. With the intention of eventually eliminating all administered prices for rice:

-- publication of an official notice from the Minister of Agriculture establishing a reference farm paddy price for rice;

-- widespread dissemination of that notice in newspapers and on the radio;

-- submission to the Director of USAID/Dakar of a report in form and substance satisfactory to USAID, signed by the Minister of Agriculture, verifying the effective implementation of the establishment of the reference price

for paddy;

-- publication of a decree notifying transporters on behalf of CPSP of the elimination of the transport cost subsidy for broken rice in all regions except Kolda and Ziguinchor;

-- submission of the relevant accounts of the CPSP confirming that the transport cost subsidy for broken rice has been eliminated in all regions except Kolda and Ziguinchor;

-- submission to the Director of USAID/Dakar of a report in form and substance satisfactory to USAID, signed by the Minister of Agriculture, verifying the effective elimination of any kind of transport cost subsidy (explicitly including the transport cost perequation) on broken rice in all the regions of Senegal excluding the regions of Kolda and Ziguinchor;

-- publication of a decree removing all controls on administered prices, except for the wholesale price of broken rice in Dakar, in all regions excluding the regions of Kolda and Ziguinchor;

-- submission to the Director of USAID/Dakar of a report in form and substance satisfactory to USAID, signed by the Minister of Agriculture, verifying that administered prices, except for the wholesale price of broken rice in Dakar, are eliminated and that effective prices vary depending on market conditions in all the regions of Senegal excluding the regions of Kolda and Ziguinchor; and

-- submission to the Director of USAID/Dakar of a report in form and substance satisfactory to USAID, signed by the Minister of Agriculture, verifying that the GOS has eliminated all administered prices (except wholesale price of broken rice in Dakar) and all administered margins for all types of rice in all regions excluding the regions of Kolda and Ziguinchor.

b. With the effect of completing SAED's disengagement from purchasing and processing local rice:

-- submission to the Director of USAID/Dakar of a report in form and substance satisfactory to USAID, signed by the Minister of Agriculture, verifying that SAED is no longer purchasing or processing local rice; and

-- announcement by the GOS of a declining subsidy to qualifying private mills setting the initial subsidy at CFAF 25 per kilogram;

c. With the intention of eventually completely

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restructuring the CPSP:

-- formal adoption by the GOS, and formal acceptance by USAID, of a plan to restructure the CPSP;

-- publication of a decree prohibiting the CPSP from purchasing or distributing local rice;

-- submission to the Director of USAID/Dakar of a report in form and substance satisfactory to USAID, signed by the Minister of Agriculture, verifying that the CPSP is no longer purchasing or distributing local rice;

-- announcement by the CPSP that it has extended its rice market monitoring measures to all regions.

2. To satisfy the conditions precedent to the second disbursement:

a. With the intention of eventually eliminating all administered prices for rice (with the adoption of these conditions, the only remaining administered price in the rice markets of Senegal is the wholesale price of imported broken rice in the Dakar region):

-- publication of a decree notifying transporters on behalf of CPSP of the elimination of the transport cost subsidy for broken rice in Kolda and Ziguinchor;

-- submission of the relevant accounts of the CPSP confirming that the transport cost subsidy for broken rice has been eliminated in the regions of Kolda and Ziguinchor;

-- submission to the Director of USAID/Dakar of a report in form and substance satisfactory to USAID, signed by the Minister of Agriculture, verifying the effective elimination of any kind of transport cost subsidy on broken rice in the regions of Kolda and Ziguinchor;

-- publication of a decree removing all administered prices on all types of rice (explicitly including broken rice) in the regions of Kolda and Ziguinchor;

-- submission to the Director of USAID/Dakar of a report in form and substance satisfactory to USAID, signed by the Minister of Agriculture, identifying the movement of rice prices in the regions of Kolda and Ziguinchor; and

-- submission to the Director of USAID/Dakar of a report in form and substance satisfactory to USAID, signed by the Minister of Agriculture, verifying the effective elimination of all administered prices (except wholesale price of broken

rice in Dakar) and all administered margins for all types of rice in all regions.

b. Announcement by the GOS of a reduction of the subsidy to qualifying private mills to CFAF 15 per kilogram;

c. With the intention of eventually completely restructuring the CPSP:

-- submission to the Director of USAID/Dakar of a report in form and substance satisfactory to USAID, signed by the Minister of Agriculture, verifying that the CPSP has fully implemented Phase I of its reorganization plan (Phase I includes those changes in the organization and operations of the CPSP that precede or are undertaken simultaneously with the relevant reforms identified as conditions precedent to disbursement of the first and second tranches);

-- publication of a decree prohibiting the CPSP from the internal distribution of all types of rice, except in the regions of Kolda and Ziguinchor;

-- submission to the Director of USAID/Dakar of a report in form and substance satisfactory to USAID, signed by the Minister of Agriculture, verifying that the CPSP is no longer distributing any rice in any region of Senegal excluding the regions of Kolda and Ziguinchor;

-- submission to the Director of USAID/Dakar of a report in form and substance satisfactory to USAID, signed by the Minister of Agriculture, verifying that the CPSP has closed all its regional warehouses in all regions of Senegal excluding the regions of Kolda, Ziguinchor and Dakar;

-- publication of a decree permitting the private sector to import broken rice by subcontracting with the CPSP;

-- submission to the Director of USAID/Dakar of a report in form and substance satisfactory to USAID, signed by the Minister of Agriculture, describing the competitive mechanism used for broken rice imports;

-- submission to the Director of USAID/Dakar of copies of three signed subcontracts awarded under that mechanism;

-- publication of a decree prohibiting the CPSP from the importation of any rice except broken rice; and

-- submission to the Director of USAID/Dakar of a report in form and substance satisfactory to USAID, signed by the Minister of Agriculture, (1) verifying that the private sector controls all imports of non-broken rice into Senegal

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and (2) describing in detail the role of the GOS (explicitly including that of the Comité d'Agrément et de Suivi des Opérations portant sur le riz) in monitoring or otherwise interacting with the private importers of non-broken rice.

3. To satisfy the conditions precedent to the third disbursement:

a. With the effect of eliminating all administered prices for rice:

-- publication of a decree abolishing the administered wholesale price for broken rice in Dakar; and

-- submission to the Director of USAID/Dakar of a report in form and substance satisfactory to USAID, signed by the Minister of Agriculture, verifying that the GOS has eliminated all administered prices (specifically including the wholesale price of broken rice in Dakar) and all administered margins for all types of rice in all regions of Senegal;

b. Announcement by the GOS of the elimination of the subsidy to qualifying private mills;

c. With the effect of completely restructuring CPSP:

-- submission to the Director of USAID/Dakar of a report in form and substance satisfactory to USAID, signed by the Minister of Agriculture, verifying that the CPSP has completely implemented its reorganization plan;

-- publication of a decree prohibiting the CPSP from the internal distribution of all types of rice in all regions including the regions of Kolda and Ziguinchor;

-- submission to the Director of USAID/Dakar of a report in form and substance satisfactory to USAID, signed by the Minister of Agriculture, verifying that the CPSP is no longer distributing any rice in any region of Senegal including the regions of Kolda and Ziguinchor;

-- submission to the Director of USAID/Dakar of a report in form and substance satisfactory to USAID, signed by the Minister of Agriculture, verifying that the CPSP has closed all its regional warehouses in all regions of Senegal including the regions of Kolda, Ziguinchor and Dakar;

-- publication of a decree limiting the activities of the CPSP in the rice sector to (1) monitoring, (2) contracting with the private sector for broken rice imports under emergency

conditions only, and (3) contracting with the private sector for the management of security stocks of rice on behalf of the GOS;

-- submission to the Director of USAID/Dakar of a report in form and substance satisfactory to USAID, signed by the Minister of Agriculture, verifying that the CPSP is engaged only in (1) monitoring the rice sector, (2) contracting with the private sector for broken rice imports under emergency conditions only, and (3) contracting with the private sector for the management of security stocks of rice on behalf of the GOS;

-- submission to the Director of USAID/Dakar of a report in form and substance satisfactory to USAID, signed by the Minister of Agriculture, (1) verifying that the private sector controls all imports of all kinds of rice into Senegal, (2) describing in detail the revised responsibilities of the Comité d'Agrément et de Suivi des Opérations portant sur le riz making the responsibilities of that committee consistent with the new responsibilities of the CPSP, and (3) describing in detail all aspects of the role of the GOS in monitoring or otherwise interacting with the private importers of rice.

D. Negotiating Strategy

The program developed for the RSA program is an extension of the agreements achieved by the PASA discussions between the GOS and the major donors. The negotiations were carried out in a lengthy series of open and frank discussions of sectoral issues, and were followed by a development of a concensus on the resolution of the primary issues. After reaching an agreement on an adjustment framework, participants in the specific discussions on sectoral matters agreed to an implementation schedule.

The issues and the adjustment measures for the rice sub-sector have been fully discussed and a full agreement has been reached between the GOS and USAID/Dakar. Further discussions on the implementation of the adjustment measures will be comprehensive, frank and fully collaborative.

Annexes

1. Program Policy Matrix (Program Logic)

Senegal Rice Structural Adjustment Program (685-0297 & 685-0301)					
Program Purpose: Increase the Incomes of Farmers Who Currently Produce Paddy Rice for the Internal Senegalese Market Through the Liberalization of Rice Marketing and Processing					
Program Area	**Tranche 1 (Conditionality)**	**Tranche 2 (Conditionality)**	**Tranche 3 (Conditionality)**	**Program Indicators**	**Impact Indicators**
Eliminate administered prices for rice.	Eliminate fixed farm price for paddy.			• Public announcement of an indicative paddy price (milligate). • Official documents (arretes, decrets, etc) eliminating wholesale and retail prices and margins on broken rice.	• Rice prices in regional wholesale and retail markets. • Prices received by farmers in rice producing regions. • Prices paid by rice mills. • Rice and other cereal production and marketing statistics. • Rice marketing costs. • Farm production costs and margins.
	Eliminate transport subsidy on broken rice in all regions except Ziguinchor and Kolda.	Eliminate transport subsidy on broken rice in Ziguinchor and Kolda.			
	Eliminate administered prices and margins for broken rice in all regions except Ziguinchor and Kolda and the wholesale price in Dakar.	Eliminate administered prices and fixed marketing margins for broken rice in Ziguinchor and Kolda.	Eliminate the administered wholesale price for broken rice in Dakar.		

Restructured SAED: Disengagement from all local rice purchasing and processing.	SAED divests of all rice processing facilities and purchasing activities.			• Documents indicating transfer of ownership or official cloture of mills. • SAED organization chart. • SAED workplans • SAED operating budget. • Contracts between CPSP and private mills.	• Number, location, capacity and operating rates of private rice mills. • Paddy assembly cost. • Private mill operating costs and margins. • Number of mills participating in the subsidy program. • Subsidy paid to mills.
	Establish 25 FCFA/kg subsidy to qualifying rice mills.	Establish 15 FCFA/kg subsidy to qualifying mills.	Eliminate all rice processing subsidies.		
Restructured CPSP: Disengagement from rice imports and from internal distribution.	CPSP restructuring plan completed and adopted by the GOS.	Phase I reorganization completed.	CPSP reorganization completed.	• CPSP study terms-of-reference. • CPSP study recommendations. • CPSP reorganization Plan. • Decree reorganizing CPSP. • CPSP organization chart. • CPSP budget. • CPSP-private sector contracts: - security stock management; - broken rice imports. • CPSP sector monitoring reports. • Decree(s) establishing conditions and regulations for private imports of broken rice.	• Rice imports. • Import duties. • World market prices (CIF). • Regional rice distribution. • Number of rice wholesalers. • Number, frequency, and volume of ship-side rice purchases. • Number of private sector importers of broken rice.
	CPSP disengaged from all local rice purchase and distribution.	CPSP disengaged from internal distribution of broken rice in all regions except Kolda and Ziguinchor.	CPSP disengaged from internal rice distribution in Ziguinchor and Kolda.		
		CPSP warehouses closed in all regions except Ziguinchor, Kolda and Dakar.	CPSP warehouses closed in Ziguinchor, Kolda and Dakar.		
		Authorize private sub-contractor import of broken rice.	CPSP disengagement from all broken rice imports, except under emergency conditions.		
	Rice markets in all regions monitored by CPSP				

Enable the UPA of the Ministry of Agriculture to identify and monitor policy reforms in the rice sub-sector.	Develop analytic methodology, workplans and schedules for program impact monitoring and reporting and related studies; and issue first policy implementation verification report.	Issue second policy implementation verification report.	Issue third policy implementation verification report.	• Workplans. • Annual Reports. • GOS budget indicating adequate support to UPA.	• Technical presentation of RSA program monitoring reports and related studies at RSA Steering Committee level.

ANNEX 2

PROGRAM DESIGN SUMMARY
LOGICAL FRAMEWORK

Program Title & Number: Senegal Rice Structural Adjustment Program (685-0297, 685-0301) From FY 1994 to FY 1998
Total US Funding: $30 million; Date Prepared: 02/02/94

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
A. Program of Sector Goal: The broader objective to which this program contributes. To increase private incomes through the liberalization of agricultural markets.	Measures of Goal Achievement: -Harvesting and marketing of farm products increased by 3%. -Farmer per capita incomes from marketing of farm products increased by 6%.	-GOS statistical records, agricultural reports. -Marketing studies. -Donors'economic reports. -USAID's economic and agricultural assessments.	Assumptions for achieving goal targets: -No drastic deterioration of climate, rainfall and other natural environmental factors. -No dramatic disruptions in market orientations -Prices of farm products do not shift substantially. -GOS maintains commitment to implement ag policy reforms.
B. Program Purpose: To increase incomes of farmers who currently produce paddy rice for the internal Senegalese market through the liberalization of rice marketing and processing.	Conditions that will indicate purpose has been achieved. End of program status: -Incomes of farmers marketing paddy rice at start of program increased by 10%; -Greater degree of efficiency in rice marketing and processing ; -State monopolies on rice marketing and processing eliminated; -Rice pricing policy liberalized.	-GOS agricultural reports, evaluations; -USAID's surveys, assessments and studies; -Import trade statistics; -UPA reports; -SAED reports; -Marketing studies; -Published regulations; -Private sector share in commodity trade.	Assumptions for achieving purpose: -Continued GOS emphasis on private sector development and state disengagement from rice subsector. -Private sector willingness to invest in marketing and processing. -Financing available.

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C. Outputs: 1. Liberalization of rice prices and privatization of rice marketing and processing: a. Liberalization of internal rice pricing policy.	-All administered rice prices eliminated in all regions of Senegal; -Rice transport perequation eliminated in all regions of Senegal; -Rice distributors' fixed margins eliminated in all regions of Senegal	-GOS decree, published regulations, announcements, Min. of AG report; -Market surveys, market prices; UPA reports, CPSP accounting records.	-GOS is still committed to macro-economic policy reform. -CPSP restructuring study completed and implemented; -SAED still committed to fully implement IVth "lettre de Mission"; -Rice paddy production is adequate;
b. Liberalization and privatization of domestic rice marketing and processing;	-CPSP disengaged from purchasing and distributing local rice; -SAED disengaged from purchasing and processing local paddy rice; -GOS subsidies to private rice mills eliminated.	-GOS decrees, published regulations; -Geographic price differentials, rice market surveys; -GOS/Min. of Ag. reports; -SAED rice mills sold to private sector or closed; -Private rice mills operated in Senegal River area; -CPSP records, SAED records; -100% of local rice processed and marketed by the private sector; -CPSP/ SAED activities,staff size;	-Private sector investors available; -Private sector financing available.
c. Liberalization and privatization of broken rice imports;	-Broken rice import licensing requirements eliminated; -CPSP monopoly on broken rice imports eliminated.	-Private sector activity in rice storage, transport and marketing. -GOS decree; -Private sector activity in rice imports; -Rice import records, UPA reports.	
2. Improved ability of UPA in rice subsector policy formulation, monitoring and assessment: a. Additional policy formulating, monitoring, and evaluation skills provided to UPA staff;	-20 people trained by PACD: 5 in economic analysis; 5 in policy analysis; 5 in policy presentation; 5 in program planning.	-UPA reports, contractors reports, GOS and USAID records.	-Suitable staff exist at UPA and are available for training; staff remains at UPA after completing training; -USAID, Contractors and UPA find suitable personnel to complete monitoring, evaluations and studies/surveys.
b. An operational rice subsector policy program established at UPA;	-Completion of the following activities before the PACD: 15 policy workshops; 10 policy seminars; 3 policy presentations.		
c. An operational rice subsector policy impact monitoring system jointly managed by UPA and USAID/Senegal.	-8 farm household income studies; 4 domestic resource cost studies; 3 studies on the private rice processing industry; 3 studies on private rice trading industry; 3 sets of the private rice subsector policy verification studies; 3 financial audits and 1 end-of-program evaluation.		

b. Inputs:	Implementation Target (type and quantity):		Assumptions for providing inputs:
-$28 million in tranched program grants disbursed to the GOS;	- $8 million _____ 1994 - $10 million _____ 1995 - $10 million _____ 1996	-USAID disbursement records; -GOS disbursement records;	-GOS meets conditions precedent; -AID Washington allocations arrive in a timely fashion.
-$2 million to finance commodities, training and technical assistance for UPA, and to support monitoring surveys, studies, audits and evaluation of the program.	- $592 thousand _____ 1994 - $382 thousand _____ 1995 - $306 thousand _____ 1996 - $461 thousand _____ 1997 - $259 thousand _____ 1998	-USAID contract records; -Studies, evaluation and audit reports.	

ANNEX 3

INITIAL ENVIRONMENTAL EXAMINATION OR CATEGORICAL EXCLUSION

PROJECT COUNTRY	:	SENEGAL
PROJECT TITLE AND NUMBER	:	Senegal Rice Structural Adjustment (RSA) Program (685-0297); Project (685-0301)
FUNDING	:	U.S. $30 million FY(s): LOP, 5 Years
IEE PREPARED BY	:	Iqbal Qazi Mission Environmental Officer USAID/Senegal

ENVIRONMENTAL ACTION RECOMMENDED:

Positive Determination	
Negative Determination	X
Categorical Exclusion	X
Deferral	

SUMMARY OF FINDINGS

a. The Rice Structural Program will increase the incomes of farmers by supporting the efforts of the Government of Senegal (GOS) to implement two fundamental changes in the rice sub-sector. First, administratively determined prices will be replaced with a price system that better reflects real economic costs. Second, inefficient parastatal enterprises will be replaced with efficient, competitive private enterprises.

This program is a $30 million, five-year, non-project sectoral assistance program. The goal of this program is to increase private sector incomes through the liberalization of agricultural markets. In this program, $28 million will be in the form of a non-project sector assistance program grant to the GOS to support reforms that will liberalize the rice markets in Senegal. The $2 million will support technical assistance, training, commodities, and studies. The commodities are for office renovations, office equipment and supplies, computer equipment and supplies, and vehicles.

This program does not support any investments in marketing, processing or production. There is no funding to assist investors or encourage potentially new investors in any particular crop. There is no credit component to finance rice mills or storage facilities or

to help market agricultural products.

b. An Environmental Monitoring, Evaluation and Mitigation Plan (EMEMP) will be designed to address those potential or actual adverse impacts which may be flagged during program implementation. This EMEMP will determine approaches, factors and indicators which need to be monitored. It will also identify the institutions which should be involved in the monitoring, their responsibilities, how they will proceed and the timing.

The environmental impact review will identify reasonably foreseeable long-term environmental impacts, and provide for mitigation by the GOS.

The Program Agreement will include a provision whereby the GOS will covenant that it will prepare an environmental monitoring, evaluation and mitigation plan to guide the process by which the GOS will monitor, and if necessary, mitigate measures against undesirable environmental consequences of the program.

c. Technical assistance and training are recommended for a categorical exclusion under 22 CFR 216.2 (c)(2)(i).

d. Studies are recommended for a categorical exclusion under 22 CFR 216.2 (c)(2)(iii).

e. Commodities and equipment including office support, and supplies are recommended for negative determination under 22 CFR 216.3 (a)(2)(iii), because these commodities are few in number, are generally environmentally benign, and no significant effects on the environment can be envisioned. This will not have a significant effect on the environment.

f. The activities proposed under this program are not anticipated to have a significant impact on threatened or endangered species or critical habitat.

CONCURRENCE:

Bureau Environmental Officer: Approved: ✓

Disapproved: _____

Date: 1/21/94

CLEARANCE:

GC/Africa: _____ Date 21 Jan 94

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I. PROJECT DESCRIPTION

The Senegal Rice Structural Adjustment (RSA) program is a $30 million, five-year, non-project sectoral assistance program. The goal of the RSA program is to increase private sector incomes through the liberalization of agricultural markets.

The purpose of the Senegal Rice Structural Adjustment (RSA) program is to increase the incomes of farmers currently producing paddy rice for the internal Senegalese market, through the liberalization of rice marketing and processing. The program will accomplish six objectives. With the disbursement of the third tranche, the Government of Senegal (GOS) will have: (1) completely eliminated all administered pricing in the rice sub-sector, (2) replaced a fixed paddy rice reference (or indicative) paddy price, (3) abolished all rice transport cost subsidies assuring that consumers pay the full cost of differential transport costs, (4) eliminated fixed price distributors' margins throughout the country, (5) abolished the fixed wholesale price for broken rice in Dakar (the lynchpin of the current administered pricing system), and (6) reformed the two key institutions in the rice sub-sector. These two institutions are Caisse de Perequation et de Stabilisation des Prix (CPSP) and Societe Nationale d'Amenagement et d'Exploitation des Terres dus Delta du Fleuve Senegal et des Vallees du Fleuve Senegal et de la Faleme (SAED).

II. MONITORING, EVALUATION AND MITIGATION

As part of the RSA program, an Environmental Monitoring, Evaluation and Mitigation Plan (EMEMP) will be designed for those activities that may have adverse effects on the environment and natural resources as recommended in Reg 16 (22 CFR Section 216) paragraph 216.3(a)(8). This EMEMP will provide for a process and the capacity within the GOS to monitor and mitigate undesirable consequences.

Through a carefully planned and implemented monitoring and evaluation program, negative environmental impacts will be discovered and reviewed; appropriate actions will be undertaken to mitigate impacts. The RSA program will take cognizance of the potential for such impacts, and consider its support conditional on the continued adherence to the principle of maintaining environmental quality.

The EMEMP will be designed in accordance with the ad hoc guidance from the Africa Bureau and with guidance provided by the "Plan for Supporting Natural Resources Management in Sub-Saharan Africa: Regional Environmental Strategy for the AID Africa Bureau". This will satisfy the need to link USAID's DFA Strategic Objective No. 3 (promoting long-term increases in productivity) with its approach to addressing Sub-Saharan Africa's environmental problems and longer-term environmental consequences of USAID assistance.

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The EMEMP will determine the activities/issues, the factors and the indicators that need to be monitored. It will indicate also the institutions involved in the monitoring, their responsibilities, how they will proceed, and the timing. This EMEMP will be a tool for USAID/Dakar, the GOS and the private sector involved in the RSA program to determine course corrections identified through monitoring the impacts of the project on the environment and natural resources.

The RSA program calls for a series of ad-hoc studies to be financed by direct USAID fixed price purchase orders. One of the first of these purchase orders will support the preparation of an environmental monitoring, evaluation and mitigation plan (EMEMP). This EMEMP may usefully be structured in a manner similar to that of USAID/Dakar's comprehensive programmatic environmental review of the Southern Zone Water Management project. As is the case with the other surveys and studies to be prepared under the RSA program (including, if and as necessary, specific Environmental Impact Reviews), the Unité de Politique Agricole (UPA) of the Ministry of Agriculture and USAID/Dakar will collaborate on (e.g., will jointly prepare a scope of work for) the EMEMP. The UPA will coordinate with other elements of the GOS, as appropriate, such as the Ministry of the Environment and CONSERE, the national coordinating body on environmental policy matters. The EMEMP will be integrated into the broader approach to be adopted by the GOS as part of its National Environmental Action Plan.

Results of monitoring will feed back to the mitigation of the project in two ways: 1) recommendations for program course correction; and 2) corrective accompanying interventions.

The EMEMP will determine how the GOS and private sector will carry out mitigation measures that appear to be necessary for conserving the environment and natural resources. Though the RSA program is not a production project, some policy interventions may "cycle back" into the production process. At present, there is no reasonably foreseeable (i.e., direct and predictable) impact of the policy and institutional reforms of the RSA program (see section IV.B.5 of the NPA Guidance). Therefore, a negative determination is warranted. Nevertheless, USAID/Dakar will design an EMEMP to identify presently unforeseen environmental impacts of the RSA program.

The EMEMP will focus on the environmental impacts of the changes in farm production patterns in the Senegal River Valley (especially in the delta, and to a lesser extent in the lower valley) stimulated by the RSA policy reform program. These changes will include principally the intensification of rice cultivation (as farmers who continue to produce paddy become more efficient) and the diversification into alternative crops such as green beans, tomatoes and other vegetables, and irrigated sorghum.

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III. RECOMMENDED ENVIRONMENTAL ACTION

The RSA program is a policy reform program that will:

(1) replace inefficient state-run rice processing and marketing enterprises with efficient, competitive private enterprises. The primary beneficiary is the GOS treasury. It is not practical to identify environmental impacts of the fiscal benefits of reducing GOS subsidies to the parastatals operating in the rice sub-sector;

(2) change the relative price ratios, at the farm-gate, between rice and substitute crops.

There are no direct and predictable consequences of the change in relative prices of rice and other crops, other than the generalization that, (a) farmers who continue to grow rice for the market will do so, on average, more efficiently than is currently the case, and (b) farmers who cannot grow rice as efficiently will switch to other crops. The PAAD discusses the anticipated program impact in Section IV. I. 1, pp. 55-58. The subsequent section refers to the studies and surveys that will shed light on the specific reactions of farmers (e.g. what specific crops will be substituted for the paddy that, at the outset of the program, was inefficiently grown?).

In addition:

a. Technical assistance and training are recommended for a categorical exclusion under 22 CFR 216.2 (c)(2)(i).

b. Studies are recommended for a categorical exclusion under 22 CFR 216.2 (c)(2)(iii).

c. Commodities and equipment including office support, and supplies are recommended for negative determination under 22 CFR 216.3 (a)(2)(iii), because these commodities are few in number, are generally environmentally benign, and no significant effects on the environment can be envisioned. This will not have a significant effect on the environment.

d. The activities proposed under this program are not anticipated to have a significant impact on threatened or endangered species or critical habitat.

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ANNEX 4: GOS LETTER OF REQUEST

REPUBLIQUE DU SENEGAL

MINISTERE
DE L'ECONOMIE, DES FINANCES
ET DU PLAN

DIRECTION DE LA DETTE
ET DE LA COOPERATION FINANCIERE

Le Ministre

N° 08512 /M.E.F.P./D.D.C.F

Dakar, le - 1 DEC. 1993

Date Rec'd. DEC. 0 3 1993
MRN 0 0 5 5 6 6
Action Taken .....
Date .....
Signature .....

A Monsieur le Directeur
de l'USAID/Sénégal,
BP 49,

DAKAR

OBJET: Demande officiel d'assistance
au titre du programme de subvention
Au secteur Agricole (685-0297).

Monsieur le Directeur,

Je vous confirme par la présente que le Gouvernement du Sénégal souhaite la mise en oeuvre du programme en objet pour lequel l'USAID se propose d'apporter un financement d'un montant global de TRENTE MILLIONS (30 000 000) de dollars E.U pour une durée de trois ans.

Je vous informe que ce programme qui a fait l'objet de négociations avancées entre l'USAID et les départements concernés a déjà été approuvé par le Gouvernement du Sénégal.

En conséquence, le Ministère de l'Economie, des Finances et du Plan soumet la présente requête du Gouvernement du Sénégal à l'USAID.

Veuillez agréer, Monsieur le Directeur, l'assurance de ma considération distinguée.

Pour le Ministre de l'Economie, des Finances et du Plan et par délégation
Le Directeur de Cabinet

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ANNEX 5

OUTGOING TELEGRAM

AGENCY FOR INT'L DEV.
TELECOMMUNICATIONS CENTER

ORIGIN OFFICE AFPD-04
INFO AFFW-03 AFDP-06 PAUL-01 AFCO-02 AFTR-05 BIFA-01 SAST-01
PDPR-01 PPPB-02 GC-01 GCAF-02 PPEA-01 GCCM-01 FVA-01
FVPP-01 APSP-02 APFP-02 ES-01 OFDA-02 STM-01 STME-04
STFA-01 STAG-02 STFM-02 STEM-01 SEOP-01 SETM-01 SEOS-02
AFIB-01 FMAD-02 APEM-01 FFP-09 SERP-01 SECS-02 AMAD-01
AAAF-03 /075 A0 04/0110Z

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TAGS:
SUBJECT: SENEGAL AGRICULTURE SECTOR GRANT (685-0297, 0381), PAIP ECPR REVIEW

1. THE AGRICULTURE SECTOR GRANT PAIP ECPR WAS HELD ON APRIL 9. THE MEETING WAS CHAIRED BY DAA/AFR, E.L. SAIERS, AND ATTENDED BY REPRESENTATIVES FROM AFR/SWA, AFR/PD, AFR/TR, AFR/DP, AND GC/AFR. THE MISSION WAS REPRESENTED BY DIRECTOR JULIUS COLES, RICHARD GREEN AND ROD KITE. THE MISSION SHOULD PROCEED WITH PAAD DESIGN BUT THE LEVEL OF

FUNDING WILL NOT BE DECIDED UNTIL THE PAAD IS REVIEWED. THE PAAD WILL BE REVIEWED IN AID/W. A SUMMARY OF THE MAIN ISSUES AND CONCERNS RAISED AT THE ECPR, AND WHICH SHOULD BE ADDRESSED DURING PAAD DESIGN, FOLLOWS:

2. ISSUE NO. 1: WILL THE PROGRAM BUILD SENEGALESE COMMITMENT TO REFORM, OR WILL THE CONTINUING, ALBEIT DIMINISHED, ROLE OF THE STATE SUSTAIN THE INFLUENCE OF PRESSURE GROUPS AND POSTPONE A TRUE COMMITMENT TO FREE MARKET PRINCIPLES?

ALTHOUGH ALL THE DETAILS ARE NOT CLEAR, IT APPEARS THAT AT THE END OF THE PASA AND SUBSTANTIAL DONOR FINANCING STATE MONOPOLIES WILL HAVE BEEN ELIMINATED BUT THE STATE WILL

MAINTAIN A DOMINANT ROLE IN SETTING IMPORT DUTIES, PRODUCER SUBSIDIES, AND PRICES FOR SOME CROPS. THE RESULTS OF THE PASA MAY PROVE AMBIGUOUS DUE TO THE CONTINUING STAKES INVOLVED FOR SECTOR PARTICIPANTS AND RESISTANCE TO INCREASED COMPETITION. THE ECPR WAS THEREFORE CONCERNED THAT THE PASA, DESPITE THE BEST NEGOTIATING EFFORTS OF THE DONORS, DOES NOT REPRESENT TRUE STRUCTURAL REFORM IN THE SENSE OF REDEFINING THE WAY IN WHICH THE GOS SEES ITS OWN ROLE IN THE SECTOR, BUT INSTEAD REDUCES OR PERHAPS JUST COMPLICATES THE MEANS BY WHICH THE GOS WILL INTERVENE IN THE FUTURE TO UNDERMINE MOVEMENT TO A TRULY MARKET-DRIVEN SECTOR. GIVEN THE HIGH LEVEL OF RESOURCES INVOLVED AND THAT DONORS HAVE NOW BEEN ENGAGED IN STRUCTURAL REFORM IN SENEGAL FOR NEARLY A DECADE, THE ECPR QUESTIONED WHETHER WE SHOULD SIGN ON TO A NEW POLICY REFORM PACKAGE THAT LEAVES IN PLACE ANY OFFICIAL STATE

ROLE THAT HAS THE POTENTIAL TO DISTORT FREE MARKET OPERATIONS, DESPITE OUR HOPE THAT SUCH POTENTIAL WILL BE SUFFICIENTLY CIRCUMSCRIBED TO LIMIT ACTUAL STATE INTERFERENCE. FOR EXAMPLE, SHOULD THE DONORS TAKE A HARDER POSITION ON OUTRIGHT ELIMINATION OF CPSF IN ORDER TO CLOSE OFF THIS POTENTIAL AVENUE FOR MARKET INTERVENTION, AND THEREBY STRENGTHEN THE SIGNALS TO THE PRIVATE SECTOR?

GUIDANCE: THE ECPR CONCLUDED BY EMPHASIZING THAT THE PAAD MUST EXAMINE THE PROSPECT FOR CONTINUED STATE INTERFERENCE WITH MARKET FACTORS FOR EACH MAJOR CROP. THE PAAD SHOULD INCLUDE AN ANALYSIS OF THE AGENCIES AND INTEREST GROUPS WITHIN AND OUTSIDE THE GOS THAT WILL BE AFFECTED ADVERSELY IN THE SHORT/MEDIUM TERM BY THE PAS REFORMS. WHAT IS THE PROSPECT AND LIKELIHOOD OF ANY OF THESE UNDERMINING THE REFORMS? THE PAAD WILL HAVE TO MAKE A STRONG CASE THAT THE ELEMENTS OF THE PROPOSED PASA ADD UP TO A SELF-SUSTAINING PACKAGE OF REFORMS THAT CONTINUES TO BUILD GOS/FARMER COMMITMENT TO MARKET FORCES, AND DOES NOT LEAVE IN PLACE ENOUGH EXCEPTIONS TO MARKET PRINCIPLES SO AS TO JEOPARDIZE THOSE REFORMS THAT ARE UNDERTAKEN.

3. ISSUE NO. 2: IS INVOLVEMENT IN THE RICE SUBSECTOR APPROPRIATE GIVEN THE USAID/DAKAR PROGRAM FOCUS ON RAINFED CROP PRODUCTIVITY WITHIN AREAS OF RELIABLE RAINFALL? ARE THERE OTHER ASPECTS OF THE PASA MORE ALIGNED WITH OUR STRATEGY AND ONGOING/PLANNED PROJECT INTERVENTIONS AROUND WHICH AN NPA SHOULD BE BUILT?

IT IS RECOGNIZED THAT ACHIEVEMENT OF THE PROGRAM GOAL WILL

EQUIRE AN INCREASE IN PRODUCTIVITY AND MARKETED SURPLUS IN THOSE AREAS OF SUFFICIENT AGRICULTURAL POTENTIAL. TO

EFFECT THESE INCREASES THE MARKET SIGNALS TO PRODUCERS OF COARSE GRAINS AND GROUNDNUTS WILL HAVE TO IMPROVE (ALTHOUGH OTHER FACTORS MAY CONTINUE TO BE OF EQUAL OR GREATER IMPORTANCE).

THE ECPR WAS CONFIDENT THAT THE PASA WAS A STEP IN THE RIGHT DIRECTION TOWARD IMPROVING THE OVERALL POLICY ENVIRONMENT FOR RICE AND GROUNDNUTS. IT WAS ALSO CONVINCED THAT THE PASA WOULD RESULT IN IMPROVED FISCAL POLICY AND BUDGETARY SAVINGS BY REDUCING THE INEFFICIENT FLOW OF GOS RESOURCES INTO THE SECTOR. THE MISSION POINTED OUT THAT THE EFFECTS OF THE REFORMS WOULD BE MORE MODEST THIS YEAR THAN OTHERS SINCE, MORE BY CHANCE THAN DESIGN, PRICE SIGNALS THIS YEAR ARE BETTER THAN USUAL. THE ECPR DID NOT DISAGREE THAT THIS WOULD BE THE RIGHT YEAR TO INITIATE A NEW REFORM AGENDA, SINCE THE SHORT-TERM SHOCK IS SOFTER.

DESPITE THE TIMELINESS OF A SET OF REFORMS THAT ARE CLEARLY IN THE RIGHT DIRECTION, A FIRM JUSTIFICATION FOR NPA BASED ON A LINKAGE BETWEEN OUTPUTS AND THE PROGRAM PURPOSE/GOAL IS LACKING. THE ECPR WAS CONCERNED THAT A PROGRAM FUNDED WITH THIS LEVEL OF RESOURCES DEMONSTRATE A CLOSER RELATIONSHIP BETWEEN POLICY REFORM ON THE ONE HAND AND FARMER BEHAVIOR AND ULTIMATELY HIS PRODUCTIVITY AND INCOME ON THE OTHER.

BASED ON THIS TALL ORDER, SEVERAL REVIEWERS WERE CONCERNED

THAT WE DID NOT KNOW ENOUGH ABOUT THE CROSS-ELASTICITIES BETWEEN RICE AND COARSE GRAINS TO PREDICT THE EFFECT OF RICE POLICY CHANGES ON COARSE GRAIN PRODUCTION AND ON THE MARKETED SURPLUS OF COARSE GRAINS. IF RICE IMPORTS ARE DEREGULATED, DUTIES LIMITED TO ONLY THAT WHICH WILL OFFSET

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FX RATE DISTORTIONS, AND INTERNAL TRANSPORT SUBSIDIES ELIMINATED, WILL THE EFFECT BE MORE AND CHEAPER RICE? HOW WILL THIS EFFECT THE DEMAND, PRICE, CONSUMPTION, AND PRODUCTION OF COARSE GRAINS? THE ECPR WAS CONCERNED THAT THIS PROGRAM WOULD ENGAGE THE MISSION IN A SERIES OF MARKET AND PRODUCTION ISSUES FOR RICE WITHOUT STRONG CONFIDENCE THAT THESE REFORMS WILL HAVE THE DESIRED EFFECT ON THE DOMESTIC COARSE GRAIN MARKET.

GIVEN THE UNCERTAINTIES IN THE RICE MARKET, ITS SENSITIVITY TO EXTERNAL FACTORS, AND GOS RELIANCE ON THE SUBSECTOR FOR A RANGE OF POLITICAL/FISCAL OBJECTIVES, THE MISSION SHOULD CONSIDER AS AN ALTERNATIVE AN NPA BASED ON ASPECTS OF THE PASA MORE CLOSELY ASSOCIATED WITH THE BALANCE OF THE MISSION PROGRAM. THE ECPR NOTED THAT A RICE/GROUNDNUT NPA FOCUS WOULD REQUIRE SUBSTANTIAL MISSION

INVESTMENT IN MONITORING THESE SUBSECTORS, WHEN THE MISSION MUST ALSO CONTEND WITH A PROJECT PORTFOLIO INVOLVING A DIFFERENT SET OF CROPS AND TECHNICAL ISSUES. AN ALTERNATIVE NPA FOCUS COULD BE ON FOOD CROPS AND ISSUES ASSOCIATED WITH NATURAL RESOURCE MANAGEMENT (E.G. LAND TENURE). ANOTHER DIRECTION COULD BE AGRICULTURE CREDIT SINCE THIS AND OTHER MISSION PROGRAMS HAVE FUNDED PAYMENT OF ONCAD DEBT WITH LOCAL CURRENCY AS PART OF AN AGRICULTURE STRATEGY.

GUIDANCE: THE MISSION SHOULD CONSIDER OTHER ASPECTS OF THE PASA REFORM PACKAGE THAT BEAR A MORE DIRECT RELATIONSHIP TO FOOD CROPS AND NATURAL RESOURCE MANAGEMENT, AS AN ALTERNATIVE FOCUS FOR THIS NPA.

IF THE MISSION WANTS TO STAY WITH A RICE/GROUNDNUT FOCUS, AT THE PAAD STAGE THE MISSION WILL HAVE TO FULLY ANALYZE THE EXPECTED EFFECTS OF THE REFORMS ANTICIPATED UNDER THE PASA. SPECIFICALLY, THE PAAD SHOULD DETERMINE THE MOST LIKELY PRICE MOVEMENTS FOR RICE, AND BASED ON WHATEVER INFORMATION IS AVAILABLE ON CONSUMPTION/PRODUCTION CROSS ELASTICITIES, PROJECT THE EFFECTS OF REFORM ON PRODUCTIVITY ENHANCING INVESTMENTS, CROP SWITCHING, BRINGING NEW LAND INTO PRODUCTION, ETC. THE ANALYSIS SHOULD LOOK FURTHER DOWN THE ROAD TO THE EFFECT THESE REFORMS WILL ULTIMATELY HAVE ON REVERSING THE PRODUCTION TREND TOWARD LOWER VALUE CROPS, WHICH IS WELL-DOCUMENTED IN YOUR AGRICULTURE SECTOR ANALYSIS. IN SUM, A PROGRAM OF THIS SCALE MUST BE BASED ON AN ANALYSIS OF WHAT WILL BE DIFFERENT AT THE FARMER LEVEL BY THE PACD.

4. ISSUE NO. 3: SHOULD LOCAL CURRENCY BE USED TO PAY ONCAD DEBT? HOW CAN WE ENSURE THAT THIS EXPENDITURE WILL HAVE A LONGER TERM DEVELOPMENT IMPACT?

THE PAIP INDICATES THAT THE MISSION IS LEANING TOWARD USING MOST OF THE CFAF GENERATED FOR PAYING DEBT OWED BY ONCAD TO THE BANKING SYSTEM. THE PAIP NOTES THAT THIS APPROACH WILL SUPPORT THE MISSION'S DEVELOPMENT OBJECTIVE FOR THE AGRICULTURE SECTOR OF INCREASED INCOME THROUGH

LIBERALIZED MARKETS AND INCREASED CROP PRODUCTIVITY. AID/W AND MISSION STAFF AGREED THAT THE PROPOSED LOCAL CURRENCY PLAN IS APPROPRIATE ONLY IF USAID/S IS CONTRIBUTING TO A NET REDUCTION IN GOS DEBT IN THE SECTOR (I.E. THAT THE GOS IS NOT AT THE SAME TIME INCREASING ITS INDEBTEDNESS IN THE SECTOR THROUGH ANOTHER SPIGOT).

GUIDANCE: IN DEVELOPING THE PAAD THE MISSION SHOULD EXPLORE WAYS FOR ENSURING THAT NET REDUCTION IN

PARASTATAL/GOS DEBT IN THE AGRICULTURE SECTOR IS ACHIEVED.

THIS COULD INCLUDE APPROPRIATE MONITORING OF DEBT DURING PROJECT IMPLEMENTATION, AS WELL AS PROGRAM COVENANTS/CONDITIONALITY ADDRESSING THIS ISSUE.

5. ISSUE NO. 4: WHAT IS THE APPROPRIATE FUNDING LEVEL? HOW SHOULD DISBURSEMENTS BE PHASED?

THE ECPR NOTED THAT AT $36 MILLION USAID/DAKAR WOULD BE THE LARGEST DONOR SUPPORTING THE PASA. THIS WAS A CONCERN FOR TWO REASONS: FIRST, IN ABSOLUTE TERMS THE ECPR WAS NOT CONVINCED THAT THE PACKAGE OF REFORMS IS SIGNIFICANT ENOUGH TO WARRANT THIS LEVEL OF FUNDING, DESPITE ITS MULTI-DONOR SUPPORT AND COMMITMENT OF THE DONORS TO MAXIMIZE LEVERAGE THROUGH COORDINATION. SECOND, IN RELATIVE TERMS, SHOULD WE BE THE LEAD DONOR SINCE THE MOST SIGNIFICANT REFORMS STILL TO BE UNDERTAKEN ARE IN RICE AND GROUNDNUTS, YET THE BALANCE OF THE MISSION AGRICULTURE PROGRAM INSTEAD FOCUSES ON RAINFED CEREAL PRODUCTIVITY THROUGH ENVIRONMENTALLY SOUND METHODS? DOES THE MISSION HAVE THE PERSONNEL AND RESOURCES TO BE ADEQUATELY ENGAGED

IN COARSE GRAINS, RICE, AND GROUNDNUTS?

ONE OPTION WOULD BE TO REDUCE A.I.D.'S SUPPORT TO THE $20 MILLION RANGE, ALLOWING FOR THE FUNDS EARLIER DEOBLIGATED FROM OTHER AGRICULTURE SECTOR PROJECTS TO BE APPLIED TO THIS NEW PROGRAM, BUT PROVIDING LITTLE OR NO NEW OYB FOR THE PROGRAM.

THE ECPR ALSO QUESTIONED MISSION'S PLAN TO DISBURSE SUCH A LARGE PROPORTION OF THE NPA (44 PERCENT) IN THE FIRST TRANCHE. A LESS FRONT-LOADED DISBURSEMENT PLAN WOULD SEEM APPROPRIATE GIVEN THE DIFFICULT PHASED REFORM AGENDA AHEAD.

GUIDANCE: THE MISSION SHOULD RECONSIDER THE APPROPRIATE OVERALL LEVEL OF SUPPORT FOR THE PASA. AT THIS MOMENT IT IS DIFFICULT TO SEE HOW MORE THAN $20 MILLION COULD BE JUSTIFIED. A DISBURSEMENT PLAN LESS WEIGHTED TO THE FIRST TRANCHE SHOULD BE PROPOSED IN THE PAAD.

WITH REGARD TO OYB MANAGEMENT, IF THE APPROPRIATE AGRICULTURE SECTOR GRANT LEVEL OF SUPPORT IS NOT MORE THAN $20 MILLION, THEN REPROGRAMMING OF THE REMAINING $17 MILLION SHOULD BE DONE. ALSO, IN THE EVENT THAT THE PASA IS NOT SIGNED, AN ALTERNATIVE OYB REVISION SHOULD BE DEVELOPED. PLEASE COORDINATE BOTH CONTINGENCY PLANS WITH THE DESK OFFICER.

6. PROGRAM LOGFRAME. THE PAIP SHOWS BOTH THE PROGRAM OUTPUTS AND PURPOSE AS LIBERALIZATION OF MARKETING AND PROCESSING. SINCE LIBERALIZATION AND PRIVATIZATION

MEASURES WILL BE SPECIFIC CONDITIONS FOR PROGRAM DISBURSEMENTS, THESE SHOULD BE PROGRAM OUTPUTS ONLY. THE PROGRAM PURPOSE SHOULD REFLECT A HIGHER LEVEL IMPACT ON PRODUCERS, CONSUMERS, OR INTERMEDIARIES IN TERMS OF INVESTMENT, PRODUCTION, OR PRODUCTIVITY. ARE THERE OTHER FACTORS THAT NEED TO BE ADDRESSED IN ORDER TO EFFECT ACHIEVEMENT OF A REVISED PROGRAM PURPOSE?

7. LINKAGE TO FOOD AID. THE ECPR NOTED THAT THERE IS NO DISCUSSION OF THE RELATIONSHIP BETWEEN THIS PROGRAM AND THE ONE-YEAR TITLE III FOOD AID PROGRAM WITH RICE THAT IS NOW UNDER DESIGN. THE MISSION SHOULD ANALYZE NOW, IF IT HAS NOT ALREADY, WHETHER THE IMPORTATION OF RICE MIGHT BE AT CROSS-PURPOSES WITH THE SECTOR GRANT. THE RATIONALE FOR THE FOOD AID PROGRAM (BOTH THE ONE-YEAR FY 91 PROGRAM AND THE PROPOSED MULTI-YEAR PROGRAM TO FOLLOW) AND THE RELATIONSHIP BETWEEN IT AND THE SECTOR GRANT NEEDS TO BE

ADDRESSED IN THE PAAD.

8. PROGRAM IMPACTS. THE PAIP NOTES THAT "THE POLICY CHANGES INTRODUCED IN THE PASA WILL HAVE A COMPLEX MIX OF IMPACTS, NOT ALWAYS POSITIVE, ON PR DUCERS, CONSUMERS AND INTERMEDIARIES." THE MISSION IS RE INDED THAT THE WINNERS AND LOSERS IN THIS PROGRAM WILL HAVE TO BE ANALYZED AT THE PAAD STAGE. FOR EXAMPLE, THE MISSION MIGHT ANALYZE THE EFFECTS ON VARIOUS CLASSES OF FARMERS (BY SIZE AND TYPE), AND ON AGROINDUSTRIES, WHERE LAYOFFS MIGHT RESULT. (IN AN EXTREME CASE, SUCH ANALYSIS COULD BE THE BASIS FOR DESIGNING INTERVENTIONS TO CHANNEL LOCAL CURRENCY GENERATIONS TO COMPENSATE SPECIFIC GROUPS TARGETED UNDER THE DFA, WHO MIGHT BE NEGATIVELY AFFECTED BY THE PROGRAM

REFORMS.)

9. MANAGEMENT/ASSESSMENT OF THE POLICY REFORM PROCESS. IT WAS CLARIFIED THAT GOS IMPLEMENTATION OF THE PASA WILL BE OFFICIALLY MANAGED BY THE FINANCE MINISTRY. GIVEN OUR LONG ASSOCIATION AND PLANNED NEW INVESTMENT IN ISRA, IS THERE A USEFUL ROLE FOR ISRA IN ANALYZING THE EFFECTS OF REFORMS AS THEY ARE IMPLEMENTED? COULD SOME OF THE ISRA ANALYTICAL CAPACITY DEVELOPED WITH MSU SUPPORT BE USEFULLY APPLIED WITH REGARD TO THIS PROGRAM? COULD ISRA ITSELF BECOME A STRONGER CONSTITUENCY FOR REFORM BY ITS BEING INVOLVED IN THE PROCESS? THE POTENTIAL ISRA-PASA CONNECTION SHOULD BE EXAMINED DURING PAAD DESIGN.

10. COUNTRY CONTRIBUTION REQUIREMENT. THE PAIP DOES NOT

INCLUDE A DISCUSSION OF THE COUNTRY'S CONTRIBUTION TO THE PROGRAM. THE REPEAL OF FAA SECTION 121, COUPLED WITH THE NEW DFA LEGISLATION WHICH NOTES THAT ANY REFERENCE IN ANY LAW TO CHAPTER 1 OF THE FAA (INCLUDING REFERENCES TO SECTIONS 103 THROUGH 106) IS TO BE DEEMED TO BE A REFERENCE TO THE DFA, RESULT IN THE REQUIREMENT FOR A.I.D. MISSIONS IN SAHEL COUNTRIES TO ADDRESS FAA SECTION 110. ALTHOUGH THE ECONOMIC ANALYSIS MENTIONS THAT SENEGAL IS CONSIDERED BY THE WORLD BANK TO BE A MIDDLE INCOME COUNTRY, WE BELIEVE A WAIVER OF THE REQUIREMENTS OF SECTION 110 MAY BE CONSIDERED. A.I.D. HANDBOOK 3, CHAPTER 2, APPENDIX 2G ("RECIPIENT COUNTRY CONTRIBUTION TO THE ACTIVITY"), NOW INCLUDES AS ELIGIBLE FOR WAIVER CONSIDERATION THOSE COUNTRIES ON THE DEVELOPMENT ASSISTANCE COMMITTEE ("DAC") LIST OF "LOW INCOME

COUNTRIES." INASMUCH AS SENEGAL IS INCLUDED ON THE MOST RECENT DAC LIST AVAILABLE TO AID/W (SEE TABLE 64 OF THE 1990 DAC "DEVELOPMENT CO-OPERATION" REPORT), THE MISSION MAY REQUEST A WAIVER OF THE COUNTRY CONTRIBUTION REQUIREMENT. FOR FURTHER GUIDANCE, SEE APPENDIX 2G REFERENCED ABOVE.

11. BUMPERS/LAUTENBERG. THIS LEGISLATION HAS CERTAIN PROHIBITIONS ON FUNDING AGRICULTURAL ASSISTANCE FOR CROPS THAT COMPETE WITH U.S. EXPORTS. THE PAAD WILL HAVE TO INCLUDE A SPECIFIC SECTION TO ADDRESS THE APPLICABILITY OF BUMPERS/LAUTENBERG.

12. PAAD REVIEW. THE ECPR DECIDED THAT THE PROGRAM PAAD WILL BE REVIEWED IN AID/W. GIVEN OBLIGATION TIMING CONSIDERATIONS, AID/W AND MISSION WILL WORK ESPECIALLY CLOSELY TO REACH RESOLUTION OF PROGRAM ISSUES DURING DESIGN PROCESS. THIS MAY SHORTEN PAAD REVIEW PROCESS MARKEDLY.

EAGLEBURGER

Annex 6

Agriculture Sector Ananysis

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I. Agriculture in the Economy

Growth in primary sector gross domestic product has passed through four distinct periods:

I. (1960-1966): Seven years of stable growth in a range of 2.5 to 4.5 percent per year, and marked by good weather, the initiation of the 20 year "Programme Agricole" with an extensive cooperative system, almost exclusively concentrated on providing credit and inputs to the peanut producing regions and peanut marketing, and preferential treatment for exports (especially peanuts) by the French.

II. (1967-1980): Thirteen years of widely fluctuating output and building sector deficits begining with the loss of the French preferential treatment for groundnut exports in 1967 and with the termination of the "Programme Agricole" in 1980.

III. (1981-1983): Transitory stage and the beginning of stabilization - crisis.

IV. (1984-1989): Stabilization and structural adjustment period with the New Agricultural Policy (NAP) formulated and initiated in 1984; the Cereals Policy (CP) formulated in 1986; state disengagement; weather returned to near "normal"; an emphasis was placed on privatization and elimination of subsidies and price controls; sectoral growth began to recover.

V. Present: In 1989 the GOS and four of the major donors began discussions which were expected to lead to a structural adjustment loan for agriculture ("Programme d'Adjutement Structurel Agricole" - PASA). The government of Senegal produced its newest statement of development policy (DPDA - "Declaration de la Politique de Developpement Agricole"). This statement, combined with the conditionality under SAL-IV, will complete the privatization/liberalization process. The DPDA and the donor/GOS dialogue will be discussed in more detail later.

In general, the primary sector is characterized by extreme output variation, especially during the 1970s and 1980s. The reasons have already been enumerated: bad weather, variable world prices and policy and program implementation.

The larger part of GDP generated in the primary sector comes from crop based agriculture and livestock; the two together accounted for over 75 percent of primary sector GDP in 1989. The shares of the four sub-sectors in the primary sector (agriculture, livestock, fishing and forestry) vary considerably over time, depending on rainfall and crop production.

The agriculture sub-sector has essentially stagnated. In 1989, real GDP in this sub-sector was only slightly above the

level in 1977, and this has been accompanied by a shift in relative importance from crops to livestock and fisheries. Yet, two-thirds of Senegal's active population is rural and 60 percent of them list agriculture (in the broad sense) as their profession. Clearly, the sector has some basic constraints yet to be resolved.

There has been a general decline in productivity in both food and cash crops. Increasing demands have and will continue to be made on limited natural resources and a land base which does not permit area expansion as "solution" in large parts of the nation. Soil productivity is a major issue.

Between 1976 and 1988, the nation's population grew at 2.7 percent per year (2.1% for the rural population and 3.8% for the urban population). About 40 percent of the total population is urban and by the year 2000 the urban population will account for 44 percent of the total. There is no expectation that Senegal can achieve food self-sufficiency; to the contrary, the day is rapidly approaching when Senegal's resources will not be able to support its rural population, even in good years.

The portion of the country with the majority of the rural population (the Groundnut Basin) has little room for crop land expansion and highly variable rainfall and, thus, highly variable production. Virtually all of this land is extremely susceptible to erosion, with little actual investment targeted to resource management.

An investment program aimed at eliminating the major constraints has been targeted to support policies established by the 1984 New Agricultural Policy, the 1986 Cereals Policy and four World Bank Structural Adjustment Loans.

The most recent policy statements (SAL IV) and the dialogue on an agricultural sector adjustment program (PASA) will reorient the investment program to some degree. These statements and discussions are aimed at extending the disengagement begun under the NAP, particularly the privatization of SONACOS (the groundnut processing parastatal), and SAED's rice mills. They are also aimed at a more liberal and more flexible pricing system (completely liberalized local rice pricing system, and more flexible cotton and groundnut prices) and at completing the elimination of input subsidies (now processed through SODEFITEX, the cotton parastatal).

All of these programs also push for better resource management with more local and personal control over resources. All of these measures, some already negotiated (SAL IV) and some still under discussion (PASA), are aimed at reorienting the investment program toward where the rural population lives and toward its most serious problems.

II. Population, Land and Water Resources

2-1 Land Classification: Use and Potential

A classification of Senegal's 19.7 million hectares according to use and/or potential use puts almost 81 percent of the land in parks, reserves, classified and unclassified forests, and other, non-agricultural, uses. Only about 19 percent (3.8 million hectares) of the total land mass is classified as arable. About 62 percent of the arable area is cultivated each year. The use or potential use of the arable land is largely for rainfed agriculture (91% of the total) with about 8 percent suitable for irrigation. About 30,000 hectares of the 300,000 hectares classified as suitable for irrigation have been developed and about 23,000 hectares are actually used (in the Senegal River Valley) and about 62 percent of the total rainfed potential is planted. In fact, counting fallow land as active use, 79 percent of the total rainfed potential is being used. Data on the use of recessional land are not collected, but a rough estimate, used by the National Food Needs Committee, is 25,000 hectares.

Senegal: Land Classification by Use and Potential

Land Classification	Total Area (Mil. ha.)	Percent Total
Arable	3.8	19.3%
National Parks and reserves	1.3	6.6%
Other (Shrub-limited use)	4.9	24.9%
Forest unclassified	7.0	35.5%
Other	2.7	13.7%
Total	19.7	100.0%
Arable	3.800	100.0%
Suitable for irrigation	0.300	7.9%
Rainfed	3.460	91.1%
Recessional	.040	1.0%
Total Cultivated Area *	3.009	79.3%
Rainfed (cultivated)	2.146	62.0%
(fallow reserve)	.840	24.3%
Irrigated	.023	7.7%

Source: National Cereals Plan, 1986, page 16.
*1985-89 average in major crops. The percentages are percent of potential for this type of land.

Fallow reserve is calculated according to information in the 1986 National Cereals Plan (1.4 million hectares, including marginal lands with 560,000 hectares of "good" fallow). Area planted has increased and fallow has decreased.

2-2 Forestry, Forest and Lan Reserves

Domestic fuelwood demand constitutes the major use of Senegal's forest resources. It provides virtually 100 percent of all energy used by rural households and 89 percent of all energy

used by urban households, which use over 50 percent of all wood consumed in Senegal. Given the high rate of growth in the urban population, and the urban population's importance as a wood consumer, growth in fuelwood consumption is expected to equal the urban population growth rate of 3.8%/year. It is clear that considerable demands are and will continue to be made on Senegal's forestry resources.

An overall reduction of 17.8 percent in available forest land is expected by the year 2000, with the majority of the reduction in the fragile shrub dominated lands. Projections of wood use to the year 2016 indicate that Senegal will be deficit in nearly all categories of wood products; deficit to the degree that it will have to import, for fuelwood alone, 2.3 billion m^3 of wood. Forest wood output varies by climatic zone and forest type, but an average of between one-half and one m^3 per hectare indicates a deficit equivalent to the output from between 2.5 and 5 million hectares.

The reduction in forest area, since it is primarily from grassland sources, cannot be expected to contribute to the amount of land available for crop based agriculture, nor does it portend any benefit for grazing. For livestock in particular the removal of shrubs and trees also removes a source of fodder during the long dry season. An additional, and significant, burden is also placed on rural families (especially women and children) because of the increasing amount of time needed to search for firewood. It is reported that women and children now spend up to 3 hours/day collecting firewood. Increasing pressure from human and animal populations, especially in the Groundnut Basin, suggests that the problem will only increase.

While forestry and agro-forestry are clearly important considerations for long-term development, shorter term strategies are necessary.

2-3 Agricultural Potential

The sets of information available emphasize, particularly, the relatively small supply of arable land in each region and the even smaller amount of unused arable land, especially in the main part of the groundnut basin (Thies, Diourbel and Sine-Saloum - Kaolack and Fatick). There is a large and broadly distributed amount of land presently farmed which, on the basis of soil characteristics (i.e. not considering rainfall levels), is classified as "poor potential". A large part of the unused potential is in forest or grassland reserves. The majority of the land available for expansion is in the River Valley, Casamance and Tambacounda Regions.

The Groundnut Basin (Louga, Thies, Diourbel, Fatick and Kaolack) has very little land available for expansion and a large

and growing rural population. Any expansion would mean use of the fallow reserve, which under any circumstances should not (and in the intermediate-term probably cannot) be brought into production.

Of the four regions which do have some land available, Louga should be discounted because of rainfall shortages and sub-soil water salinization problems. Its irrigation potential is limited; in this region, irrigation is expensive to develop and unlikely to be realized in the near future.

Another issue, in addition to the amount of arable land, is land quality. Senegal, in fact, has no "high" quality land and, if the vegetative cover is removed, much of the "good" land is susceptible to erosion.

Continuous cultivation (which includes removal of all crop material) in the more limited rainfall zones of the Groundnut Basin and generally anyplace where groundnuts are grown (because the straw has a substantial value as livestock feed), has led to a significant decline in groundnut yields.

2-4 Population Distribution and Land Use

Like many developing nations, Senegal has experienced high population growth accompanied by increasing urbanization. In 1976 about 34 percent of the national population lived in urban areas and by 1988 (the last population census) 39 percent of the population lived in urban centers. The urban population is concentrated in a few major cities. About 22 percent of the Senegal's people live in Dakar, which had a population density of 2,728 people/km2 in 1988. In 1988 the Dakar area accounted for 54 percent of the total urban population.

Considered together, the Thies and Dakar regions account for 66 percent of all urban and 35 percent of the total population. Outside these regions (which also dominate the trade and industrial sectors) the population is unevenly distributed, varying between 142 persons/km^2 in Diourbel (9% of the population and 2.2% of land area) and 6 persons/km^2 in Tambacounda (30% of the land area and 5.6% of the population). Overall, including Dakar, Senegal has 35 persons per Km^2.

Senegal's population increased at 2.7 percent per year between 1976 and 1988 (rural growth was 2.07% and urban growth was 3.83%). At this rate of growth Senegal's population will total 9.6 million by the year 2000 with nearly 44 percent of the population living in urban areas (25% in Dakar). The pressure which this has, and will continue to exert, on Senegal's land and water resources is enormous. To provide a perspective, at current technology, land under cultivation would have to increase 30 percent in the next ten years to provide food and income to

Senegal's population. Since Senegal presently cultivates 62 percent of its arable land, farmers would have to bring all possible land into use, just to maintain the status quo.

In view of the increasing population pressure one would expect a continuous expansion in cropped area. However, much of this expected expansion has not occurred because the land/water population distribution pattern in Senegal limits the country's ability to meet near and intermediate-term food and cash crop needs by simply expanding area planted.

The average area planted over the ten years between 1980 and 1989 was 3.6 percent below the 1970-79 average, with cash crop areas down 16.3 percent and food crop areas up by 8.7 percent (an average increase of about 0.8% per year). Since the rural population has been increasing at about 2.1 percent per year, the consequences are clear - the food crop area planted per rural person will have decreased by about 1.2 percent per year, with, in the absence of increases in productivity, an attendant decline in food production and income generation. There is a wide variation in population density, in broad terms the population/land relationship.

Thus, while on an aggregate basis there has been a substitution from land in cash producing crops to food crops, on a per capita basis (i.e. per active agricultural person) there has been a decline in areas planted to both types of crops. And, this is true of all of the regions under discussion, except Tambacounda. It is clearly <u>not</u> reasonable that crop based agriculture should be expected to generate enough output to support the entire population of the nation.

2-5 Water Resources and Development Potential

Some areas in Senegal, especially those areas north of Dakar and a large part of the area north of Gambia, face a highly variable climate which places serious restrictions on the kinds of crops which can be grown. There are three sources of water: the Senegal River (75%), sub-surface (10%) and surface (15%). Rainfall and its distribution during the growing season remains the primary determining factor in Senegalese agriculture. It establishes the limits to cultivation as well as defining the potentials.

There are essentially three land potential zones: the Senegal River Valley with considerable potential for irrigation; the groundnut basin with very little potential for expansion; and South and Eastern Senegal, with considerable potential for expanded rainfed agriculture. Rainfall and its distribution further emphasizes these constraints and potentials.

III. <u>Crop Production</u>

3-1 Crop Production: Location and Importance

In terms of area planted and gross production, millet/sorghum and groundnuts are the most important crops produced in Senegal; over the last five years (1988/93) these crops accounted for 86% of total area planted. Millet/sorghum is by far the most important in terms of area planted (46%), followed by groundnuts for oil (40%). Among the food crops, after millet, maize accounts for 5% of planted area, followed by paddy (4%) AND cowpeas (3%). Cotton accounts for 2% of area planted and manioc and confectionery groundnuts each account for 1% of area.

Regionally, Kaolack accounts for the largest portion of area planted (almost 28%), Fatick, Diourbel, Thies, Louga and Kolda each account for between 11 and 12 percent, farmers in Tambacounda plant 9.5% of the national total and the St. Louis region accounts for the smallest portion (2%).

3-2 Available Technology and Its Use

The availability and the eventual use of a technology depends on environmental, economic, institutional, and political elements. In Senegal all of these factors combine to generate a system which generally uses low to intermediate technology.

Crop Type	Technology
Rainfed crops	low to medium
Irrigated crops	medium to high
Cash crops	medium to high
Non-irrigated crops	
North Senegal	low
Central Senegal	low to medium
South Senegal	medium to high

Although it may be somewhat over-simplified, a generalization of technology use can be made: low technology in areas with low rainfall and poorer soils; medium and high technology in areas with higher rainfall and relatively better soil. Overall, however, the level of technology employed by Senegalese farmers can be classed as low to medium. It should be noted, however, that in most cases (especially the Groundnut Basin) this includes the use of animal traction.

Farmers attitudes toward resource management technologies are less well known.

A fairly large number of technologies have been developed

and most of them can make significant contributions to productivity. The large number of technologies available for rice in the River Valley reflects the high priority that has been placed on that region and crop.

Equally as encouraging, given farmer reluctance to purchase fertilizer, is that water management, erosion control and agro-forestry can also contribute to large productivity increases (in a range of 40 to 180 percent). These "technologies" have the advantage that they do not require large amounts of cash input. They have the disadvantage that they take time and labor to implement and time for the benefits to accrue (see Technology inventory sponsored by the Natural Resource Management Based-Research/NRMBAR project).

The Senegal River Valley

Driven by a national policy to achieve maximum food self-sufficiency and the water control made possible by the Manantali Dam, the region has been accorded the highest development priority. Accordingly, irrigation system development in the St. Louis Region has received the largest share of Senegal's investment in the agricultural sector.

The development of irrigated agriculture in the Valley has opened the region to a potentially wide range of crops and introduced the possibility for as many as three cropping cycles per year: the rainy season (hivernage), a "cold" season, and a "hot" season. For a variety of reasons (largely labor, credit, land preparation and water management problems) cropping intensity is low. A goal of 1.3 - 1.5 was set, but it seldom exceeds even one.

Land preparation and harvest for non-irrigated crops conflicts with planting and/or harvesting of irrigated crops.

Water and labor management in the River Valley must be improved if double cropping is to become a standard practice, so the high fixed costs of the irrigation systems can be spread over a larger volume of land to reduce water costs.

Groundnut Basin

There is a general tendency for Groundnut Basin farmers to employ lower technology. The Northern Groundnut Basin has no advantage in groundnut production relative to the rest of the this region, although the returns to labor help to explain why farmers continue to try to produce. The highest potential for this region rests with cowpeas, which have serious insect related storage and production problems.

The Casamance and Southeastern Senegal

The Casamance (Ziguinchor and Kolda Regions) and Southeastern Senegal (central Tambacounda) provide an environment under which a wider variety of crops can be grown than in the Groundnut Basin. This part of Senegal contains most of the currently unused, arable land. The major disadvantages in these regions are distance (in the case of Tambacounda) and physical separation from the rest of the country (by Gambia for the Casamance).

The Niayes and Horticultural Crops

Vegetable production is concentrated in the River Valley (tomatoes and onions), in the Niayes (for a range of crops), and in the Casamance (mainly fruits). There are some fruit producing operations in Thies - mostly mangos for the Dakar market.

The main vegetable production periods are between February and June, with some production beginning in January and carrying into July and August. Senegal produces between 120 and 125 thousand metric tons of vegetables each year, with most of the production (71%) in the Niayes area. The Dakar/Thies portion of the Niayes accounts for over 60 percent of all vegetable production and account for the larger share of the production of all individual vegetables, except onions.

St. Louis and the Louga portion of the Niayes are the largest onion producing areas (almost 70% of the total). Production arrangements vary, depending on the eventual destination of the crop. Crops meant for export (green beans) are usually produced under contract and some tomato producers in the St. Louis Region receive assistance (credit, advice, inputs) from one of the tomato processing plantS. The others are sold on the open market, almost exclusively by women.

Onions, cabbage, and tomatoes are the most important crops (each accounts for about 18% of total vegetable output), followed by potatoes (10% of total production). The cost of producing tomatoes and onions in the Niayes is considerably higher than it is in the River Valley.

IV. Consumption, Marketing and Processing

The country has a serious, resource based, productivity problem. Unless steps are taken to improve soil and water use and to control population growth, the "problem" will soon exceed disaster proportions. But this is not the only issue. There is also a range of basic crop marketing (including trade), crop processing, food consumption, agricultural policy and institutional factors to be considered along with the resource questions.

Marketing and processing agricultural crops in Senegal can

be divided into four broad categories: food grains (rice, millet/sorghum, corn and cowpeas); fruits and vegetables; traditional cash crops (groundnuts and cotton); and 'special' cases (wheat, sugar). Each category has its own unique institutional and geographic potentials and constraints.

4-1 Farm Income

The gross real value of crop output varies widely from year to year for the usual reasons (climate, pests, crop cycles and prices). In addition to the annual variations, declining productivity and population pressure have contributed to a shift from cash to food crops, as well as to a reduction in the area planted (production) per farmer. The consequence has been stagnation in total output and a steady decline in the real value of marketed crops. In real terms, over the 1960/61 and 1989/90 crop years, the value of marketed crop output declined by 2.5 percent per year.

The real value of all output has tended to decline. The split between the value of crop output retained for home consumption and the value attributed to marketed output has shifted dramatically; in 1976/77 marketed output accounted for almost 68 percent of the total and in 1989/90 it accounted for only 40 percent of the total.

The drop in real cash income (from marketing crops) has obvious implications for farm family welfare because it seriously restricts their ability to purchase health, education and other services and suggests that investment in technology which requires cash input will be severely restricted.

Despite the declining share of cash crops in the value of all crop output, the primary source of crop based rural income is still groundnuts (about 46% of the total). And, as would be expected given its share in area planted, millet is the second largest (36%) - maize and paddy account for six and nine percent, respectively. In the aggregate, rainfed crops account for at least 95 percent of the value of all crop output.

The importance of crop production and marketing in total rural income differs, depending on the ecological zone and the type of rural community. In the more urbanized rural areas (market villages) and in the lower rainfall zones, income from sources other than crop production is obviously more important. In the middle Valley of the Senegal River, remittances and salary income account for at least 60 percent of the total.

Preliminary data from the ISRA/IFPRI farm surveys indicate that rainfed agriculture is the major source of revenue for both men and women throughout the Basin, as well as in parts of Southeast Senegal. Virtually 100 percent of the villages in all

10 zones of the study ranked rainfed agriculture as most important. The second most important revenue source for men was livestock and the third most important source was a mixture of "migration" and commerce. The second most important source of revenue for women was also livestock, but commerce was mentioned more often for women than for men.

4-2 Marketing Institutions

The GOS, under various donor supported programs (especially under several World Bank Structural Adjustment Loans), has started disengagement from commodity related production and marketing activities. However, despite this program, there is still a extensive legacy of State intervention in commodity marketing and processing.

With notable exceptions (cotton, groundnuts and rice), extensive State involvement in marketing and processing ended in 1980 when ONCAD was dissolved and especially in 1984, when SONAR was dissolved. The input marketing system was privatized in 1988 when a USAID financing fertilizer subsidy elimination program terminated (again with an exception - cotton). The local cereals marketing system was deregulated in 1988 (again with an exception - rice).

There are 11 major public institutions engaged in marketing and processing agricultural commodities and 7 principal private sector enterprises. The activities of the public institutions range from import and export monopolies (as in the case of CPSP for broken rice imports and SONACOS for groundnut product exports) to monopolies for processing and local wholesale distribution. The private institutions have a similar range of activities. CSS has a monopoly for sugar production, processing and imports and SENCHIM has a monopoly for compound fertilizer production, imports and phosphate exports. Most, but not all, of the private institutions enjoy some form of protection, either by import restrictions and/or by State controlled prices.

There are a large number of important "institutions", village and producer organizations, NGO's (Non-Governmental Organizations) and GIE's (Groupemment d'Interet Economique), playing an extremely important part in production and marketing. Since public sector institutions are deeply, if not exclusively, involved in marketing and processing local production of cash generating crops, these "crop systems" enjoy a certain isolation from world markets. In the past, when world markets where high, this has meant large windfall gains to the State. In recent years, due to attempts to maintain farm prices and because of marketing and processing inefficiencies, it has meant large and insupportable deficits.

The marketing campaigns are financed by bank "consortiums",

with a separate arrangement for each of the major commodities: groundnuts for oil (SONACOS/SONAGRAINES), edible groundnuts (NOVASEN), groundnut seeds (SONAGRAINES), rice purchases (SAED and SODAGRI), cowpeas (SODEVA-no longer active), and cotton (SODEFITEX). As indicated by the number of parastatals associated with the management of the marketing funds, the State is deeply involved in marketing most of the important agricultural commodities, except millet, sorghum and maize.

Since most of these "commodity systems" are also financially deficit, it is not surprising that sizable arrears have accumulated. In some cases, the repayment problem is linked to factors outside the control of the institutions concerned: CPSP, for example, is often not timely in paying SAED for its rice. CPSP, on the other hand has recently been required (by the IMF) to pay 5 billion FCFA to cover the SODEFITEX deficit. The system appears to be organized so as to absorb liquidity wherever it may exist. The use of CNCAS to provide the majority of the financing for the 1991/92 crop marketing season is a good example. In principle, CNCAS is a private, agricultural credit bank. By agreement with the donors supporting the banking sector reform, the State is to have no more than 25 percent ownership (the remainder is owned by cooperatives, etc.).

4-3 Food Crops

Although Senegal has a wide range of production possibilities and cropping systems, it is possible to characterize virtually all of Senegalese agriculture as a system dominated by extreme variability resulting from climatic and land resource constraints. It is also possible to characterize the interface between production and consumption as one of constant (sometimes critical) supply deficits.

a) Local and Imported Rice

Including wheat, Senegalese consume about 220 kg of cereals/person/year, and 200 kg/person/year excluding wheat. Converted to millet equivalent, consumption is about 200 kg/person including wheat, and 178 kg/person excluding wheat. In absolute terms, rice accounts for the largest portion of the national cereals-diet (95 kg) and millet/sorghum accounts for an additional 87 kg. The relative importance of the various food crops changes slightly when converted to consumable weights: millet is first (77 kg); rice second (62 kg); wheat and corn are about equal (14 kg); and cowpeas are last (3.5 kg);

Consumption patterns differ considerably, both urban/rural and by geographic location, primarily reflecting local production patterns and the availability of imported rice. Generally, as would be expected, millet is by far the most important grain in the rural areas, and rice is the most important in the urban

areas. There is also a substantial difference in regional consumption patterns. Rice is the major element in the cereal diet in the River Valley and in the Casamance, and millet is the major cereal in the groundnut basin. One of the things which has helped to stimulate interest in millet processing, as well as corn production, is the large weight of rice and wheat in the diet, especially in the urban diet; wheat consumption exceeds both millet and maize consumption in the urban diet and it exceeds maize consumption in the total (urban plus rural) diet and rice consumption is three to four times higher than any other cereal.

Per Capita Consumption - Major Grains
(Kg/year/person, 1988 estimate)

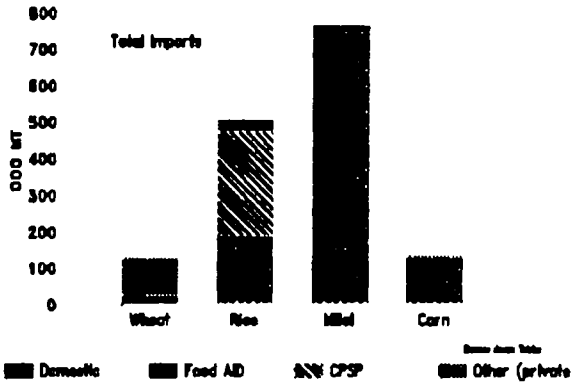
Food Crop	Per Capita (kg un-milled)		
	Urban	Rural	Total
Millet/Sgm	30.1	126.1	87.0
Maize	11.7	18.7	15.9
Paddy	140.2	63.5	94.7
Cowpeas	1.2	5.0	3.5
Wheat	45.4	4.5	20.0
Total	228.6	217.8	221.1
Excl. Wheat	183.2	213.4	201.1
Millet Equiv.			
Total	197.3	203.7	199.8
Excl. Wheat	147.6	198.9	178.0

Source: Annex IV.
Millet equivalent calculated using calory ratios.

Since the majority of the rice supply (85% in 1989) and all of the wheat is acquired from external sources, it is easy to understand why there has been such an emphasis on local cereals processing and rice pricing policy.

Rice impacts on the cereals marketing/processing system in two ways: via the price competition it represents for local cereals and via a set of price and marketing controls which have been established to "protect" local rice production. CPSP has a monopoly on broken grain rice imports as well as wholesale marketing of local production. CPSP collects a perequation on grain it imports, part of which is used to subsidize local production. CPSP sells the imported rice to local wholesalers at official prices. There are no particular conditions on these merchants, except that they must purchase at least 10 metric tons. The private sector may import intermediate and high quality rice, for which there is no fixed consumer price or (in principle) import restriction. Private importers must, however, obtain a license which is reviewed by CPSP before it is awarded. CPSP also imports high and intermediate quality rice. Since this rice is sold to wholesalers at a relatively low price, and since the private sector has no way of knowing what CPSP's import plan may be, this practice introduces considerable uncertainty.

Food Grains: Total Available by Source
(000 metric tons, average 1985-1989)



Before the 1989/90 season, first stage collection and processing of commercialized local production was under SAED control, which collected the rice and delivered it to the URIC and Delta 2000 mills. Starting with the 1989/90 crop farmers have been responsible for delivery to the mills - SAED was still paying the transport charges once the trucks arrived at the mill. Once processed, the rice becomes the property of CPSP, which pays SAED and organizes transport and distribution.

Overall, this system embodies a large subsidy. In 1989 the subsidy associated with local rice production and processing exceeded the CF (cost and freight) cost of imported rice (88 FCFA/kg subsidy vs 85 FCFA CF). International rice prices were higher than usual in 1989 so the perequation was <u>relatively</u> low at about 13 FCFA/kg - it therefore required the revenue from about 7 kg of imported rice to pay the subsidy on the rice sold to CPSP. Under this system (at 1989 prices) the NPA goal of substituting local rice production for imported rice would collapse at about 53,000 tons of marketed local rice. Fortunately, CPSP purchases of local rice have not exceeded 20,000 tons, so the perequation has been "safe" (about 7 billion FCFA in 1989).

The consequences for any private sector engagement in the rice marketing and processing system are obvious. There is no way the private sector could engage in "industrial" type milling under the present regime. Some combination of higher consumer and/or lower farm prices and/or increased efficiency would have

<u>Cost/Revenue Comparison for Imported and Local Rice</u>
(FCFA/Kg)

Imported by CPSP		Local Paddy Purchased by SAED and CPSP	
Cost, Freight	85.3	85.0	Farm Price
Insurance	1.3	1.7	Drying Loss
Unloading (ship)	3.5	10.8	Collection
Pallets	.6	14.8	Milling
Loading, Transport	1.7	-2.1	Value of by-product
CPSP Overhead	14.6		
		110.2	Total at Mill (Paddy)
		164.3	Total at Mill (rice)
		14.4	Mill margin
		178.7	CPSP Purchase Price
		1.7	Loading + Transport
Total Warehouse	107.0	180.4	Total at St-Louis
Wholesale Dakar	120.2	122.6	Wholesale St-Louis
Perequation	13.2	57.8	Subsidy
Required to support the local rice subsidy	7.0/kg	30.6	Irrigation subsidy
		88.4	Total subsidy

to occur to eliminate the 58 FCFA subsidy (88 FCFA if the water subsidy is included). The boundaries within which a completely privatized local rice market would have to operate can be established by comparing the farmgate "economic" price of rice (35 FCFA in 1989) to production costs.

b) Local Cereals

There is relatively little that can be said about the marketed surplus of cereal grains, except that any program to encourage marketing and processing of local cereals for urban consumption faces this as one of the major constraints. In the 1987 study by Goetz, about 1/3 of the households were net cereals purchasers, 1/3 about even and 1/3 net sellers (for sellers the net transaction was about 7% of production) and the 1989 ISRA/IFPRI data have a similar pattern (2 to 7% of the value of sales). Obviously, most of what is sold will not enter commercial channels, but will be exchanged in small transactions between and within farm families.

There is a potential for increased marketing but before this can happen four things are necessary: increased marketable surplus, storage facilities, retail markets, and market information.

Major steps have been taken to facilitate the development of

the appropriate environment: local cereals marketing (except rice) was completely deregulated in 1988; CSA has instituted a market information system; and on-farm storage and local cereal processing have been a major focus for several donors, NGO's, PVO's and the GOS. While the storage and processing programs have been aimed at stabilizing local food supplies and providing labor saving equipment for harvesting and processing, they could also eventually help to transform local cereals markets.

V. Agricultural Institutions

5-1 Institutional Organization of the Sector

Economic crisis and a new development philosophy have combined to redefine the role of the state in the agricultural sector during the last decade. The state's "dirigiste" policies, gave rise to a panoply of state organs charged with managing the economy and engineering the process of developmental from above. Drought and economic crisis of the late 1970s combined with growing donor disenchantment with Senegal's developmental performance converged to produce a new definition of the state's role which was articulated in the New Agricultural Policy (1984).

The new development philosophy called for "disengagement" (the withdrawal of the state from its dominant role in a wide range of commercial, organizational and productive functions) and "deflation" (a reduction in the size of the public work force). Although these policies have met significant difficulties and resistance at many levels, the state's functions have diminished markedly in the last six years and extensive reorganization of public institutions has occurred.

The disengagement of the state has been most extensive in the case of the Regional Development Authorities that were created in the 1960s and that flourished in the 1970s; they were broadly charged with many facets of rural development - extension, input distribution, marketing, credit delivery, farmer organizations and frequently social functions (literacy training, management of rural development projects). All RDAs except SODEFITEX (Senegal Oriental) have shrunk significantly and some have been eliminated.

SODEVA (Peanut Basin) is a shadow of its former self, reduced from a high of 2,000 employees to a current level of 300.

SODAGRI, the RDA located in the Upper Casamance, has diminished as well though without radical changes in its mission. If the rice sector is liberalized in accordance with the current policy dialogue, its rice processing and marketing functions will be privatized.

SODEFITEX continues to operate in the old mold but proposed

policy reforms could radically alter its financial capacity to sustain the broad range of functions it performs.

As the RDAs have withdrawn from their multi-functional rural development role, their responsibility for extension has been reconfirmed. In fact disengagement has meant that the RDAs have been evolving into extension services. But even this role is not secure. A large new initiative funded by the World Bank will create a revitalized national extension service, assigned to the traditional line ministries (Directorate of Agriculture, MOA, and Directorate of Livestock), that will be responsible for extension in all ten regions of the country. They are complemented by the RDAs who are assigned a relatively minor role in the initial years of the initiative.

The RDAs have been greatly scaled back and could disappear if current trends continue.

This pattern -- "disengagement", "deflation" and reorganization -- is characteristic in part or whole of some of the principal functions of the state as we shall see below:

-Agricultural policy analysis and formulation functions have been consolidated and reassigned to a new unit in MOA and the underpinning statistical services were also reorganized.

-The national agricultural research system is in the midst of an ambitious reform following a reduction of over 35% of its workforce. In this case, the self-initiated reform is evidence of institutional vitality and may well lay the base for a viable, self-sustaining system.

-The extension institutions and functions are in great flux. The RDAs have been reorganized, functions are being revised and the traditional services of the Ministries of Agriculture are being revitalized and retasked with extension functions supported by significant World Bank resources.

-Farmer organizations too are in transition; state-sponsored cooperatives are in decline, RDA-sponsored farmer organizations are vulnerable to the same harsh fortunes that have befallen their institutional patrons. New institutional reforms, rural business associations (GIEs) and rural community development associations have proliferated as state institutions have withdrawn from the field. But these organizations face some of the same challenges as their state sponsored predecessors -- unskilled membership and weak organizations facing a risky and often hostile external environment characteristic of Sahelian agriculture.

The challenge of the 1990s is to build more viable institutions to perform these vital functions which serve the

interests of rural communities.

5-2 Agricultural Policy Analysis and Formulation

Institutional capacity to carry out policy-relevant analysis and to formulate and execute informed, coherent development policy for the sector requires at a minimum current and accurate statistics and data, sound analytical capability, functional linkages between policy-relevant research and policy makers, a focused agenda, and the political capacity to implement reforms. Notwithstanding nearly a decade of policy reform characterized by significant attention and resources from the major donors and far-reaching reforms by the government, little institutional capacity has been developed to improve sectoral policy formulation, although significant capacity to do empirical, policy-relevant research has been created. It is unfortunately seriously underutilized.

The capacity to conduct sectoral policy analysis in MOA is very limited. The Division of Agricultural Statistics in the Direction of Agriculture which occasionally undertook surveys and report on such things as peanut seed holdings or food availability. In 1990, MOA set up as Agricultural Policy Unit (UPA) with support from the World Bank. This unit effectively usurped any mandate the Statistics Division had for policy analysis and concentrated extremely limited ministerial resources in one place.

In fact, this represents an effort to fill an institutional void; nowhere in the Ministry of Agriculture nor other ministries for that matter, is there any real capacity to do policy analysis.

The Bank project seeks to endow the Agricultural Policy Unit with three mandates and to institutionalize these functions in the Ministry of Agriculture.

- <u>Policy Formulation</u>: Price policy, input policy, respective functions of the public and private sector, subsectoral public investment priorities, etc.

- <u>Project Preparation and Appraisal</u>: Appraisal and consistency checking of investment proposals.

- <u>Performance Monitoring</u>: Physical and financial monitoring of public agencies and projects engaged in rural development.

Even this modest analytical capacity has not yet been made fully operational. Under this four-year effort, the World Bank is financing various materials and support services to develop long-term institutional capacity and to defray operating costs

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during the start-up period. This includes: 1) short-term technical assistance to the Policy Analysis Unit upon demand from a university or external institution; 2) short-term training and up to three post-graduate training programs; 3) equipment including vehicles and computers; 4) equipment maintenance and; 5) travel costs. This institution-building effort is still in its early stages; it remains to be seen what durable impact it will have although there are some hopeful signs. The PASA is the most relevant example representing the largest (in terms of donor financing) and most far-reaching sector policy reforms since the New Agricultural Policy in 1984. Although the government's policy formulation has been slow and frequently short of the mark, its performance represents progress over earlier efforts. Furthermore, MOA is not only engaged in the policy formation process but has been a principal interlocutor in the dialogue with donors. The Policy Analysis Unit has been the focal point for the staff work and technical level contact with the donors. Previously the Presidency and the Ministries of Finance and Planning monopolized the process, leaving the technical ministries to implement policies they had not participated in shaping and in which "ownership" and technical input was low. This changed very much given MOA's substantive role in the PASA process.

The Policy Analysis Unit represents the nascent capacity to formulate analytically based policy. Its policy analysis division may ultimately develop the capacity to address questions posed by the Minister, interpret studies and research findings in light of current policy issues, commission studies, formulate policy options based on their own analysis and the interpretation of others', etc. Its institutional evolution will depend on the demands that are made on it and the support it receives.

5-3 Agricultural Research

ISRA developed a strategic plan setting forth its research priorities and programs over the five year period 1989-1993 with 32 research programs covering eight agro-ecological zones and involves crops, livestock, forestry, fisheries, farming systems and natural resource management research. These are complemented by 13 national programs. While the plan has much merit in its effort to deal with national development priorities and set research priorities, it has been overtaken by financial crisis and domestic political pressure for reform. ISRA has responded by formulating a broad, ambitious set of reforms covering research programs, organizational structure, management, finances and personnel. A drastic reduction in the number of research programs is proposed (from 62 to 30) with much of the consolidation affecting the departments of crops and agrarian research.

ISRA has an extensive network of research centers (7) and

stations (7), plus various relatively unimproved sites where trials and demonstrations are carried out. This is an asset in terms of the broad range of ISRA's research mandate (crops, livestock, forestry, fisheries) and the great diversity in agroecological production zones, but recurrent costs of operation and management requirements are high.

The implications of this analysis are that ISRA must find additional ways to cut costs and improve efficiency. More than research program consolidation may be necessary to reduce costs to available resource levels. Issues of research program size and priorities need to be revisited. Greater flexibility and discretion are needed in determining the things for which funding can be used. This includes the government's restrictions between personnel and "equipment" line items and donors' restrictions on financing indirect costs which are a significant and real part of total research program costs. And of course, financial management will have to be strengthened to insure whatever resources are available and priorities set, that the resources are allocated accordingly.

ISRA maintains scientific contacts with a large number of international, regional and national research organizations and universities. It cooperates with 11 of the 13 International Agricultural Research Centers (IARCs) and participates in many networks including the one recently organized with French Support (CORAF) and as well as SAFGRAD. It maintains extensive relations with CIRAD, the French research services for international development, participates in three AID funded CRSPs (Collaborative Research Support Programs) involving cowpeas, peanuts and sorghum/millet, and has worked closely with Michigan State University under USAID financing since 1982.

Thus, ISRA has extensive contacts with the external research community, perhaps too many. The productivity of these relationships is variable across entities and time, but generally there is need to improve the quality and productivity of the most important ones.

From the foregoing analysis, we may conclude that ISRA has the potential to become a viable, productive national agricultural research system. It possesses important assets that make this possible including: 1) a sufficiently large, diverse and well-trained scientific staff relative to its research mandate; 2) a well-established research program which addresses the principal commodities in the major ecological zones.

5-4 Agricultural Extension

It is a fact that technologies exist in Senegal that could improve agricultural and animal production, but constraints arise in the availability of information at the farm level and in the

evaluation of proposed technologies versus the dynamics of farmer adoption and risk assessment.

A discussion of agriculture extension in Senegal can be found in Annex 7.a.5, on the Ministry of Agriculture.

5-5 Farmer Organizations

Efforts to develop farmer organizations span nearly a century. The state, donors and farmers themselves have viewed such organizations as potentially important vehicles for advancing their causes and as a necessary requirement for working with a dispersed, diverse, illiterate and impoverished peasantry. Four distinct organizational forms have evolved since Independence -- cooperatives, state-sponsored producer groups, "Groupements d'Intérêt Economique" (rural business associations, OF GIEs) and peasant-based associations.

From its inception, the post-colonial cooperative movement has been employed as an instrument of the state, created, supported and directed to advance public development objectives. Organized in 1960 and reformed in 1983 as part of the New Agricultural Policy, the modern history of cooperatives is intimately linked to the peanut sector which is the foundation of the rural economy. As such, cooperatives have served as vehicles for agricultural credit, input distribution and marketing agricultural production and more broadly for taxing agriculture and rendering patronage to the powerful and influential.

This watershed reform, promoted by the donors and embraced by the Government in 1984, was ostensibly a radical break with the past. Legislation in 1983 provided for the reorganization of the cooperative movement to enable it to assume these reform-mandated functions. A six-tier hierarchical structure was created with 4,500 "sections villageoises" at the base representing the 13,000 villages in Senegal; a national federation, (the "Union Nationale de Coopératives Agricoles - UNCA") at the top; and four intermediary levels corresponding to the administrative units of region, department, "arrondissement," and "communauté rurale." The "sections villageoises" are characterized by: 1) geographic organization -- each "section villageoise" represents one or more villages depending on the size of the population; 2) membership -- which consists of all village residents irrespective of gender or ethnicity; 3) function -- the cooperative is multifunctional (credit, input distribution, marketing); and 4) a multisectoral organization, i.e., "sections villageoises" may have units engaged in agriculture, livestock, forestry, fishing or artisanal crafts. With the collapse of ONCAD in 1980, responsibility for cooperative development and support was transferred to the Ministry of Rural Development and a new Directorate of Cooperative Action was established.

The UNCA has a special relationship with the agricultural bank, CNCAS. It owns 10,000 shares and has a representative on the bank's board of directors. "Sections villageoises" are eligible clients who may secure credit for purchasing peanut seed, fertilizer and pesticides. Unfortunately, repayment rates have been poor and CNCAS has responded by tightening lending conditions (peanut seed financing limited to 65% and fertilizer to 85% of purchase costs) and cutting off cooperatives with unpaid arrears.

After more than 80 years, the state-sponsored cooperative movement is moribund, marginalized and discredited.

Outside the Peanut Basin, an alternative form of farmers' organization took shape in the 1970s and 1980s, sponsored by the regional development authorities and large, donor-funded regional projects. As we have seen, notwithstanding its national mandate, the state's cooperative development efforts were concentrated largely on the peanut sector and the Peanut Basin. In tacit acknowledgement of the marginal relevance and capacity of the cooperative structure outside the Peanut Basin, the parastatals and donors sponsored their own farmer organizations, frequently charging them with the same kind of functions that were assigned to cooperatives -- input distribution, credit, commodity marketing, extension, etc. SAED organized Producer Groups (Groupements des Producteurs) around rice production; SODEFITEX sponsored grassroots, producer associations (Association de Base des Producteurs) to promote first cotton and later corn production and marketing (1800 ABP's had been organized by 1988) and USAID and the French financed regional development projects in the Lower and Middle Casamance which sponsored their own farmer organizations to facilitate the execution of project-financed activities.

These efforts at farmer organization challenged the cooperative movement by effectively usurping its members and functions, but accepted the basic paradigm. To some extent, these efforts were more successful, at least for a time. They enjoyed a coherence in purpose, geographic focus and often a "captive market" for a specific commodity that made it easier to both organize and "tax" their membership (e.g., collect payment for inputs and services). SODEFITEX is the most durable and viable of the examples. Its "Associations de Base des Producteurs" continue to distribute inputs, facilitate access to credit from CNCAS, provide a marketing structure for cotton and offer the most effective extension services in the country. It also has moved to strengthen the associations themselves through literacy training and assistance with organizational and management functions and skills.

GIEs (Economic Interest Groups) are an institutional innovation born of the New Agricultural Policy (NPA) in 1984.

The GIEs were established to complement the "reformed" cooperatives and to serve as a vehicle for advancing some of the policy's major objectives: the withdrawal of the state from commercial functions, the "responsabilisation" of farmers (which philosophically seemed to mean "empowering" the peasantry to take control over their economic and social development), and privatization of state owned enterprises. GIEs offer a form of organization which relies on participants' initiative and involves minimal state intervention.

Another distinctive and increasingly significant form of peasant organization is represented by the "mouvement associatif" consisting of village-based organizations, which have formed multi-village associations; these associations have in turn federated themselves to become the National Federation of Non-Governmental Organizations of Senegal (FONGS). The "mouvement associatif" is a grassroots phenomenon organized and directed by villagers and their leaders. While some village organizations and many multi-village associations have received assistance from external sources, they reflect indigenous initiatives and are not the creation of an external force (i.e., the state, donors, etc.)

This movement was born in the 1970s and expanded rapidly in the 1980s following the introduction of the NPA and a correspondant cutting back of GOS services. It includes a variety of associations -- ASESCAW in the Fleuve; Inter-Entente de Bamba Thialène and GADEC in Tambacounda; Entente de Kabiline, CADEF and AJAC in the Casamance; ADAK and ADAF in Kaolack and Fatick. The national level organization, FONGS, was registered as a recognized legal entity in 1978. Although FONGS membership is basically rural, the associations have broad, multi-purpose objectives; as such they might better be thought of as community development organizations than farmer organizations. Today FONGS consists of 24 multi-village associations located throughout Senegal and representing 100,000 members.

Efforts by the state to pursue development objectives which utilize farmer organizations as a vehicle for carrying on commercial functions have largely failed as have similar top-down efforts by NGOs. Both state-sponsored cooperatives and producer associations suffered from paternalism which dictated goals, functions and even production technologies. These institutions were organized from the top down; they never developed a legitimate constituency. Farmer participation was a function of the benefits derived from association membership. These benefits were unreliable and frequently marginal. The farmer organizations were typically assigned functions that frequently exceeded their managerial and financial capacity. The organizations themselves were never provided the means to grow and mature. The creation of GIEs acknowledged the detrimental consequences of paternalistic development models by reducing

state control and direction. This institutional innovation has flourished, springing up from existing institutions, attracted by the potential benefits of access to credit. However, it suffers from some of the same liabilities of existing and early forms of peasant organizations: members are illiterate and lack skills and experience in organizational and business management; furthermore there are no resources available for strengthening the GIEs. Nevertheless, GIEs have proven to be an important institutional innovation with potential to play a useful role in providing agribusiness services to producers.

In the Senegal River Valley, intensive irrigated agriculture combined with the withdrawal of SAED from various commercial functions has stimulated rapid growth of GIEs which are assuming functions previously monopolized by the state. In the last decade, peasants have increasingly taken matters into their own hands, organizing their own associations, continuously asserting their independence from the government and establishing their own agendas. These associations also have considerable potential.

The Price Equalization and Stabilization Fund (CPSP)

Introduction

This paper describes the Government of Senegal's Price Equalization and Stabilization Fund (CPSP, an acronym derived from the French "Caisse de Péréquation et de Stabilisation des Prix"). The first section provides a broad overview of, and some details on the organizational structure of, the CPSP. Section two describe the historical evolution of the CPSP. Section three discusses some constraints facing the CPSP. The concluding section offers a brief proposal, in outline form, for the institutional transformation of the CPSP.

1. Overview and Organizational Structure

Before 1973, commodity price stabilization in Senegal was assured by the GOS Treasury through the management of various stabilization price accounts incorporated into the GOS Budget. In mid-1973, the GOS consolidated these separate accounts into a single board, thus creating the CPSP. The CPSP is a public institution, totally owned by the state and placed under the stewardship of the Ministry of Finance.

CPSP's management is governed by the GOS Public Accounting Regulations which stipulate, among other things, that public establishments must deposit on a daily basis all their funds in a designated account at the GOS Treasury. In 1980, when the CPSP was assigned responsibility for importing and distributing rice, this principle was partially waived so the CPSP could deal directly with commercial banks.

The CPSP's functions and responsibilities are:

- to import, store, and distribute rice; and
- to assure price stabilization for the following commodities:
    * export crops: groundnut and cotton; and
    * consumption goods: imported and locally produced rice, wheat flour, groundnut and vegetable oil, tomatoes and sugar.

The price stabilization mechanism for each of these commodities operates through specific agreements between the GOS, Regional Development Agencies (RDAs) and agroindustrial enterprises. The CPSP effectively compares the guaranteed price set by the state for each of these commodities and the real cost price. If the guaranteed price is more than the cost price, this leads to a "positive perequation" (essentially a tax paid to the GOS through the CPSP), that is, a resource flow to the CPSP. On the other hand, if the guaranteed price is less than the cost price, this

leads to a subsidy, that is, a resource flow from the CPSP.

The Executive Board of the CPSP consists of twelve members including the President of the Board who is appointed by Presidential Decree. The sensitivity of matters handled by the CPSP is evident from the composition of the baord. Serving with the President of the Board are:

- one representative of the Presidency;
- two representatives of the Ministry of Finance;
- one representative of the Ministry of Agriculture
- one representative of the Ministry of Industry;
- one representative of the Ministry of Commerce;
- one representative of the Central Bank (BCEAO);
- one representative of the National Assembly;
- one representative of the Chamber of Commerce;
- one representative of farmers designated by the Minister of Agriculture; and
- one representative of the Association of Consumers.

The CPSP board reviews and takes decisions on the annual action plan, the budget, the annual management report, and the balance sheets and the loss and income statement. A six-person Monitoring Committee, chaired by the President of Board, is entrusted with the overall management of the CPSP. A Managing Director is responsible for the day-to-day management of the CPSP; he is assisted by a Secretary General and a Chief Accountant.

Although nominally under the stewardship of the Ministry of Finance, the CPSP has, for the better part of the last twenty years, not been closely managed by the Ministry of Finance. Since 1973, there have been six Managing Directors of the CPSP since 1973; five of them were appointed by the Presidency without consultation with the Ministry of Finance. Three were prominent members of the ruling Socialist Party.

The GOS has never issued any formal organizational chart for the CPSP. Nor is there any reliable information on the number of people employed by the CPSP. As of December 1990, the total number of the employees was estimated at 770. A rough idea of the distribution of personnel by offices at that time is as shown in Table 1.

The major clients of the CPSP are (1) rice importers and for local rice the Société Nationale d'Aménagement et d'Exploitation des terres du Delta du Fleuve Sénégal et des vallées du Fleuve Sénégal et de la Falémé (SAED); (2) RDAs and agro-industries which enjoy benefits of the price stabilization system; (3) local handling companies; (4) local transporters; and (5) farmers who receive subsidies to buy inputs and agricultural implements.

Table 1: Distribution of Employees, CPSP

Divisions/Sub-divisions	Permanent	Temporary	Total
- Managing Director			
* Staff	9	4	13
* Technical Advisors	4	-	4
- Secretary General			
* Staff	2	-	2
* Legal office	6	-	6
- Commercial Director			
* Staff	2	-	2
* Supply office	6	4	10
* Port operations office	76	68	144
* Distribution office	185	264	449
- Director of Administration Finance			
* Staff	3	1	4
* Personnel office	10	9	19
* Budget office	23	6	29
* Financial office	3	1	4
- Director of Price Stabilization			
* Staff			
* Rice and Wheat office	14	5	19
- Chief Accountant			
* Staff	3	-	3
* Subdivisions	25	14	39
- Director of Management Control			
* Staff	8	1	9
- Internal Controller			
* Staff	9	1	10
TOTAL	390	380	770

2. Historical evolution of the CPSP

The structural adjustment reforms implemented by the GOS since 1980 have introduced significant changes in the activities of the CPSP. From 1981 to 1991 various measures were taken to phase out some elements of the price stabilization system in order to shore

up the financial position of the CPSP. Since 1991, only two commodities (rice and wheat flour) are still subject to price stabilization through the CPSP.

The dissolution of Office National de Commercialisation et d'Assistance pour le Développement (ONCAD) in the late 1980s was an important development in the historical evolution of the CPSP. ONCAD was an omnibus rural development parastatal which purchased crops (groundnunnut and millet); distributed inputs and agricultural implements to farmers; and imported, stored and distributed rice. ONCAD suffered from a bloated workforce (some 4,000 employees) often hired for political reasons. Its management was characterized by poor accounting procedures and corruption. ONCAD was closed down in October 1980. With the dissolution of ONCAD, the CPSP was immediately charged with importing, storing and distributing rice. This new assignment led to a critical change in the life of the institution. The CPSP became an intersection point between business and politics. Rice has always constituted a source of wealth for those Senegalese who were awarded government contracts on a non-competitive basis; bribes and kickbacks are commonly reported. Three major incidents, developed below, illustrate how the CPSP has been subject to political considerations.

The ECAMI Case

In mid-1981, on instructions from the Presidency, a private firm named "Energy, Commodities African Management and Investment" (ECAMI) was given the responsibility to import rice on the behalf of the CPSP for an unspecified period of time. The CPSP was instructed to provide ECAMI with all financial guarantees required by the commercial banks to open irrevocable letters of credit. By the end of 1982, ECAMI operations had completely failed. Below are two of the conclusions drawn from an AID-funded study carried out in 1984 by the consulting firm Arthur Andersen:

- ECAMI cost the CPSP $13 million with no obvious benefit for the rice sector; and

- ECAMI unduly collected $3.8 million using procedures such as overinvoicing, excessive interest charges and losses in weight during transit.

Repeated attempts by the Minister of Finance to get the money back and to reimburse the CPSP failed. The connection between ECAMI and the ruling party became evident when, in 1983, the Managing Director played a very active role in the general elections. Thereafter the contract with ECAMI was rescinded.

The CPSP and the system of quotas

In 1981, the CPSP licensed some wholesalers called "quotataires" to handle rice distribution. Many of those who obtained licenses were politically influential people at local levels of the ruling party. The CPSP sold rice on credit to favored individuals. Commercial margins set by the CPSP allowed them to accumulate substantial profits. At the same time, the CPSP accumulated large debts in the form of unpaid loans from those politically well-connected people. These debts totalled some CFAF 10 billion (about $35 million) as of December 1990. The CPSP has never been able to collect those debts.

The 1986 Privatization Plan

In late 1986, supported by several major donors, including USAID, the GOS began to implement an action plan to privatize rice imports and distribution. According to the action plan:

- from December 1986 to November 1987, the private sector would be given the responsibility for importing and distributing 85,000 metric tons of rice (this amount represented 25 percent of commercial rice imports);

- from December 1987 to November 1988, the private sector would gradually become responsible for importing and distributing all commercial rice imports;

- the CPSP would be charged with managing a security stock of 60,000 metric tons of rice;

- in case the private sector failed, the CPSP would be charged with importing the required amount of rice; and

- the system of rice quotas to select wholesalers was abolished.

The action plan appeared to be well designed. To monitor the privatization effort, the GOS created the Comité d'Agrément (Rice Agreement Committee) early in 1986. This Committee, which was chaired by a high official of the Presidency, was charged with (1) preparing the terms and conditions for rice imports; (2) reviewing the bids; (3) selecting the winning bids; (4) preparing the contracts; and (5) monitoring rice supplies and the security stock.

The program for privatizing rice imports was unsuccessful. The GOS blamed the trading companies. The Comité had selected four private trading companies to import the initial 85,000 metric tons of rice. The companies, according to the GOS, were unable to promote a sustainable system of rice distribution throughout the country and were unable to pay the perequation to the CPSP on time.

There is an alternative explanation. First, the GOS did not

really favor the total privatization of rice. The government needed to keep the CPSP in the rice import business given the preparations for the forthcoming 1988 general elections. Second, the procedures and selection criteria used by the Comité d'Agrément were unclear. Two of the four trading companies selected were led by members of the ruling political party; those companies were unable to provide necessary guarantees to banks. Third, for reasons that never were made clear, about 10,000 metric tons of rice imported by one company were retained in the port for a month, at great expense, by customs authorities. In short, according to some observers, the real private sector never had a chance; the deck was stacked from the start.

4. Major Constraints Affecting the CPSP

The CPSP suffers from severe organizational problems. In 1991, Price Waterhouse conducted an audit of the CPSP. The audit report concluded, inter alia, that:

- the most striking weakness regarding the CPSP's organization is a total lack of clear and written procedures which indicate, for the different aspects of the activities of the institution, the process of initiation, execution and control of the tasks to be accomplished;

- CPSP has a poor information system; nobody in the institution is charged with looking after the consistency and the reliability of its financial activities;

- the system of filing the accounting records is totally disorganized; it does not allow a detailed review of the different stages of the rice activity from imports, through storage, and to the distribution of rice;

- the financial management of the CPSP is not centralized; instead it is dispersed among several centers of responsibility, specifically the Chief Accountant, the Commercial Director, and the Director of Management Control;

- the CPSP has control neither over the number of its employees nor the amounts of their salaries.

- CPSP's activities in the rice sub-sector are very expensive by international standards;

- the CPSP inadequately monitors the agreements and protocols through which the price stabilization mechanism operates;

- the CPSP has poorly managed the letters of credit opened in commercial banks to finance rice imports;

- the process of selecting suppliers is not transparent; and

- the CPSP has poorly managed its cereals stocks and the systems that have been installed to prevent stealing and embezzlement are inadequate.

Not surprisingly, there has been a continuing stream of reported incidents of embezzlement and corruption at the CPSP since 1981. Senegal's independent (non-government) press recently reported two such cases.

In June, 1991, newspapers reported on an alleged scheme aimed at misappropriating funds and enriching some staff of the CPSP. Some 3,500 metric tons of rice, quite appropriate for consumption, were "depreciated" at 80% and allegedly sold to carefully selected traders. Instead of paying the fixed price (at that time) of 128 CFAF per kilogram, they paid only CFAF 25 to the CPSP. The officials reportedly involved in the scheme received CFAF 75 per kilo as an "under the counter" payment (the total exceeded $900,000).

In 1992/93 the press reported that about CFAF 1 billion (over $3.5 million) allegedly had been embezzled at the CPSP. Two CPSP employees as well as some of their trader accomplices are currently under detention.

5. Conclusions

An institutional review of the CPSP strongly suggests that it is a thoroughly discredited institution. It appears that the CPSP has been, and continues to be, a major impediment to the promotion of full competition among the private traders involved in the rice sub-sector. Moreover the CPSP has been incapable of handling properly the proceeds generated through operations in the rice sub-sector. Many credible allegations suggest that the connections between the CPSP and the ruling political party are very close. The stated goal of the government is to liberalize the rice sub-sector. If that objective is to be attained, then there can be no meaningful substantive continuing role for the CPSP.

The GOS recently has agreed to completely restructure the CPSP. In a study to be financed by USAID/Dakar, a local consulting firm will be hired to describe in detail how that restructuring process will take place. The terms of reference are being negotiated at this time. The GOS and USAID/Dakar have agreed to the broad outlines of the restructured CPSP. When the process is completed, the restructured CPSP will have completely disengaged from the rice import business as well as from the distribution of both imported and local rice. In the rice sub-sector, the CPSP will be limited to monitoring rice markets, to managing contracts with the private sector which will hold the nation's security rice stocks, and to managing contracts with the private sector to import broken rice only during emergencies.

Under these circumstances, several provisions of the decree defining the functions of the Comité d'Agrément will be declared void as being incompatible with the proper implementation of the liberalization of the rice sub-sector. This should result in the creation of a vibrant competitive market among both existing and potential legitimate rice dealers in the markets of the rice sub-sector.

The Société Nationale d'Aménagement et d'Exploitation des terres du Delta du Fleuve Sénégal et des vallées du Fleuve Sénégal et de la Falémé (SAED)

1. Overview

The Société Nationale d'Aménagement et d'Exploitation des terres du Delta du Fleuve Sénégal et des vallées du Fleuve Sénégal et de la Falémé (SAED), formerly a regional development authority, was re-established as a Government of Senegal corporation in 1981. SAED is responsible for:

- planning, authorizing and overseeing all rural development projects undertaken anywhere in the SAED intervention zone, be they its own projects, private undertakings, or GOS activities;

- managing and maintaining public service equipment located in the SAED area;

- coordinating irrigated and traditional (rainfed and recessional) cropping activities undertaken in its zone by social and business organizations;

- providing support and technical guidance to village organizations in order to enable them to become effective development actors;

- coordinating input provision and agricultural production marketing actions, and to a certain extent, processing agricultural products;

- collecting, processing and marketing the paddy rice production delivered by farmers and farmer organizations;

- and overall, acting as a catalyst or facilitator of the agricultural, economic and social development process in its intervention zone.

Although it is placed under the direct tutelage of the Ministry of Agriculture, SAED also reports to the Prime Minister's Office and to the Ministry of Economy, Finance and Plan. As a GOS corporation, SAED is headed by a 12-member governing board. Board members include the Managing Director General of SAED, official representatives of the GOS and National Assembly, representatives of farmer cooperatives from the Dagana, Podor, Matam, and Bakel Departments, and one representative of SAED staff. In addition, a nineteen-member General Assembly of SAED shareholders -- including all the Governing Board members and 7 additional members drawn from the GOS and SAED Financial Controller -- meet annually to review SAED's activities and

accounts, and to determine further actions.

2. Historical Development of SAED

SAED was first established on January 20, 1965 by the Senegalese National Assembly to plan and manage irrigated agriculture on the Senegalese side of the Senegal River Valley. SAED replaced autonomous development organizations for the lower (Delta) and middle valleys of the Senegal River set up by the French in 1938 for the same purpose. SAED was initially set up as a GOS parastatal with the mandate to promote intensive rice production in order to contribute to the GOS efforts to satisfy national food self-sufficiency needs within a context of recurrent drought. Its initial zone of intervention was limited to the Delta where it developed large-scale irrigation systems (called perimeters). From 1967 to 1972, SAED was managed by a private French firm under a contract with the GOS. From 1971 to 1974, SAED extended its interventions to the entire Senegal River Valley with the construction and operation of medium and small-scale perimeters. SAED has faced serious administrative constraints (e.g.,lengthy GOS contracting/administrative procedures, persistent budget difficulties) since its creation. In 1984, the GOS adopted a new agricultural policy which called for progressive withdrawal of the regional development authorities from the provision of agricultural inputs, crop production, and processing and marketing activities; accordingly, SAED's role and functions were redefined under three-year performance agreements (Lettres de Mission) with the GOS. The Lettres de Mission spell out the mutual obligations of the GOS and SAED, and include development objectives assigned to SAED over the performance period. The first Lettre de Mission (issued before the adoption of the new agricultural policy) was executed from 1981 to 1984. It emphasized the reorganization of SAED. The second Lettre de Mission applied from 1984 to 1987 and aimed at progressively transferring SAED's production/construction responsibilities to farmers and the private sector, and at reinforcing SAED's technical capabilities. The third Lettre de Mission, from 1987 to 1990, emphasized increased farmer management, intensification of land development activities and internal decentralization of SAED. Signature of the fourth Lettre de Mission -- delayed for a year and covering the 1991-1994 period, emphasized: (a) organizing farmers into autonomous, dynamic farmer organizations; (b) divesting SAED from the maintenance and management of pumping stations, and from the marketing and processing of paddy rice; and, (c) turning SAED into a planning and monitoring entity for the promotion of integrated rural development in the Senegal River Basin with a view to catalyzing the emergence of a dynamic and self-sustaining private sector.

Prior to implementing the successive Lettres de Mission, the traditional functions performed by SAED were: (a) providing

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inputs (mostly on credit) to farmers, i.e: fertilizers, seeds, herbicides, diesel fuel and oil for pumps and agricultural machines, etc.; (b) designing, constructing and maintaining the irrigation infrastructure; (c) providing training/extension and technical guidance to farmers and farmer groups engaged in irrigated agriculture; (d) providing and managing the agricultural equipment/machinery needed for irrigation development; (e) purchasing, processing rice paddy in the entire area serviced by SAED; (f) planning and managing the GOS investments in irrigated agriculture in the Senegal River; and (g) implementing and managing donor-funded projects in the region.

To date, the implementation of the first three agreements between SAED and the GOS from 1980 through 1990 has not been fully effective, and SAED's targeted objectives of decentralized administrative management and privatization of the rice processing and marketing functions are yet to be reached. Despite SAED's withdrawal from the provision of agricultural inputs to farmers, privatization of some of its mechanical repair facilities, and the reduction of over half of its 1980 staff size, SAED continues to perform most of its traditional functions of irrigation design and construction, administrative management, training and extension, and rice marketing and processing.

3. Organizational Structure and Staffing Issues

A. Organizational Structure of SAED

SAED is structured into 2 distinct levels: (a) a central administrative level, with headquarters in Saint-Louis; and (b) a field (decentralized) level, with the SAED Rice Processing and Marketing Division known as Unité Rizeries, Intendance et Commercialisation (URIC), and 4 bases of operations corresponding to 4 GOS administrative zones in the Senegal and Faleme river valleys; i.e: Dagana, Podor, Matam and Bakel Departments.

The central administrative level is the decision-making body of SAED; it is primarily responsible for general administrative management of the organization as a whole. This includes policy formulation, personnel management, contracting and financial management, project/program design, oversight/control of and logistical support to field operations, and training. The decentralized level concerns the project/program implementation and processing/marketing functions. This specifically includes all field activities, i.e: land development and construction activities, repair and maintenance of agricultural machinery, pumping equipment and stations, agricultural extension and training of farmers and village organizations, and rice milling and marketing operations.

The central administrative level consists of the following

divisions and offices:

(1). the General Managing Division which includes:
--the Managing Director General,
--the Deputy Managing Director,
--the Secretary General,
--the Internal Audit and Management Control Unit,
--a Private Sector Technical Advisor,
--a Rural Development Technical Advisor,

(2). the Administrative and Financial Division which includes:
--an Accounting and General Services Office,
--a Human Resources and Legal Advisor's Office,
--a Computer Support Division,

(3). the Planning and Rural Development Division which includes:
--a Planning and Design Office,
--a Research and Extension Office,
--a Monitoring and Evaluation Office,

(4). the Irrigation Development and Infrastructure Division which includes:
--a Technical Support Unit,
--a Development Operations Office,
--a Land Development and Water Management Office, and

(5). the Irrigation and Extension Training Center known as the "Centre National d'Application des Pratiques et Techniques de l'Irrigation" (CNAPTI) which includes:
--a Director and deputy,
--a Secretary's Office,
--a Documentation Specialist,
--a Manager,
--a Training Pool.

The decentralized level includes 4 delegations and URIC. Each delegation is subdivided into:

--a Delegation Engineer and an Assistant,
--a Development Operations and Water Management Division,
--a Rural Development and Extension Division,
--an Accounting and Administrative Division,
--Field Sectors (in lieu of irrigated perimeters), and
--Projects.

URIC includes:

--a Director and Deputy,
--an Administrative and Financial Office,
--a Processing Service, and

--a Marketing Division.

The fourth Lettre de Mission gives SAED a new mandate, one of steering and coordinating the rural integrated development of the left bank of the Senegal River. The goal is to reduce SAED's intervention costs and increase its efficiency as a public service organization. The specific objectives pursued by SAED are to: (a) transfer irrigation systems management to farmers and private organizations, privatize marketing and processing of paddy rice and mechanical repair activities; (b) adapt its administrative structures to its new mandate through further decentralization of its functions to field services and reorganization of its central services; and (c) restructure and adapt its staff to its mission. The status of achievement of these objectives is discussed in the following sections of this analysis.

B. Staffing Issues

Under its restructuring program, SAED has attempted to match newly established positions with appropriate staff profiles consistent with its disengagement from its processing, marketing, land development, irrigation design and construction, mechanical repair and maintenance functions. This has resulted in substantial reduction of middle and lower level, non-professional personnel and recruitment of higher level staff over the past 10 years. From 1981 to date, SAED staff size has gone from 1,000 to 440 (excluding the part-time and seasonal workers), or a reduction of 560 employees. Of the 440 currently employed, 70 are Government of Senegal personnel assigned to SAED, whereas 370 are contract employees. The central administrative services of SAED currently employ 128 staff members; 312 employees are assigned to field operations. Additionally, 119 part-time staff are currently working in SAED's donor-supported projects, and 172 seasonal workers have been used in field activities in 1993.

Further staff reductions are being considered within the context of the ongoing disengagement of SAED. SAED staff is scheduled to be cut down from 440 to 250 by December 1994. However, the staff reduction plans have been delayed by several factors, internal as well as external to SAED. The major constraints include lengthy delays experienced in mobilizing GOS and SAED contributions to employees' severance payments and the unfavorable external economic environment for alternative private sector opportunities of the separated personnel.

4. SAED Services to Clients

As a government service organization, SAED's main clients are farmers, farmer groups and the GOS through the Caisse de Péréquation et de Stabilization des Prix (CPSP).

SAED designs and constructs irrigation systems for farmer groups. It transfers the completed systems to the beneficiary groups who subsequently assume all management responsibilities. However, SAED still assures maintenance services for major irrigation system dikes, access roads, and pumping stations servicing several irrigation systems. SAED also provides extension and technical guidance, and conducts literacy programs for farmers. The services rendered to farmers and farmer groups are not charged to them; the costs are actually borne under the SAED budget as part of its personnel and operating expenses, and by the GOS in the form of periodic subsidies to SAED.

SAED/URIC and its private subcontractors process about 50,000 tons of paddy rice annually which SAED purchases from farmers working in the Senegal River area. It sells the milled rice to the CPSP which, to date, has been the sole wholesale distributor of rice in Senegal. SAED and CPSP are bound by contractual arrangements under GOS arbitration. SAED's rice processing costs are actually borne by SAED, CPSP and the GOS. SAED covers the costs associated with URIC operations (personnel salaries, spare parts, miscellaneous supplies, etc.); CPSP makes quarterly payments for the amount of rice received from SAED; and the GOS provides a quarterly subsidy to SAED. URIC also produces animal feed from rice by-products which is directly sold by SAED to private customers.

Between January and October 1993, URIC purchased 42,842 tons of paddy rice, of which it processed 17,428 tons in its two mills located in Ross-Bethio and Richard-Toll. It subcontracted the remaining 25,414 tons to private processors operating in the same zone. Given the nominal processing capacity of the two rice mills of SAED/URIC of 5 tons per hour each, the total paddy rice purchased could have been processed had the mills been operating under optimal conditions. But the poor conditions of URIC's run-down, old equipment (over 20 years of age), frequent breakdowns and the lack of replacement parts have seriously constrained URIC's performance.

Due to its status as a government service organization, SAED is not allowed to engage in profit-making activities. As a result, it draws most of its budget resources from the Government and donors. The proceeds from its rice processing and marketing activities are not adequate to cover all of its recurrent costs. This, in turn, results in SAED's constant reliance on GOS support and external funding sources. As has been often the case, GOS funds have not been made available in a timely fashion or in the amount expected. In addition, the relatively large size of SAED's staff continues to be a financial burden to SAED. The budgetary constraints and personnel problems experienced by SAED over the past few years have seriously affected its performance and prevented it from attaining all the objectives of its successive "Lettres de Mission".

5. Relevance of the Proposed Policy Changes to SAED

The proposed Senegal Rice Structural Adjustment program requires that SAED disengage from purchasing and processing local paddy rice. This is consistent with the ongoing negotiations between SAED and the staff of URIC, and particularly with SAED's fourth Lettre de Mission whose implementation originally was to have been completed by December 1994. In fact, SAED was required under the Lettre de Mission to pull out of rice paddy purchasing and processing by December 1992. This was to be accomplished by laying off the 39 employees of URIC which was to be turned into a private company. However, the proposed privatization of URIC now has been delayed by SAED until June 1994. In any case, SAED seems to be determined to proceed with the proposed privatization of URIC. Negotiations have been continuing between SAED and URIC workers under the supervision of the GOS Ministry of Finance's Commissariat à la Réforme du Secteur Parapublic. In addition, the privatization option will likely be mutually beneficial for SAED and URIC's workers as it will contribute to achieving SAED's staff reduction objective and it will provide alternative private employment opportunities to the separated staff of URIC. Meanwhile, there are encouraging signs of private sector development in the SAED intervention zone, especially in the area of paddy rice processing. Currently, 26 private rice mills with a total processing capacity of 300,000 tons of paddy rice are operating in the Senegal River Valley.

6. Conclusion

SAED continues to operate as a public service organization within a context of burgeoning private sector development, especially with respect to rice production and processing. The changing development context in the Senegal River has been well perceived by SAED which has been trying to adapt to the new conditions through its efforts to meet the requirements of its four Lettres de Mission which will be completed in December 1994. Under the ongoing implementation program, progress has been achieved in: disengaging from the management of irrigation perimeters; withdrawing from the maintenance of the agricultural equipment with the closing or privatization of most maintenance/repair facilities, especially in the Delta; administratively restructuring SAED, and pursuing the decentralization of the decision-making powers to the delegations; and moving towards signing an agreement between SAED and URIC for URIC's privatization and take-over of SAED's rice mills.

Ministry of Agriculture

The Ministry of Agriculture (MOA) has overall responsibility for agricultural production in Senegal. Other ministries, notably Ministry of Environment and the Ministry of the Interior, have some responsibility for extension and rural development. The Minister of Agriculture also oversees four regional development authorities (RDAs, which are essentially regional parastatal enterprises); the peanut oil processing parastatal, SONACOS; the national agricultural research institute (Institut Sénégalais de Recherches Agricoles - ISRA); and several donor projects. Of the many units of the MOA, the most important for the purposes of this annex is the Direction de l'Agriculture (DA). The RDA SAED is described in Annex 7.a.3. The UPA is described in the body of the PAAD itself.

The DA has six divisions: administration and finance; soils; horticulture; actions and programs; agricultural statistics; and seeds. In the field, the DA is represented in each of the 10 regions by a Regional Officer, who operates under the direct authority of the Director of Agriculture. Each regional office is subdivided into sectors at the department level, and field level staff are located at the arrondissement and sometimes at the rural community level.

The 1993 GOS reorganization places the Direction for Forestry, Fisheries and Wildlife and the Direction for Reforestation and Soil Conservation in the new Ministry of Environment. Traditionally, forestry agents have seen themselves protectors of the forest against the malicious actions of the people. Their duties include the issuance of permits for tree cutting, movement of wood and wood products, and issuance of hunting permits. Only in the past five to ten years have forestry agents begun to work with rural populations in forestry management. Although some change has taken hold, overcoming entrenched institutional attitudes will take considerable time. It is possible, however, "that forestry extension services could shift from control and policing to a service with a development orientation."

Regional Development Authorities managed by the MOA are: a) SAED, for irrigation development in the Senegal and Falémé River Valleys; b) SODEFITEX, for cotton development in Eastern Senegal; c) SODEVA, for agricultural development in the Peanut Basin; and d) SODAGRI, for irrigation development in the Upper Casamance.

RDAs, until the New Agricultural Policy (NPA) was announced in 1984, were responsible for a wide range of services in the agricultural sector, including input and credit supply, technical assistance, extension, and marketing. The mandate for each of the RDAs is defined in Lettres de Mission which set forth terms

of financial and managerial autonomy for the RDA. Most donor assistance in agricultural development has been through projects with the RDAs. During the 1970s, the RDAs grew with the influx of donor investments, resulting in staff that was relatively well paid and equipped, especially when compared to the traditional services. After the NPA was announced, as GOS policies changed to remove input subsidies and to privatize many of the activities of the RDAs, the unsustainable dependence of the RDAs became apparent.

The uncertain future of the RDAs and their personnel has led to extension services that are uncoordinated and disparate as training, transport, and incentives for extension agents become rare, and to extension personnel who are unmotivated.

SAED was established in 1965 as a public enterprise to plan and manage irrigation development along the Senegal River Valley (see Annex 7.a.3 for details).

SODEVA was established in 1968 to provide extension services in the Peanut Basin. SODEVA once had the staff (2000 people) and financial capabilities to cover the entire Peanut Basin, but in recent years its resources have been so reduced that it is practically non-functional.

SODEFITEX has approximately 150 extension agents (down from a high of 350). Their main responsibilities are to diffuse technical packages and to train cotton producer groups (agricultural and literacy training). Given the current depressed world market for cotton, SODEFITEX has had to reduce its personnel and activities.

SODAGRI's area of intervention is limited to the Anambé basin in the Upper Casamance (Departments of Kolda and Velingara). SODAGRI concentrates its extension efforts on rice cultivation (both irrigated and rainfed) and rainfed cereals (millet, sorghum, corn). Approximately 30 persons are employed by SODAGRI, including 13 village extension agents.

In the Casamance, which consists of the two regions of Kolda and Ziguinchor, SOMIVAC (Société Régionale de Mise en Valeur de la Casamance) was responsible for rural development until 1990 when the National Assembly voted SOMIVAC out of existence. While there is currently no RDA in the Casamance, two donor projects (notably, DERBAC - Projet Autonome de Développement Rural de Basse Casamance, African Development Bank financing); and PRIMOCA (Promotion Rurale Intégrée en Moyenne Casamance, Italian financing) have assumed some of SOMIVAC's former responsibilities. DERBAC encompasses the Ziguinchor region (Departments of Oussouye, Bignona, and Ziguinchor) and PRIMOCA covers the department of Sédhiou.

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In recent years, a large number of local NGOs have been created which organize farmers. Association des Jeunes Agriculteurs de la Casamance (AJAC) consists of 600 farmers' groups (approximately 100 members per group). While projects and NGOs are working directly with farmers, the ISRA/Djibélor researchers, facing their own budgetary and logistical constraints, are coordinating their efforts with projects and NGOs. Compared to other regions of Senegal, the linkages between research (ISRA) and those performing agricultural extension services in the Casamance are strong. Part of the credit for the strength of these linkages goes to the former USAID-financed Agricultural Research and Planning Project, which focused on research that addressed farm-level constraints.

No RDA exists for the Niayes zone, where horticulture is the major agricultural production activity. The Centre pour le Développement de l'Horticulture (CDH), which is part of ISRA, conducts research, and promotes and trains farmers and extension agents in horticultural techniques for the zone. Agricultural extension in the Niayes is conducted by the traditional services of the Direction of Agriculture of MOA, and of the Centres d'Expansion Rurale Polyvalent (CERPs), as well as by numerous NGOs and projects that are active in the area.

The sylvo-pastoral zone contains approximately 20% of the land mass of Senegal, but only 4% of the arable land and 6% of the population. Extensive livestock production systems (carrying capacity of one head per 6-7 hectares) provide a livelihood for the population. Extension services for herders has been provided by an RDA, the Direction de l'Elevage, and various donor projects. SODESP (Société de Développement de l'Elevage dans la Zone Sylvo-Pastorale) was the RDA from 1985 until 1989 and provided extension services for herders in the sylvo-pastoral zone. SODESP focused its efforts solely on meat production, ignoring the importance of milk production in the livestock production system. In addition to SODESP, the Offices de l'Elevage have concentrated/limited their extension efforts to veterinary health (vaccination services and treatment of disease) and not improved management of the livestock production systems. PDESO (Projet de Développement de l'Elevage au Sénégal Oriental), PARCE (Projet Aménagement et Reboisement du Centre-Est) and PICOGERNA (Programme Intégré de Gestion des Ressources Naturelles) are projects that concentrate on animal and/or agricultural production, natural resource management, and functional literacy. For an area as vast as the sylvo-pastoral zone, the extension personnel are very limited.

During the 1980s as the responsibilities of the RDAs expanded, the role of the Direction of Agriculture diminished in agricultural development and extension. While the Direction of Agriculture no longer had responsiblity for field-level implementation of agricultural projects and programs, it still

retained field staff nationwide. Other government departments (Animal Resources, Forestry, Water Supply) retained, at the same time, considerable responsiblity for project execution.

In addition to the RDAs and the traditional extension services, many non-governmental organizations (NGOs), both Senegalese and international, work in agricultural extension and technology transfer. Farmer groups (GIE - Groupement d'Interêt Economique), NGOs, as well as CERPs (Centres d'Expansion Rurale Polyvalents) and Maisons Familiales Rurale are administratively under the control of the Ministry of the Interior.

At the local level, the Ministry of Interior regroups staff from various government departments into Polyvalent Rural Development Centers (Centres d'Expansion Rurale Polyvalents - CERPs). CERPs exist in all 90 districts of Senegal, but are essentially nonfunctional due to a lack of clearly defined objectives, technical competence, and operating funds. However, it is important to note that many of the village level extension agents (agriculture, livestock, forestry, health) work within the CERPs, which means that the local level extension agents work under the supervision of the Sous-Préfet and not of the Regional Officer of the MOA's Director of Agriculture. The extension agents "detached" from the Direction of Agriculture work with farmers (when transportation is available) and, during the growing season, collect agricultural statistics from the arrondissement.

In sum, a variety of extension institutions and trained agents exist in Senegal. The major drawback is that all of the governmental and parastatal institutions do not add up to an effective extension service.

The historical pattern of agricultural extension in Senegal has been very top-down in approach. Government development objectives and donor projects based on these objectives quite often do not meet the needs of the rural populations. Farm-level decisions have been made "for" the farmer and not "by" the farmer, or even with farmer input. The solution to the problems of stagnating or declining agricultural production has to be found at the farm level.

Under the Ministry of Work and Professional Training, Senegal has seven agricultural schools which offer three levels of training -- equivalent to secondary, junior college, and university training. Four agricultural schools (located in Ziguinchor (agriculture and forestry); in St. Louis (livestock); and in Dakar (horticulture) train extension agents and lower level staff of ministries and other parastatals to the basic level (Agent Technique d'Agriculture-ATA; Agent Technique d'Elevage-ATE; Agent Technique d'Horticulture-ATH; and Agent Technique des Eaux et Forets-ATEF). These three schools are

secondary schools, providing three years of training following lower secondary education. The Ecole Nationale Des Cadres Ruraux (ENCR) in Bambey trains middle level field officers to an intermediate level (Ingénieur des Travaux-ITA), representing post-secondary training. Technical assistance to the schools training lower and intermediate extension agents is provided by the Swiss government. A bilateral Senegalese-Swiss agreement also provides technical assistance for in-service training and recycling of extension agents through the Centres d'Appui pour le Recyclage des Agents Techniques (CARAT) et des Ingénieurs des Travaux (CARIT).

University level training is offered by INDR and EISMV. The Institut National de Développement (INDR) in Thiès trains professional agriculturalists. The Ecole Inter-Etats des Sciences et Médecines Vétérinaires (EISMV) in Dakar trains veterinarians. A major weakness of agricultural training in Senegal has been that it is geared exclusively to train individuals for the government civil service.

Most Senegalese farmers do not currently benefit from agricultural extension services. Nevertheless, there is a long history of extension efforts supported in a piecemeal fashion by a succession of bilateral and multilateral donors. Research-extension linkages have been notoriously weak. Input from farmers in defining research priorities via extension is just now gaining deserved recognition. Recent GOS reforms have realigned the traditional services and RDA extension roles, forced reforms, and allowed the emergence of NGO-based programs at the village level.

Agricultural extension services in Senegal date back to the 1940s at which time all extension activities were the sole responsibility of the Ministry of Agriculture. Today, while the Ministry of Interior is not responsible for agricultural extension, many local level extension agents are located administratively within the Ministry of the Interior. This anomaly is a major obstacle in establishing an effective national extension service.

Furthermore, the activities of the "traditional" governmental extension services (regional offices of agriculture, livestock, and forestry) are not well coordinated with the RDAs. RDAs are dependent upon donor financing, which in recent years has become increasingly scarce, leading to irregular and inconsistent extension activities. Dependent upon the meager resources of the government budget, the "traditional" extension services are inoperative for most of the year. The extension agents of the Direction of Agriculture collect statistics and crop production data during the agricultural season, but due to lack of mobility, rarely work directly with farmers in most areas of Senegal. Livestock agents are active only during the months

of the annual vaccination campaign (January-March/April), but like agricultural extension agents, lack mobility (vehicles/motorcycles and gas) for most of the year. Water and forestry agents have the mandate to police and control forests, and only recently have been given an extension role.

Since 1987 the World Bank has been working with the Government of Senegal to design and implement a program that will reform and reanimate the government extension services. A pilot project (Programme Pilote d'Amélioration des Services d'Appui aux Agriculteurs -- PAGRI) was followed by the Programme National De Vulgarisation Agricole (PNVA) which began implementation in July 1990.

PNVA is the first four-year phase of a long-term program with the objective to improve agricultural extension services to farmers and herders. Total financing for PNVA is $20.2 million of which the World Bank provided a $17.1 million loan to the GOS and the GOS is to contribute $3.1 million. PNVA started officially on July 6, 1990. The PNVA project was to have one principal component, namely improvement of crop and livestock extension services, based on lessons learned during the PAGRI pilot project. The project would have two secondary components: (i) strengthening of producer organizations through training and (ii) short-term consultancies in policy formulation, project preparation and appraisal, and performance monitoring. It is this component of PNVA that funded the creation of the UPA, which is fully described in the text of the PAAD.

Under PNVA, field extension staff is organized in four levels: the field extension agents (conseiller agricole); field supervisors; regional coordinators; and subject matter specialists (SMS). Principles of the training and visit (T&V) system are to be closely adhered to and include: a) establishing and adopting a time-bound and supervised work program at all levels; b) regular and continuous training of staff at all levels; and c) strengthening the linkages between research and extension. PNVA utilizes existing extension and research staff, creating only the extension management unit to manage the program. To more efficiently use existing extension agents, PNVA will also train extension agents to be polyvalent, which means that livestock agents will be trained to give advice on crop production and vice-versa. Extension agents will also teach functional literacy to farmers. In 1989, when the GOS and the World Bank decided that PNVA was necessary to revitalize agricultural extension in Senegal, some of the other donors, notably the French, voiced concerns about the extension methodology (T&V) and about the organization and focus of PNVA. In July 1989, the then-Ministry of Rural Development published the report "Organisation des Appuis aux Producteurs: Répartition des Fonctions entre les Différents Partenaires du Développement dans le Milieu Rural Sénégalais", which was prepared with Caisse

Centrale financing. This report identified three major conditions in rural areas that had been largely ignored by PNVA. These are: a) the degradation of natural resources with concurrent impoverishment of many farms; b) the emergence of a growing dynamism of farmer organizations, independent from the state; and c) the confusion of the different ministries and agencies that have a role in rural areas. The major recommendation of the report was to create the Programme National d'Appui aux Producteurs (PNAP) to oversee and coordinate all activities in rural areas with the objectives to reinforce farmer organizations and to improve the public services provided by the GOS in the regions and in villages. PNAP in effect recommended the creation of a "super-ministry" to coordinate all rural activities, including PNVA.

The Ministry of Economy, Finance and Plan: A Feasibility Brief

1. Overview

The Ministry of Economy, Finance and Plan (MEFP) is responsible for developing and implementing the economic and financial policies of the Government of Senegal. The MEFP is also responsible for monitoring the short and long-term impacts of macroeconomic and sectoral policies and programs. Therefore, the MEFP is the primary interlocutor between the GOS and the donors. Regarding the agriculture sector, the MEFP:

- is a member of the GOS Interministerial Council dealing with policy formulation, credit, and crop marketing;

- chairs the GOS Rice Committee which is in charge of the monitoring of rice imports and distribution;

- assures the stewardship of the CPSP and the agricultural credit bank (CNCAS); and

- is in charge of conducting the restructuring and the privatization of public enterprises including Regional Development Agencies (RDAs').

2. Organizational details

The Minister of Economy, Finance and Plan is assisted by the Delegate Minister in charge of the Budget, the Chief of staff (the Directeur de Cabinet) and a team of Technical Advisors.

As of June 1993, the MEFP consisted of 4,300 employees including 460 highly trained professionals. In the context of the Rice Structural Adjustment (RSA) program the most relevant MEFP divisions are:

- The GOS Interministerial Rice Committee chaired by the MEFP Senior Technical Advisor; the other members consist of:

  * one representative of the Presidency;

  * one representative of the Prime Minister's Office;

  * one representative of the Ministry of Industry;

  * one representative of the Ministry of Agriculture;

  * the GOS Financial Comptroller;

  * the GOS Contracting Officer; and

* the CPSP Managing Director.

This Committee is in charge of:

* formulating and planning the GOS rice imports and distribution;

* selecting and contracting with private traders involved in rice imports;

* controlling the quality of imported rice; and

* monitoring rice distribution.

- The Caisse de Péréquation et de Stabilisation des Prix (CPSP) which has been charged with importing, storing and distributing rice since 1980 (for further details see the institutional analysis of the CPSP).

- The MEFP Monitoring Committee of the Structural Adjustment Program. This Committee which currently consists of some 10 highly trained professionals was created in early 1984 to supervise the implementation of the GOS Medium and Long Term Adjustment Program (1984/1992). This Committee was particularly in charge of monitoring of the New Agricultural Policy and the New Industrial Policy as well. In June 1992, the World Bank and the GOS agreed to provide this Committee with a new scope of work including the following tasks:

* to review in depth the Senegal's macroeconomic situation;

* to carry out sectoral analyses including sectors of agriculture, industry and services;

* to identify major constraints affecting competitiveness and economic growth (including exchange rates issues).

- The Commissariat General à la Réforme du Secteur Parapublic (CGRSP). This was created in 1988 with the overall responsibility to conduct and monitor the reform and the privatization of public enterprises. The CGRSP consists of twelve highly trained professionals. From 1988 to 1991, the CGRSP received financial and technical support from the World Bank, the Canadians and the French. The CGRSP has three operational sections:

* The Strategic Management section, which is in charge of monitoring:

** the performance of public enterprises;

** the level of employees and the amount of salaries paid by public enterprises; and

** the financial relationships between the State and public enterprises.

* The Contracting Policy section, which is in charge of:

** preparing, implementing and monitoring the performance agreements (lettres de mission) signed between the State and public enterprises;

** providing technical support to public enterprises to help them implement their restructuring plans.

* The Disengagement and Privatization section which is in charge of streamlining the size of the overall parapublic sector. More precisely, the mandate of this section is to design implement and monitor the GOS policy of public enterprises disengagement and privatization.

- The Direction de la Coopération Financière (DCF); this division is in charge of planning and managing the public investment program. More precisely the DCF:

* prepares the three year rolling investment plan;

* prepares and manages the annual investment budget;

* plays a key role in the negotiations between the GOS and the donors to get external sources of investment financing;

* determines the annual amount of GOS contributions (counterpart funds) required by each investment project.

- The Direction de la Dette et de l'Investissement (DDI); this division is charged with managing the country's external debt and monitoring the financial aspects of public investment projects. In particular, the DDI:

* prepares required program documentation such as evidence that the conditions precedent are met;

* reviews project implementation letters;

* prepares payment orders for the disbursement of local counterpart funds by the GOS Treasury; and

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* prepares financial requests for the disbursement of funds.

3. Conclusions

As the GOS official agency for policy reform formulation and implementation, the MEFP has reinforced since 1980 its institutional capacity. Given its central responsibilities in the formulation of GOS macroeconomic and sectoral policies and programs, the MEFP will be the coordinating agency of the proposed RSA program.

The major actions which are expected to be taken by the MEFP are:

- the adoption and the implementation of the CPSP restructuring plan;

- the implementation through the CGRSP of a full disengagement of SAED from local rice milling and marketing;

- the liberalization of local and imported rice distribution;

- the redefinition of the role of the GOS Rice Committee;

- the implementation of a full privatization of rice imports;

- to make available in a timely fashion counterpart funds to UPA in the context of the execution of RSA companion project; and

- to provide all required documentation for the disbursement of funds.

Annex 7.b

Social Analysis of the USAID/Dakar Rice Structural Adjustment Program

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USAID/Dakar

1. Introduction

This section analyses, at the various levels of the rice sub-sector, the predictable people-level impacts of the changes proposed under the USAID/Senegal Rice Structural Adjustment (RSA) program. It tries to: (a) identify the potential winners and losers and their location; (b) determine, to the extent possible, the magnitude of their potential gains and losses; and (c) propose measures that could be taken to lessen the potential negative impacts on "at-risk groups" of the liberalization of the rice sub-sector in Senegal.

In terms of numeric representativeness of impacted populations and magnitude of potential impacts of the proposed reforms, rice producers constitute the most important "at-risk groups". The following analysis will therefore put more emphasis on the producer level. Regarding the consumption aspect, only the rice sub-sector is concerned.

The analysis will address potential impacts at production and consumption levels. Predictable changes at the processing, import, transport, and marketing levels and the restructuring of SAED and CPSP will be considered only in cases where they could have potential effects at the producer or consumer levels.

The analysis will not be limited to the changes predicted in the technical analyses (e.g., Annex 9). Since the objective of the RSA program is to install a market-based system in the rice sub-sector, there are many unidentified factors which could play determinant roles in the future. For that reason, the potential impacts on the basis of optimistic as well as pessimistic standpoints are to analyzed.

In the rice sub-sector, the RSA program reforms which will directly affect agents intervening in the production, transport, processing and marketing of local rice are: (1) the privatization or closing of state-owned rice mills; (2) the elimination of the SAED monopoly on paddy marketing and processing; (3) the elimination of the CPSP monopoly on local rice wholesale marketing; (4) the elimination of administered wholesale pricing for both local and imported rice; and (5) the restructuring of SAED and CPSP.

2. Paddy rice production in Senegal

The total area cultivated in paddy rice was estimated at 73,696 hectares in 1992-93 by the Ministry of Agriculture. The two main

regions of rice cultivation in Senegal are the Casamance (45,337 hectares or 60 percent of the total) and the Senegal River Valley (25,800 hectares or 35 percent of the total area planted).

The Senegal River Valley, where yields are above 4,500 kg per hectare, accounted for 68 percent of the national production of paddy rice estimated at 177,000 metric tons in 1992-93 (Statistics of the Ministry of Agriculture). The relatively low share of the Casamance in the national production (less than 30 percent) is a consequence of the low yields in this region (1,000 to 1,200 kg per hectare).

The reforms supported by the RSA program are market-oriented. Therefore, at the paddy rice production level, these reforms will have significant impacts only in situations where a share of the production is marketed. Three regions can be distinguished regarding the marketing of local rice: the Delta of the Senegal River, the middle valley of the Senegal River, and the Casamance region.

2.a. Paddy Rice Production in the Senegal River Valley

In the Senegal River Valley, the total area developed for irrigation was estimated in 1990-91 at 48,200 hectares of which 32,200 hectares (66 percent) were developed by SAED or under its supervision. The remaining 16,000 hectares were developed by groups, outside the supervision/approval of SAED (SAED. 1991a, 6). These perimeters are called *Hors-SAED perimeters* or "pirate" perimeters compared to the *SAED-perimeters* which refer to the perimeters developed by SAED or under its supervision[1].

2.a.(1) The Delta of the Senegal River Valley

In the Delta, farmers depend exclusively on irrigation, and on rice cultivation in particular. In 1989-90, the total rural population of this zone was estimated at 110,000 individuals distributed among 11,200 households (projections from the 1988 Population census). During the same year, the average rural household farmed 1.56 hectares under irrigation, of which 1.51 hectares were devoted to paddy rice, and 0.05 hectare to other types of commodities. The area planted in recession cultivation was insignificant: 0.01 hectare per farm-household. Rainfed agriculture was not practiced in the Delta in 1989-90. In sum, for this zone, paddy rice occupies 96 percent of the total farm

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[1]. The estimates regarding the Hors-SAED perimeters vary from one source to another and estimates regarding the total area irrigated, the total production, and the share of paddy rice diverge accordingly. The only reliable information relates to the SAED-perimeters.

size which is 1.57 hectares.

2.a.(2) The Middle and Upper Valley of the Senegal River

In the middle and upper valley of the Senegal River, which consist of the Departments of Podor, Matam and Bakel, rice cultivation is marginal compared to that in the Delta. In 1989-90, the total rural population of the middle and upper valley was estimated at 365,000 individuals distributed among 40,000 households. The average farm size was between 2 hectares (Podor and Matam Departments) and 2.26 hectares (Bakel Department). The average household farmed 0.16 hectare of paddy rice in Podor, 0.10 hectare in Matam, and 0.11 hectare in Bakel.

In this zone, the principal components of the farming systems are recession cultivation and rainfed agriculture. In 1989-90 when the hydrological conditions were good, farmers in the middle valley (Podor and Matam) planted between 0.84 hectare (Matam) and 1.28 hectares (Podor) of sorghum and cowpeas in the floodplains. In Bakel, 0.42 hectare was planted under recession cultivation per rural household. Rainfed agriculture is more important in Bakel (1.55 hectares per household) than in Matam (1.09 hectares) and in Podor (0.44 hectare).

2.b. Paddy Rice Production in the Casamance

The rural population of the Casamance is estimated at 813,300 people distributed among 97,708 households for 1989-90. The average farm size vary from 4.05 hectares in the Kolda Region, and 1.91 hectares in the Ziguinchor Region. The average size of the area planted in paddy rice (swamp and upland rice) per household is more important in the Ziguinchor Region (0.80 hectare per rural household) than in the Kolda Region (0.46 hectare).

Good rainfall conditions explain the importance of the share of other crops in both regions. Peanut cultivation varies from 0.73 hectares per household in Ziguinchor to 1.41 hectares in Kolda. Other cereals (millet, sorghum, maize and cowpeas) occupy 2 hectares per household in Kolda and only 0.40 hectare in Ziguinchor. This means that the Ziguinchor Region is more dependent on rice cultivation (42 percent of the total farm size) than the Kolda Region (only 11 percent of the farm size).

2.c. Differences in Access to Paddy Rice Cultivation

The above figures over-estimate the number of farmers involved in paddy rice production, because they consider that all rural households in the Senegal River Valley and in the Casamance have access to rice cultivation. In the middle valley of the Senegal River Valley where recent data are available (through the surveys of the Senegal River Basin Monitoring Activity, or SRBMA), 58

percent of the households living near the main channel of the river (less than 30 kilometers) did not have access to irrigation in 1991-92. If we consider the administrative entities of the Matam and Podor Departments (which include zones situated more than 30 kilometers from the river), the number of households which do not have access to irrigation will be greater.

Women's access to irrigation, and to irrigated paddy rice land in particular, is insignificant. Women own only 6 percent of the 2435 parcels covered by a survey undertaken by SRBMA in 32 villages of the Departments of Matam and Podor. This percentage is relatively high compared to recession cultivation where women's access to ownership rights on land is almost null (HOROWITZ and al., 1991)

Women have better access to rice cultivation in the Casamance. In the Kolda Region, rice cultivation is reserved for women. In the Ziguinchor Region, men and women equally participate in rice cultivation. In both regions, women have almost full responsibility over the management of rice production, but men exert the ownership rights over the rice land.

2.d. Predictable Impacts of the Reforms at the Paddy Rice Producer Level

The most important direct effects of the reforms at the level of the production will concern the Delta --Department of Dagana in the Senegal River Valley-- which provided more than 90 percent of the local rice marketed through SAED in 1990 (SONED, 1989, 11). The other rice producer regions will be less affected. In the middle valley of the Senegal River basin, the total production of paddy rice is too small to generate significant marketable surpluses. In the Casamance, the total production of rice is home consumed.

There are many uncertainties regarding future fluctuations in the paddy rice farm gate prices. We assume, following the analysis provided in Annex 9, that the farmgate price of paddy will decrease slightly (the current weighted average of farmgate prices actually is significantly below the current administered price which is at CFAF 85 per kilo.

The actual production cost of paddy rice in the Senegal River Valley imposes limits to the viability of paddy production below a certain farmgate price. The actual production costs (household labor not included) are estimated at more than CFAF 200,000 per hectare[2]. At CFAF 85, these costs represent 2,350 kg of paddy

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[2]. Between CFAF 211,000 and 257,000 in SAED (1991, 14), between CFAF 229,608 and 248,058 in SAED (1992), /// and /// in HOROWITZ and al (1991)

per hectare. In cases where the paddy rice is valorized at 60 CFAF per kilo (which is generally the case in the non-official markets), the production costs per hectare represent 3,300 kg of paddy. At CFAF 50 per kilo of paddy, the production costs represent 4,000 kg of paddy per hectare, i.e., about 80 percent of the average yields per hectare (5,012 kilograms per hectare), and above yields recorded in many of the perimeters (HOROWITZ and al, 1991; LEGAL, 1991; SAED, 1991b; SAED, 1992).

Given unchanging costs and constant technologies, a drop in farm gate prices below CFAF 60, could have the following consequences:

2.d.(1) Predictable Negative Impacts

-- If the conditions of production are unchanged, decreased farmgate prices result in the reduction in the net margin per hectare. In such a context, paddy production will be viable only in large farms which will then absorb the smaller ones.

-- Farmers could abandon progressively paddy rice cultivation to the profit of other irrigated crops such as maize and sorghum. Given the relatively low yields per unit of land for irrigated maize (2,500 to 3,000 kilograms per hectare) and sorghum (2,500 kilogram per hectare)[3], compared to paddy rice, and the fact that the available irrigated land per household is limited, this option will result in a short-run decrease in the rural income, particularly in the Delta.

-- In the middle and upper valley, where farmers have other agricultural options than irrigation, a drop in the farmgate prices of paddy could provoke a general shift from irrigation to recession and rainfed agriculture. This option is envisaged only if the hydrological and rainfall conditions are favorable. These trends were observed in 1988-89 and 1989-90 which witnessed fairly good rainfall and flooding conditions (NIASSE, 1991a, and 1991b). The risk associated with this option is that, if irrigated perimeters are abandoned for many years, farmers will not find it possible to return easily to irrigation if the hydro-climatic conditions worsen. The rehabilitation of infrastructures and equipment will require many years and important financial resources.

-- Farmers could react to a drop of paddy rice farm gate prices by reducing the input costs to a level compatible with market prices. Given that irrigation costs (water needs) are generally incompressible in paddy rice production, again given unchanging costs and technologies, farmers' choices will be limited to seeds and fertilizers. In many areas of the Senegal River Valley farmers have already stopped buying improved seeds. In addition,

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[3]. GERSAR/CACG and al., 1991, Annex, p. 27

the termination of subsidies on fertilizers has resulted in the drastic reduction of the amount of chemical fertilizers used per hectare in many perimeters. This practice (use of "exhausted" seeds and limited amounts of fertilizers) have already resulted in what is known as "extensive irrigation", i.e., low yields per unit of land (NIASSE, 1990). Extensive irrigation will have negative impacts not only on farmers' revenues, but also on the whole Apres-Barrage program because it will put into question the cost-effectiveness of the investments made to build dams and develop hydraulic infrastructures.

The potential negative effects of the elimination of administered farmgate prices for paddy could be amplified by other factors resulting from aspects of the liberalization of the rice sub-sector:

-- If the state-owned mills are closed (which is not excluded from the possibilities), the locally produced paddy rice will be processed essentially by small rice hullers. In these small mills, the conversion rate of the paddy to broken rice is estimated at 55 percent, i.e., far below the norm of 67 percent (SONED-Afrique, op. cit. 1989, 29)[4].

-- If the consumer prices of imported broken rice decreases as a result of the elimination of administered wholesale prices, paddy farmgate prices will decrease accordingly.

2.d.(2) Predictable Positive Impacts

The potential negative impacts of the reforms at the producer level could be attenuated by new opportunities offered by the liberalization of the rice sub-sector. These predictable opportunities include:

-- Intensification of paddy rice production: in order to safeguard their living conditions, farmers could react to a decrease in farmgate prices by increasing the yields per hectare (expanding the cultivable area generally requires financial resources that farmers do not have).

-- Increased competition at the processing level: the processing capacity of the Senegal River Valley (small hullers and industrial mills) is estimated at 330,000 metric tons, i.e., twice the total national production estimated at 177,000 metric

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[4]. For this reason, the multiplication of the number of small mills (estimated at more than 200 units) occurred in the mid-80s when the consumer price of the broken rice was CFAF 160. Since 1988, as a result of the reduction of the consumer price to CFAF 130, the small mills become less profitable (SONED, op. cit. 1989, 29)

tons in 1992-93. The elimination of SAED's official monopoly on paddy rice purchasing and the elimination of high paddy prices exclusively through the official channel will create better and fairer conditions for open competition between paddy processing units. This competition could help keep the paddy rice farmgate prices at a level compatible with production costs. In cases where producers decide to sell their production in local markets to themselves, they could benefit from decreased processing costs which will result in added competition between processors.

-- New opportunities for the integration of agriculture and livestock production: the disengagement of SAED from the processing of paddy rice could be an opportunity for the integration of agriculture and livestock production at the farm level. It is estimated that, in industrial mills, for each kilo of paddy processed, the product consists of 67 percent of rice (broken), 2 percent of "sankal" (finely broken rice which is consumed by people), 6 to 7 percent of bran subject to high demand by animal breeders, and more than 20 percent of "niagass" (mix of chaff and face powder) (BA and NIASSE, 1986, 551-552). When producers sell their paddy rice through the official channels, they have no access to the by-products derived from the processing of the paddy. These by-products are the property of SAED which sells them at 13 CFAF per kilo for the "niagass", 30 to 33 CFAF for the bran, and 65 CFAF for the "sankal" (SONED-Afrique, 1989, op. cit., 11). When the paddy is processed in the small hullers, these by-products are the property of the producer. Given the fact that the conversion rate is lower in these small hullers, the quantity of by-products is more important. The liberalization of the processing of paddy could encourage farmer developed-livestock production in order to have better use of their paddy rice by-products.

-- Equal opportunities for paddy producers: now only selected farmers benefit from the official prices of 85 CFAF per kilogram. These farmers are those living near the SAED mills installed in Ross-Bethio and Richard Toll.

-- Less dependence vis-a-vis usurers: those who have access to official prices must wait long periods before being paid by SAED. In the meantime, they are obliged to call on usurers to meet their survival needs.

-- Favorable environment for the development of the private sector: the disengagement of SAED from supplying inputs --such as fertilizers, pesticides, herbicides, and improved seeds-- and agricultural equipment --such as motor-pumps, tractors, spare parts-- has created new opportunities for business enterprises, newly emerging companies or companies expanding their activities

in this area include: Matforce, AFCO, Equiplus, Senchim, SOGEC[5] (McLindon, 1989, 9) . As a result of the alleviation of SAED tutelage over irrigation farmer, hundreds of independent farmer groups (GIEs) have emerged in the Senegal River Valley. These GIEs were estimated at 46 in 1986/87, 202 in 1987/88, and 360 in 1988/89 (McLINDON, 1989, 8). Given that all the Producer Groups (Groupements de Producteurs) have recently adopted GIE status, the number of GIEs in the Senegal River Valley is estimated at more than 1,200 (SAED, 1991b, 4). Some of them are federated into strong associations such as the Association of the Economic Interest Groups of the North (UGEN).

In sum, at the producer level the groups more exposed to the predictable adverse impacts of the reforms are the small paddy rice farmers, particularly in the Department of Dagana. Paddy rice, grown in irrigated parcels of 1 to 2 hectares, is their principal source of cash revenue, and covers an important share of their cereal consumption needs. In the agricultural sector, their choices are limited to irrigation. Within this agricultural system, a shift from paddy rice at the favor of cereals such as maize and sorghum will result in the short term in a significant decrease of farmers' agricultural revenues[6]. The best farmer strategy, in the context of a more liberalized rice sub-sector, consists of diversified irrigated crops combined with the association of agriculture and livestock production.

2.e. Impacts at the Consumer Level

In the rice sub-sector, Senegal is highly dependent on the international market to meet its needs. Senegalese annual consumption of rice is estimated at 420,000 to 450,000 metric tons. The contribution of the domestic production to the total consumption of rice represents only 22 to 23 percent. Among the regions of rice production, only the Department of Dagana have surpluses marketed in other regions. These surpluses are estimated at 20,000 to 25,000 metric tons (RABES, 1989, 5).

Rice occupies a central place in the household consumption patterns. It contributes 26 percent to total daily calorie consumption in Senegal, compared to 28 percent for millet/sorghum (LOWDERMILK, 1993, 9).

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[5]. Societe Generale pour le Commerce

[6]. Yields per unit of land are currently low for these crops, not because their potential is limited but because results of researches of these crops are not diffused in the Senegal river valley. For example tests undertaken by FAO and OMVS in 1974 demonstrated that some maize hybrids have a potential of 5 tons/hectare (ROBERTS, 1992,18)

Rice consumption is greater in urban areas than in rural areas. The 1992 Enquete prioritaire estimates the expenses for rice purchases by the average household at CFAF 6,800 per month. For Dakar which is the most urbanized region of the country, these expenses exceed CFAF 7,800 per household.

The removal of rice transport subsidies will result in an increase in consumer prices, particularly in regions situated far from Dakar. The liberalization of wholesale prices could result in a general increase at the consumer level. If this occurs, the most penalized populations will be those living in the urban areas of regions situated far from Dakar like Saint-Louis, Tambacounda, Kolda and Ziguinchor. For Saint-Louis, purchases of locally produced rice could attenuate the potential negative impacts of general increases in rice consumer prices.

The liberalization of wholesale prices and the elimination of fixed marketing margins could also result in the decrease of the consumer prices, which is beneficial at the consumption level but will have a negative impact at the production level, for both paddy rice and local cereals.

3. Conclusion

At the producer level, the implementation of the reforms supported by the RSA program will have, in the short term, their major effects in the Delta of the Senegal River (i.e., the Department of Dagana). The rural populations of this Department, estimated as farm-households, have to depend totally on irrigation for their agricultural revenues. Their have no other choices than this agricultural system. A general drop in paddy rice producer prices will have various effects on the living conditions of these populations.

In the medium and longer term, the best secure alternative to total dependence on paddy rice production is the diversification of the cropping systems combined with the association of agriculture and livestock production. This alternative is valid for the Delta as well as for the middle valley of the Senegal River and the Casamance.

At the consumer level, the most exposed population to possible increases in broken rice prices will be urban populations. If the consumer prices decrease, the production of paddy as well as of local cereals will be compromised.

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USAID PROJECT STATUTORY CHECKLIST

Introduction

The statutory checklist is divided into two parts: 5C(1) - Country Checklist; and 5C(2) - Assistance Checklist.

The Country Checklist, composed of items affecting the eligibility for foreign assistance of a country as a whole, is to be reviewed and completed by AID/W at the beginning of each fiscal year. In most cases responsibility for preparation of responses to the Country Checklist is assigned to the desk officers, who would work with the Assistant General Counsel for their region. The responsible officer should ensure that this part of the Checklist is updated periodically. The Checklist should be attached to the first PP of the fiscal year and then referenced in subsequent PPs.

The Assistance Checklist focuses on statutory items that directly concern assistance resources. The Assistance Checklist for FY 1993 includes items previously included under separate "project assistance," "nonproject assistance," and "standard item" checklists. The Assistance Checklist should be reviewed and completed in the field, but information should be requested from Washington whenever necessary. A completed Assistance Checklist should be included with each PP; however, the list should also be reviewed at the time a PID is prepared so that legal issues that bear on project design are identified early.

The Country and Assistance Checklists are organized according to categories of items relating to Development Assistance, the Economic Support Fund, or both.

These Checklists include the applicable statutory criteria from the Foreign Assistance Act of 1961 ("FAA"); various foreign assistance, foreign relations, anti-narcotics and international trade authorization enactments; and the FY 1993 Foreign Assistance Appropriations Act ("FY 1993 Appropriations Act").

These Checklists do not list every statutory provision that might be relevant. For example, they do not include country- specific limitations enacted, usually for a single year, in a foreign assistance appropriations act. Instead, the Checklists are intended to provide a convenient reference for provisions of relatively great importance and general applicability.

Prior to an actual obligation of funds, Missions are encouraged to review any Checklist completed at an earlier phase in a project or program cycle to determine whether more recently enacted provisions of law included on the most recent Checklist may now apply. Because of the reorganization and consolidation of checklists reflected here, such review may be particularly important this year. Space has been provided at the right of the Checklist questions for responses and notes.

5C(1) - COUNTRY CHECKLIST

Listed below are statutory criteria applicable to the eligibility of countries to receive the following categories of assistance: (A) both Development Assistance and Economic Support Funds; (B) Development Assistance funds only; or (C) Economic Support Funds only.

A. COUNTRY ELIGIBILITY CRITERIA APPLICABLE TO BOTH DEVELOPMENT ASSISTANCE AND ECONOMIC SUPPORT FUND ASSISTANCE

1. Narcotics Certification

(FAA Sec. 490): (This provision applies to assistance provided by grant, sale, loan, lease, credit, guaranty, or insurance, except assistance relating to international narcotics control, disaster and refugee relief assistance, narcotics related assistance, or the provision of food (including the monetization of food) or medicine, and the provision of non-agricultural commodities under P.L. 480. This provision also does not apply to assistance for child survival and AIDS programs which can, under section 542 of the FY 1993 Appropriations Act, be made available notwithstanding any provision of law that restricts assistance to foreign countries.) If the recipient is a "major illicit drug producing country" (defined as a country producing during a fiscal year at least five metric tons of opium or 500 metric tons of coca or marijuana) or a "major drug-transit country" (defined as a country that is a significant direct source of illicit drugs significantly affecting the United States, through which such drugs are transported, or through which significant sums of drug-related profits are laundered with the knowledge or complicity of the government):

Senegal is not a major illicit drug producing country.

(1) has the President in the April 1 International Narcotics Control Strategy Report (INSCR) determined and certified to the Congress (without Congressional enactment, within 45 calendar days, of a resolution disapproving such a

certification), that (a) during the previous year the country has cooperated fully with the United States or taken adequate steps on its own to satisfy the goals and objectives established by the U.N. Convention Against Illicit Traffic in Narcotic Drugs and Psychotropic Substances, or that (b) the vital national interests of the United States require the provision of such assistance?

(2) with regard to a major illicit drug producing or drug-transit country for which the President has not certified on April 1, has the President determined and certified to Congress on any other date (with enactment by Congress of a resolution approving such certification) that the vital national interests of the United States require the provision of assistance, and has also certified that (a) the country has undergone a fundamental change in government, or (b) there has been a fundamental change in the conditions that were the reason why the President had not made a "fully cooperating" certification.

2. **Indebtedness to U.S. citizens** (FAA Sec. 620(c): If assistance is to a government, is the government indebted to any U.S. citizen for goods or services furnished or ordered where: (a) such citizen has exhausted available legal remedies, (b) the debt is not denied or contested by such government, or (c) the indebtedness arises under an unconditional guaranty of payment given by such government or controlled entity? **NO**

3. **Seizure of U.S. Property** (FAA Sec. 620(e)(1)): If assistance is to a government, has it (including any government agencies or subdivisions) taken any action which has the effect of nationalizing, expropriating, or otherwise seizing ownership or control of property of U.S. citizens or entities beneficially owned by them without taking steps to discharge its obligations toward such citizens or entities? **NO**

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4. **Communist countries** (FAA Secs. 620(a), 620(f), 620D; FY 1993 Appropriations Act Secs. 512, 543): Is recipient country a Communist country? If so, has the President: (a) determined that assistance to the country is vital to the security of the United States, that the recipient country is not controlled by the international Communist conspiracy, and that such assistance will further promote the independence of the recipient country from international communism, or (b) removed a country from applicable restrictions on assistance to communist countries upon a determination and report to Congress that such action is important to the national interest of the United States? Will assistance be provided either directly or indirectly to Angola, Cambodia, Cuba, Iraq, Libya, Vietnam, Iran or Syria? Will assistance be provided to Afghanistan without a certification, or will assistance be provided inside Afghanistan through the Soviet-controlled government of Afghanistan?	**NO**
5. **Mob Action** (FAA Sec. 620(j)): Has the country permitted, or failed to take adequate measures to prevent, damage or destruction by mob action of U.S. property?	**NO**
6. **OPIC Investment Guaranty** (FAA Sec. 620(l)): Has the country failed to enter into an investment guaranty agreement with OPIC?	**NO**
7. **Seizure of U.S. Fishing Vessels** (FAA Sec. 620(o); Fishermen's Protective Act of 1967 (as amended) Sec. 5): (a) Has the country seized, or imposed any penalty or sanction against, any U.S. fishing vessel because of fishing activities in international waters? (b) If so, has any deduction required by the Fishermen's Protective Act been made?	**NO**
8. **Loan Default** (FAA Sec. 620(q); FY 1993 Appropriations Act Sec. 518 (Brooke Amendment)): (a) Has the government of the recipient country been in default for more than six months on interest or principal of any loan to the country under the FAA? (b) Has the country been in default for more	**(a) Yes, but the Secretary of State has waived the application of Section 620(q) for Senegal. (b) Yes, however no assistance will be obligated or furnished to the GOS under the**

than one year on interest or principal on any U.S. loan under a program for which the FY 1990 Appropriations Act appropriates funds?	**Program or Project until Senegal is out of the Brooke Sanctions.**
9. **Military Equipment** (FAA Sec. 620(s)): If contemplated assistance is development loan or to come from Economic Support Fund, has the Administrator taken into account the percentage of the country's budget and amount of the country's foreign exchange or other resources spent on military equipment? (Reference may be made to the annual "Taking Into Consideration" memo: "Yes, taken into account by the Administrator at time of approval of Agency OYB." This approval by the Administrator of the Operational Year Budget can be the basis for an affirmative answer during the fiscal year unless significant changes in circumstances occur.)	**N/A**
10. **Diplomatic Relations with U.S.** (FAA Sec. 620(t)): Has the country severed diplomatic relations with the United States? If so, have relations been resumed and have new bilateral assistance agreements been negotiated and entered into since such resumption?	**NO**
11. **U.N. Obligations** (FAA Sec. 620(u)): What is the payment status of the country's U.N. obligations? If the country is in arrears, were such arrearages taken into account by the A.I.D. Administrator in determining the current A.I.D. Operational Year Budget? (Reference may be made to the "Taking into Consideration" memo.)	**The A/A's FY 93 Taking Into Consideration Memo concluded that Senegal is not in arrears in payment of its UN obligation.**
12. **International Terrorism**	
a. **Sanctuary and support** (FY 1993 Appropriations Act Sec. 554; FAA Sec. 620A): Has the country been determined by the President to: (a) grant sanctuary from prosecution to any individual or group which has committed an act of international terrorism, or (b) otherwise support international terrorism, unless the President has waived this restriction on grounds of national security or for humanitarian reasons?	**NO**

b. **Airport Security** (ISDCA of 1985 Sec. 552(b). Has the Secretary of State determined that the country is a high terrorist threat country after the Secretary of Transportation has determined, pursuant to section 1115(e)(2) of the Federal Aviation Act of 1958, that an airport in the country does not maintain and administer effective security measures?	**NO**
13. **Discrimination** (FAA Sec. 666(b)): Does the country object, on the basis of race, religion, national origin or sex, to the presence of any officer or employee of the U.S. who is present in such country to carry out economic development programs under the FAA?	**NO**
14. **Nuclear Technology** (FAA Secs. 669, 670): Has the country, after August 3, 1977, delivered to any other country or received nuclear enrichment or reprocessing equipment, materials, or technology, without specified arrangements or safeguards, and without special certification by the President? Has it transferred a nuclear explosive device to a non-nuclear weapon state, or if such a state, either received or detonated a nuclear explosive device? If the country is a non-nuclear weapon state, has it, on or after August 8, 1985, exported (or attempted to export) illegally from the United States any material, equipment, or technology which would contribute significantly to the ability of a country to manufacture a nuclear explosive device? (FAA Sec. 620E permits a special waiver of Sec. 669 for Pakistan.)	**NO**
15. **Algiers Meeting** (ISDCA of 1981, Sec. 720): Was the country represented at the Meeting of Ministers of Foreign Affairs and Heads of Delegations of the Non-Aligned Countries to the 36th General Assembly of the U.N. on Sept. 25 and 28, 1981, and did it fail to disassociate itself from the communique issued? If so, has the President taken it into account? (Reference may be made to the "Taking into Consideration" memo.)	**Yes. The A/AID has taken this into account in the FY 93 Taking Into Consideration Memorandum.**

16. **Military Coup** (FY 1993 Appropriations Act Sec. 513): Has the duly elected Head of Government of the country been deposed by military coup or decree? If assistance has been terminated, has the President notified Congress that a democratically elected government has taken office prior to the resumption of assistance? **NO**

17. **Refugee Cooperation** (FY 1993 Appropriations Act Sec. 538): Does the recipient country fully cooperate with the international refugee assistance organizations, the United States, and other governments in facilitating lasting solutions to refugee situations, including resettlement without respect to race, sex, religion, or national origin? **YES**

18. **Exploitation of Children** (FAA Sec. 116(b)): Does the recipient government fail to take appropriate and adequate measures, within its means, to protect children from exploitation, abuse or forced conscription into military or paramilitary services? **NO**

B. COUNTRY ELIGIBILITY CRITERIA APPLICABLE ONLY TO DEVELOPMENT ASSISTANCE ("DA")

1. **Human Rights Violations** (FAA Sec. 116): Has the Department of State determined that this government has engaged in a consistent pattern of gross violations of internationally recognized human rights? If so, can it be demonstrated that contemplated assistance will directly benefit the needy? **NO**

2. **Abortions** (FY 1993 Appropriations Act Sec. 534): Has the President certified that use of DA funds by this country would violate any of the prohibitions against use of funds to pay for the performance of abortions as a method of family planning, to motivate or coerce any person to practice abortions, to pay for the performance of involuntarysterilization as a method of family planning, to coerce or provide any financial incentive to any person to undergo sterilizations, to pay for any biomedical **NO**

research which relates, in whole or in part, to methods of, or the performance of, abortions or involuntary sterilization as a means of family planning?

C. COUNTRY ELIGIBILITY CRITERIA APPLICABLE ONLY TO ECONOMIC SUPPORT FUNDS ("ESF")

Human Rights Violations (FAA Sec. 502B): Has it been determined that the country has engaged in a consistent pattern of gross violations of internationally recognized human rights? If so, has the President found that the country made such significant improvement in its human rights record that furnishing such assistance is in the U.S. national interest? **N/A**

5C(2) - ASSISTANCE CHECKLIST

Listed below are statutory criteria applicable to the assistance resources themselves, rather than to the eligibility of a country to receive assistance. This section is divided into three parts. Part A includes criteria applicable to both Development Assistance and Economic Support Fund resources. Part B includes criteria applicable only to Development Assistance resources. Part C includes criteria applicable only to Economic Support Funds.

CROSS REFERENCE: IS COUNTRY CHECKLIST UP TO DATE?

A. CRITERIA APPLICABLE TO BOTH DEVELOPMENT ASSISTANCE AND ECONOMIC SUPPORT FUNDS

1. **Host Country Development Efforts** (FAA Sec. 601(a)): Information and conclusions on whether assistance will encourage efforts of the country to: (a) increase the flow of international trade; (b) foster private initiative and competition; (c) encourage development and use of cooperatives, credit unions, and savings and loan associations; (d) discourage monopolistic practices; (e) improve technical efficiency of industry, agriculture, and commerce; and (f) strengthen free labor unions.

(a) and (b): The emphasis of the Program is on elimination of administered prices in the rice sector. Private trade and competition will be enhanced through the elimination of parastatals controlling rice pricing, marketing and processing.

2. **U.S. Private Trade and Investment** (FAA Sec. 601(b)): Information and conclusions on how assistance will encourage U.S. private trade and investment abroad and encourage private U.S. participation in foreign assistance programs (including use of private trade channels and the services of U.S. private enterprise).

Private trade will be stimulated through elimination of pricing and marketing restrictions on rice.

3. **Congressional Notification**

a. **General requirement** (FY 1993 Appropriations Act Sec. 522; FAA Sec. 634A): If money is to be obligated for an activity not previously justified to Congress, or for an amount in excess of amount previously justified to Congress, has Congress been properly notified (unless the Appropriations Act notification requirement has been waived

No. Congress has not yet been notified, but will be appropriately notified before obligation of funds.

because of substantial risk to human health or welfare)?

b. **Notice of new account obligation** (FY 1993 Appropriations Act Sec. 514): If funds are being obligated under an appropriation account to which they were not appropriated, has the President consulted with and provided a written justification to the House and Senate Appropriations Committees and has such obligation been subject to regular notification procedures?

N/A

c. **Cash transfers and nonproject sector assistance** (FY 1993 Appropriations Act Sec. 571(b)(3)): If funds are to be made available in the form of cash transfer or nonproject sector assistance, has the Congressional notice included a detailed description of how the funds will be used, with a discussion of U.S. interests to be served and a description of any economic policy reforms to be promoted?

Yes. The CN will contain this information for the NPA program.

4. **Engineering and Financial Plans** (FAA Sec. 611(a)): Prior to an obligation in excess of $500,000, will there be: (a) engineering, financial or other plans necessary to carry out the assistance; and (b) a reasonably firm estimate of the cost to the U.S. of the assistance?

YES

5. **Legislative Action** (FAA Sec. 611(a)(2)): If legislative action is required within recipient country with respect to an obligation in excess of $500,000, what is the basis for a reasonable expectation that such action will be completed in time to permit orderly accomplishment of the purpose of the assistance?

No further legislative action is required.

6. **Water Resources** (FAA Sec. 611(b); FY 1993 Appropriations Act Sec. 501): If project is for water or water-related land resource construction, have benefits and costs been computed to the extent practicable in accordance with the principles, standards, and procedures established pursuant to the Water Resources Planning Act (42 U.S.C. 1962, et seq.)? (See A.I.D. Handbook 3 for guidelines.)

This is not a water or water-related land resource project.

7. **Cash Transfer and Sector Assistance** (FY 1993 Appropriations Act Sec. 571(b)): Will cash transfer or nonproject sector assistance be maintained in a separate account and not commingled with other funds (unless such requirements are waived by Congressional notice for nonproject sector assistance)?

A waiver will be requested for this program since Senegal is a West African Monetary Union member.

8. **Capital Assistance** (FAA Sec. 611(e)): If project is capital assistance (e.g., construction), and total U.S. assistance for it will exceed $1 million, has Mission Director certified and Regional Assistant Administrator taken into consideration the country's capability to maintain and utilize the project effectively?

This is NPA - not a capital project.

9. **Multiple Country Objectives** (FAA Sec. 601(a)): Information and conclusions on whether projects will encourage efforts of the country to: (a) increase the flow of international trade; (b) foster private initiative and competition; (c) encourage development and use of cooperatives, credit unions, and savings and loan associations; (d) discourage monopolistic practices; (e) improve technical efficiency of industry, agriculture and commerce; and (f) strengthen free labor unions.

(a) (b) (d): The Program will abolish monopolistic parastatals. It will also encourage private trade and competition through elimination of price, processing and marketing restrictions.
(c) (e) (f): N/A

10. **U.S. Private Trade** (FAA Sec. 601(b)): Information and conclusions on how project will encourage U.S. private trade and investment abroad and encourage private U.S. participation in foreign assistance programs (including use of private trade channels and the services of U.S. private enterprise).

UPA staff will benefit from US seminars, conferences or short-term training.

11. **Local Currencies**

a. **Recipient Contributions** (FAA Secs. 612(b), 636(h)): Describe steps taken to assure that, to the maximum extent possible, the country is contributing local currencies to meet the cost of contractual and other services, and foreign currencies owned by the U.S. are utilized in lieu of dollars.

The GOS agency, UPA will seek to obtain its own resources to contract for and finance studies under the Program.

b. **U.S.-Owned Currency** (FAA Sec. 612(d)): Does the U.S. own excess foreign currency of the country and, if so, what arrangements have been made for its release?

NO

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c. **Separate Account** (FY 1993 Appropriations Act Sec. 571). If assistance is furnished to a foreign government under arrangements which result in the generation of local currencies:

Because Senegal is a member of the West African Monetary Union, it is exempt from the separate account requirement.

(1) Has A.I.D. (a) required that local currencies be deposited in a separate account established by the recipient government, (b) entered into an agreement with that government providing the amount of local currencies to be generated and the terms and conditions under which the currencies so deposited may be utilized, and (c) established by agreement the responsibilities of A.I.D. and that government to monitor and account for deposits into and disbursements from the separate account?

(2) Will such local currencies, or an equivalent amount of local currencies, be used only to carry out the purposes of the DA or ESF chapters of the FAA (depending on which chapter is the source of the assistance) or for the administrative requirements of the United States Government?

(3) Has A.I.D. taken all appropriate steps to ensure that the equivalent of local currencies disbursed from the separate account are used for the agreed purposes?

(4) If assistance is terminated to a country, will any unencumbered balances of funds remaining in a separate account be disposed of for purposes agreed to by the recipient government and the United States Government?

12. **Trade Restrictions**

a. **Surplus Commodities** (FY 1993 Appropriations Act Sec. 520(a)): If assistance is for the production of any commodity for export, is the commodity likely to be in surplus on world markets at the time the resulting productive capacity become operative, and is such assistance likely to cause substantial injury to U.S. producers of the same, similar or competing commodity?

N/A

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b. **Textiles (Lautenberg Amendment)** (FY 1993 Appropriations Act Sec. 520(c)): Will the assistance (except for programs in Caribbean Basin Initiative countries under U.S. Tariff Schedule "Section 807," which allows reduced tariffs on articles assembled abroad from U.S.-made components) be used directly to procure feasibility studies, prefeasibility studies, or project profiles of potential investment in, or to assist the establishment of facilities specifically designed for, the manufacture for export to the United States or to third country markets in direct competition with U.S. exports, of textiles, apparel, footwear, handbags, flat goods (such as wallets or coin purses worn on the person), work gloves or leather wearing apparel? **NO**

13. **Tropical Forests** (FY 1991 Appropriations Act Sec. 533(c)(3)(as referenced in section 532(d) of the FY 1993 Appropriations Act): Will funds be used for any program, project or activity which would (a) result in any significant loss of tropical forests, or (b) involve industrial timber extraction in primary tropical forest areas? **NO**

14. **PVO Assistance**

a. **Auditing and registration** (FY 1993 Appropriations Act Sec. 536): If assistance is being made available to a PVO, has that organization provided upon timely request any document, file, or record necessary to the auditing requirements of A.I.D., and is the PVO registered with A.I.D.? **No assistance will be made available to PVOs.**

b. **Funding sources** (FY 1993 Appropriations Act, Title II, under heading "Private and Voluntary Organizations"): If assistance is to be made to a United States PVO (other than a cooperative development organization), does it obtain at least 20 percent of its total annual funding for international activities from sources other than the United States Government? **N/A**

15. **Project Agreement Documentation** (State Authorization Sec. 139 (as interpreted

by conference report)): Has confirmation of the date of signing of the project agreement, including the amount involved, been cabled to State L/T and A.I.D. LEG within 60 days of the agreement's entry into force with respect to the United States, and has the full text of the agreement been pouched to those same offices? (See Handbook 3, Appendix 6G for agreements covered by this provision).

YES

16. **Metric System** (Omnibus Trade and Competitiveness Act of 1988 Sec. 5164, as interpreted by conference report, amending Metric Conversion Act of 1975 Sec. 2, and as implemented through A.I.D. policy): Does the assistance activity use the metric system of measurement in its procurements, grants, and other business-related activities, except to the extent that such use is impractical or is likely to cause significant inefficiencies or loss of markets to United States firms? Are bulk purchases usually to be made in metric, and are components, subassemblies, and semi-fabricated materials to be specified in metric units when economically available and technically adequate? Will A.I.D. specifications use metric units of measure from the earliest programmatic stages, and from the earliest documentation of the assistance processes (for example, project papers) involving quantifiable measurements (length, area, volume, capacity, mass and weight), through the implementation stage?

17. **Women in Development** (FY 1993 Appropriations Act, Title II, under heading "Women in Development"): Will assistance be designed so that the percentage of women participants will be demonstrably increased?

Yes. Income at the household level (e.g. rice paddy farmers) will be increased by this Program.

18. **Regional and Multilateral Assistance** (FAA Sec. 209): Is assistance more efficiently and effectively provided through regional or multilateral organizations? If so, why is assistance not so provided? Information and conclusions on whether assistance will encourage developing countries to cooperate in regional development programs.

NO

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19. **Abortions** (FY 1993 Appropriations Act, Title II, under heading "Population, DA," and Sec. 524):

a. Will assistance be made available to any organization or program which, as determined by the President, supports or participates in the management of a program of coercive abortion or involuntary sterilization? **NO**

b. Will any funds be used to lobby for abortion?

20. **Cooperatives** (FAA Sec. 111): Will assistance help develop cooperatives, especially by technical assistance, to assist rural and urban poor to help themselves toward a better life? **NO**

21. **U.S.-Owned Foreign Currencies**

a. **Use of currencies** (FAA Secs. 612(b), 636(h); FY 1993 Appropriations Act Secs. 507, 509): Are steps being taken to assure that, to the maximum extent possible, foreign currencies owned by the U.S. are utilized in lieu of dollars to meet the cost of contractual and other services. **YES**

b. **Release of currencies** (FAA Sec. 612(d)): Does the U.S. own excess foreign currency of the country and, if so, what arrangements have been made for its release? **NO**

22. **Procurement**

a. **Small business** (FAA Sec. 602(a)): Are there arrangements to permit U.S. small business to participate equitably in the furnishing of commodities and services financed? **Yes. Small businesses are eligible to carry out studies.**

b. **U.S. procurement** (FAA Sec. 604(a) as amended by section 597 of the FY 1993 Appropriations Act): Will all procurement be from the U.S., the recipient country, or developing countries except as otherwise determined in accordance with the criteria of this section? **YES**

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c. **Marine insurance** (FAA Sec. 604(d)): If the cooperating country discriminates against marine insurance companies authorized to do business in the U.S., will commodities be insured in the United States against marine risk with such a company?

Senegal does not discriminate.

d. **Non-U.S. agricultural procurement** (FAA Sec. 604(e)): If non-U.S. procurement of agricultural commodity or product thereof is to be financed, is there provision against such procurement when the domestic price of such commodity is less than parity? (Exception where commodity financed could not reasonably be procured in U.S.)

N/A

e. **Construction or engineering services** (FAA Sec. 604(g)): Will construction or engineering services be procured from firms of advanced developing countries which are otherwise eligible under Code 941 and which have attained a competitive capability in international markets in one of these areas? (Exception for those countries which receive direct economic assistance under the FAA and permit United States firms to compete for construction or engineering services financed from assistance programs of these countries.)

N/A

f. **Cargo preference shipping** (FAA Sec. 603)): Is the shipping excluded from compliance with the requirement in section 901(b) of the Merchant Marine Act of 1936, as amended, that at least 50 percent of the gross tonnage of commodities (computed separately for dry bulk carriers, dry cargo liners, and tankers) financed shall be transported on privately owned U.S. flag commercial vessels to the extent such vessels are available at fair and reasonable rates?

N/A

g. **Technical assistance** (FAA Sec. 621(a)): If technical assistance is financed, will such assistance be furnished by private enterprise on a contract basis to the fullest extent practicable? Will the facilities and resources of other Federal agencies be utilized, when they are particularly suitable, not competitive with private enterprise, and made available without undue interference with domestic programs?

YES

h. **U.S. air carriers** (International Air Transportation Fair Competitive Practices Act, 1974): If air transportation of persons or property is financed on grant basis, will U.S. carriers be used to the extent such service is available? **YES**

i. **Termination for convenience of U.S. Government** (FY 1993 Appropriations Act Sec. 504): If the U.S. Government is a party to a contract for procurement, does the contract contain a provision authorizing termination of such contract for the convenience of the United States? **YES**

j. **Consulting services** (FY 1993 Appropriations Act Sec. 523): If assistance is for consulting service through procurement contract pursuant to 5 U.S.C. 3109, are contract expenditures a matter of public record and available for public inspection (unless otherwise provided by law or Executive order)? **YES**

k. **Metric conversion** (Omnibus Trade and Competitiveness Act of 1988, as interpreted by conference report, amending Metric Conversion Act of 1975 Sec. 2, and as implemented through A.I.D. policy): Does the assistance program use the metric system of measurement in its procurements, grants, and other business-related activities, except to the extent that such use is impractical or is likely to cause significant inefficiencies or loss of markets to United States firms? Are bulk purchases usually to be made in metric, and are components, subassemblies, and semi-fabricated materials to be specified in metric units when economically available and technically adequate? Will A.I.D. specifications use metric units of measure from the earliest programmatic stages, and from the earliest documentation of the assistance processes (for example, project papers) involving quantifiable measurements (length, area, volume, capacity, mass and weight), through the implementation stage? **YES**

l. **Competitive Selection Procedures** (FAA Sec. 601(e)): Will the assistance utilize competitive selection procedures for

the awarding of contracts, except where applicable procurement rules allow otherwise?	**YES**
23. **Construction**	
a. **Capital project** (FAA Sec. 601(d)): If capital (e.g., construction) project, will U.S. engineering and professional services be used?	**a. This is not a capital project.**
b. **Construction contract** (FAA Sec. 611(c)): If contracts for construction are to be financed, will they be let on a competitive basis to maximum extent practicable?	**b. There will be no direct financing of any construction activity.**
c. **Large projects, Congressional approval** (FAA Sec. 620(k)): If for construction of productive enterprise, will aggregate value of assistance to be furnished by the U.S. not exceed $100 million (except for productive enterprises in Egypt that were described in the Congressional Presentation), or does assistance have the express approval of Congress?	**There will be no financing of large construction projects.**
24. **U.S. Audit Rights** (FAA Sec. 301(d)): If fund is established solely by U.S. contributions and administered by an international organization, does Comptroller General have audit rights?	**YES**
25. **Communist Assistance** (FAA Sec. 620(h). Do arrangements exist to insure that United States foreign aid is not used in a manner which, contrary to the best interests of the United States, promotes or assists the foreign aid projects or activities of the Communist-bloc countries?	**YES**
26. **Narcotics**	
a. **Cash reimbursements** (FAA Sec. 483): Will arrangements preclude use of financing to make reimbursements, in the form of cash payments, to persons whose illicit drug crops are eradicated?	**YES**
b. **Assistance to narcotics traffickers** (FAA Sec. 487): Will arrangements take "all reasonable steps" to preclude use of financing to or through individuals or entities which we know or have reason to	**YES**

believe have either: (1) been convicted of a violation of any law or regulation of the United States or a foreign country relating to narcotics (or other controlled substances); or (2) been an illicit trafficker in, or otherwise involved in the illicit trafficking of, any such controlled substance?

27. **Expropriation and Land Reform** (FAA Sec. 620(g)): Will assistance preclude use of financing to compensate owners for expropriated or nationalized property, except to compensate foreign nationals in accordance with a land reform program certified by the President? **YES**

28. **Police and Prisons** (FAA Sec. 660): Will assistance preclude use of financing to provide training, advice, or any financial support for police, prisons, or other law enforcement forces, except for narcotics programs? **YES**

29. **CIA Activities** (FAA Sec. 662): Will assistance preclude use of financing for CIA activities? **YES**

30. **Motor Vehicles** (FAA Sec. 636(i)): Will assistance preclude use of financing for purchase, sale, long-term lease, exchange or guaranty of the sale of motor vehicles manufactured outside U.S., unless a waiver is obtained? **YES**

31. **Military Personnel** (FY 1993 Appropriations Act Sec. 503): Will assistance preclude use of financing to pay pensions, annuities, retirement pay, or adjusted service compensation for prior or current military personnel? **YES**

32. **Payment of U.N. Assessments** (FY 1993 Appropriations Act Sec. 505): Will assistance preclude use of financing to pay U.N. assessments, arrearages or dues? **YES**

33. **Multilateral Organization Lending** (FY 1993 Appropriations Act Sec. 506): Will assistance preclude use of financing to carry out provisions of FAA section 209(d) (transfer of FAA funds to multilateral organizations for lending)? **YES**

34. **Export of Nuclear Resources** (FY 1993 Appropriations Act Sec. 510): Will assistance preclude use of financing to finance the export of nuclear equipment, fuel, or technology? **YES**

35. **Repression of Population** (FY 1993 Appropriations Act Sec. 511): Will assistance preclude use of financing for the purpose of aiding the efforts of the government of such country to repress the legitimate rights of the population of such country contrary to the Universal Declaration of Human Rights? **YES**

36. **Publicity or Propaganda** (FY 1993 Appropriations Act Sec. 516): Will assistance be used for publicity or propaganda purposes designed to support or defeat legislation pending before Congress, to influence in any way the outcome of a political election in the United States, or for any publicity or propaganda purposes not authorized by Congress? **NO**

37. **Marine Insurance** (FY 1993 Appropriations Act Sec. 560): Will any A.I.D. contract and solicitation, and subcontract entered into under such contract, include a clause requiring that U.S. marine insurance companies have a fair opportunity to bid for marine insurance when such insurance is necessary or appropriate? **YES**

38. **Exchange for Prohibited Act** (FY 1993 Appropriations Act Sec. 565): Will any assistance be provided to any foreign government (including any instrumentality or agency thereof), foreign person, or United States person in exchange for that foreign government or person undertaking any action which is, if carried out by the United States Government, a United States official or employee, expressly prohibited by a provision of United States law? **NO**

39. **Commitment of Funds** (FAA Sec. 635(h)): Does a contract or agreement entail a commitment for the expenditure of funds during a period in excess of 5 years from the date of the contract or agreement? **NO**

40. **Impact on U.S. Jobs** (FY 1993 Appropriations Act, Sec. 599):

(a) Will any financial incentive be provided to a business located in the U.S. for the purpose of inducing that business to relocate outside the U.S. in a manner that would likely reduce the number of U.S. employees of that business? **NO**

(b) Will assistance be provided for the purpose of establishing or developing an export processing zone or designated area in which the country's tax, tariff, labor, environment, and safety laws do not apply? If so, has the President determined and certified that such assistance is not likely to cause a loss of jobs within the U.S.? **NO**

(c) Will assistance be provided for a project or activity that contributes to the violation of internationally recognized workers rights, as defined in section 502(a)(4) of the Trade Act of 1974, of workers in the recipient country? **NO**

B. CRITERIA APPLICABLE TO DEVELOPMENT ASSISTANCE ONLY

1. **Agricultural Exports (Bumpers Amendment)** (FY 1993 Appropriations Act Sec. 520(b), as interpreted by conference report for original enactment): If assistance is for agricultural development activities (specifically, any testing or breeding feasibility study, variety improvement or introduction, consultancy, publication, conference, or training), are such activities: (1) specifically and principally designed to increase agricultural exports by the host country to a country other than the United States, where the export would lead to direct competition in that third country with exports of a similar commodity grown or produced in the United States, and can the activities reasonably be expected to cause substantial injury to U.S. exporters of a similar agricultural commodity; or (2) in support of research that is intended primarily to benefit U.S. producers?

Program assistance is not for agricultural development activities. It is for rice policy reform.

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2. **Tied Aid Credits** (FY 1993 Appropriations Act, Title II, under heading "Economic Support Fund"): Will DA funds be used for tied aid credits?

N/A

3. **Appropriate Technology** (FAA Sec. 107): Is special emphasis placed on use of appropriate technology (defined as relatively smaller, cost-saving, labor-using technologies that are generally most appropriate for the small farms, small businesses, and small incomes of the poor)?

N/A

4. **Indigenous Needs and Resources** (FAA Sec. 281(b)): Describe extent to which the activity recognizes the particular needs, desires, and capacities of the people of the country; utilizes the country's intellectual resources to encourage institutional development; and supports civic education and training in skills required for effective participation in governmental and political processes essential to self-government.

4. The program is consistent with the GOS's strategy to change its agric. policy, cut state intervention in the rural economy and increase private sector decision-making in agriculture

5. **Economic Development** (FAA Sec. 101(a)): Does the activity give reasonable promise of contributing to the development of economic resources, or to the increase of productive capacities and self-sustaining economic growth?

5. If the constraints to a dynamic rice subsector are overcome, the chances are good for increased efficiency, productive capacity of rice farmers and economic growth.

6. **Special Development Emphases** (FAA Secs. 102(b), 113, 281(a)): Describe extent to which activity will: (a) effectively involve the poor in development by extending access to economy at local level, increasing labor-intensive production and the use of appropriate technology, dispersing investment from cities to small towns and rural areas, and insuring wide participation of the poor in the benefits of development on a sustained basis, using appropriate U.S. institutions; (b) encourage democratic private and local governmental institutions; (c) support the self-help efforts of developing countries; (d) promote the participation of women in the national economies of developing countries and the improvement of women's status; and (e) utilize and encourage regional cooperation by developing countries.

6.(a) Incomes of rice paddy farmers will be increased. (b) (c) Eliminations of the GOS rice parastatal, will encourage the trade and/or the private sector participation in the rice sector. (d) (e): N/A

7. **Recipient Country Contribution** (FAA Secs. 110, 124(d)): Will the recipient country provide at least 25 percent of the costs of the program, project, or activity with respect to which the assistance is to be furnished (or is the latter cost-sharing requirement being waived for a "relatively least developed" country)?

A waiver of FAA Sec. 110 will be requested from the AA/AFR.

8. **Benefit to Poor Majority** (FAA Sec. 128(b)): If the activity attempts to increase the institutional capabilities of private organizations or the government of the country, or if it attempts to stimulate scientific and technological research, has it been designed and will it be monitored to ensure that the ultimate beneficiaries are the poor majority?

The intended beneficiaries are rice paddy farmers whose incomes will be increased as a result of this program.

9. **Abortions** (FAA Sec. 104(f); FY 1993 Appropriations Act, Title II, under heading "Population, DA," and Sec. 534):

N/A

a. Are any of the funds to be used for the performance of abortions as a method of family planning or to motivate or coerce any person to practice abortions?

b. Are any of the funds to be used to pay for the performance of involuntary sterilization as a method of family planning or to coerce or provide any financial incentive to any person to undergo sterilizations?

c. Are any of the funds to be made available to any organization or program which, as determined by the President, supports or participates in the management of a program of coercive abortion or involuntary sterilization?

d. Will funds be made available only to voluntary family planning projects which offer, either directly or through referral to, or information about access to, a broad range of family planning methods and services?

e. In awarding grants for natural family planning, will any applicant be discriminated against because of such

applicant's religious or conscientious commitment to offer only natural family planning?

f. Are any of the funds to be used to pay for any biomedical research which relates, in whole or in part, to methods of, or the performance of, abortions or involuntary sterilization as a means of family planning?

g. Are any of the funds to be made available to any organization if the President certifies that the use of these funds by such organization would violate any of the above provisions related to abortions and involuntary sterilization?

10. **Contract Awards** (FAA Sec. 601(e)): Will the project utilize competitive selection procedures for the awarding of contracts, except where applicable procurement rules allow otherwise? **YES**

11. **Disadvantaged Enterprises** (FY 1993 Appropriations Act Sec. 563): What portion of the funds will be available only for activities of economically and socially disadvantaged enterprises, historically black colleges and universities, colleges and universities having a student body in which more than 40 percent of the students are Hispanic Americans, and private and voluntary organizations which are controlled by individuals who are black Americans, Hispanic Americans, or Native Americans, or who are economically or socially disadvantaged (including women)? **If other than local procurement is carried out, Gray Amendment entities will be encouraged to participate.**

12. **Biological Diversity** (FAA Sec. 119(g): Will the assistance: (a) support training and education efforts which improve the capacity of recipient countries to prevent loss of biological diversity; (b) be provided under a long-term agreement in which the recipient country agrees to protect ecosystems or other wildlife habitats; (c) support efforts to identify and survey ecosystems in recipient countries worthy of protection; or (d) by any direct or indirect means significantly degrade national parks or **N/A**

similar protected areas or introduce exotic plants or animals into such areas?

13. **Tropical Forests** (FAA Sec. 118; FY 1991 Appropriations Act Sec. 533(c) as referenced in section 532(d) of the FY 1993 Appropriations Act): **N/A**

a. **A.I.D. Regulation 16:** Does the assistance comply with the environmental procedures set forth in A.I.D. Regulation 16? **YES**

b. **Conservation:** Does the assistance place a high priority on conservation and sustainable management of tropical forests? Specifically, does the assistance, to the fullest extent feasible: (1) stress the importance of conserving and sustainably managing forest resources; (2) support activities which offer employment and income alternatives to those who otherwise would cause destruction and loss of forests, and help countries identify and implement alternatives to colonizing forested areas; (3) support training programs, educational efforts, and the establishment or strengthening of institutions to improve forest management; (4) help end destructive slash-and-burn agriculture by supporting stable and productive farming practices; (5) help conserve forests which have not yet been degraded by helping to increase production on lands already cleared or degraded; (6) conserve forested watersheds and rehabilitate those which have been deforested; (7) support training, research, and other actions which lead to sustainable and more environmentally sound practices for timber harvesting, removal, and processing; (8) support research to expand knowledge of tropical forests and identify alternatives which will prevent forest destruction, loss, or degradation; (9) conserve biological diversity in forest areas by supporting efforts to identify, establish, and maintain a representative network of protected tropical forest ecosystems on a worldwide basis, by making the establishment of protected areas a condition of support for activities involving forest clearance or degradation, and by helping to identify tropical forest ecosystems and species in need of protection and establish and maintain

There are no tropical forests in Senegal and the program does not have an impact in this area.

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appropriate protected areas; (10) seek to increase the awareness of U.S. Government agencies and other donors of the immediate and long-term value of tropical forests; (11) utilize the resources and abilities of all relevant U.S. government agencies; (12) be based upon careful analysis of the alternatives available to achieve the best sustainable use of the land; and (13) take full account of the environmental impacts of the proposed activities on biological diversity?

c. **Forest degradation:** Will assistance be used for: (1) the procurement or use of logging equipment, unless an environmental assessment indicates that all timber harvesting operations involved will be conducted in an environmentally sound manner and that the proposed activity will produce positive economic benefits and sustainable forest management systems; (2) actions which will significantly degrade national parks or similar protected areas which contain tropical forests, or introduce exotic plants or animals into such areas; (3) activities which would result in the conversion of forest lands to the rearing of livestock; (4) the construction, upgrading, or maintenance of roads (including temporary haul roads for logging or other extractive industries) which pass through relatively undergraded forest lands; (5) the colonization of forest lands; or (6) the construction of dams or other water control structures which flood relatively undergraded forest lands, unless with respect to each such activity an environmental assessment indicates that the activity will contribute significantly and directly to improving the livelihood of the rural poor and will be conducted in an environmentally sound manner which supports sustainable development? **NO**

d. **Sustainable forestry:** If assistance relates to tropical forests, will project assist countries in developing a systematic analysis of the appropriate use of their total tropical forest resources, with the goal of developing a national program for sustainable forestry? **N/A**

e. **Environmental impact statements:** Will funds be made available in accordance with provisions of FAA Section 117(c) and applicable A.I.D. regulations requiring an **environmental impact statement for activities** significantly affecting the environment?	**YES**
14. **Energy** (FY 1991 Appropriations Act Sec. 533(c) as referenced in section 532(d) of the FY 1993 Appropriations Act): If assistance relates to energy, will such assistance focus on: (a) end-use energy efficiency, least-cost energy planning, and renewable energy resources, and (b) the key countries where assistance would have the greatest impact on reducing emissions from greenhouse gases?	**This is not an energy activity.**
15. **Debt-for-Nature Exchange** (FAA Sec. 463): If project will finance a debt-for-nature exchange, describe how the exchange will support protection of: (a) the world's oceans and atmosphere, (b) animal and plant species, and (c) parks and reserves; or describe how the exchange will promote: (d) natural resource management, (e) local conservation programs, (f) conservation training programs, (g) public commitment to conservation, (h) land and ecosystem management, and (i) regenerative approaches in farming, forestry, fishing, and watershed management.	**N/A**
16. **Deobligation/Reobligation** (FY 1993 Appropriations Act Sec. 515): If deob/reob authority is sought to be exercised in the provision of DA assistance, are the funds being obligated for the same general purpose, and for countries within the same region asoriginally obligated, and have the House and Senate Appropriations Committees been properly notified?	**YES**
17. **Loans**	
a. **Repayment capacity** (FAA Sec. 122(b)): Information and conclusion on capacity of the country to repay the loan at a reasonable rate of interest.	**N/A. Assistance is on a grant basis.**
b. **Long-range plans** (FAA Sec. 122(b)): Does the activity give reasonable	

promise of assisting long-range plans and programs designed to develop economic resources and increase productive capacities?

c. **Interest rate** (FAA Sec. 122(b)): If development loan is repayable in dollars, is interest rate at least 2 percent per annum during a grace period which is not to exceed ten years, and at least 3 percent per annum thereafter?

d. **Exports to United States** (FAA Sec. 620(d)): If assistance is for any productive enterprise which will compete with U.S. enterprises, is there an agreement by the recipient country to prevent export to the U.S. of more than 20 percent of the enterprise's annual production during the life of the loan, or has the requirement to enter into such an agreement been waived by the President because of a national security interest?

18. **Development Objectives** (FAA Secs. 102(a), 111, 113, 281(a)): Extent to which activity will: (1) effectively involve the poor in development, by expanding access to economy at local level, increasing labor-intensive production and the use of appropriate technology, spreading investment out from cities to small towns and rural areas, and insuring wide participation of the poor in the benefits of development on a sustained basis, using the appropriate U.S. institutions; (2) help develop cooperatives, especially by technical assistance, to assist rural and urban poor to help themselves toward better life, and otherwise encourage democratic private and local governmental institutions; (3) support the self-help efforts of developing countries; (4) promote the participation of women in the national economies of developing countries and the improvement of women's status; and (5) utilize and encourage regional cooperation by developing countries?

19. **Agriculture, Rural Development and Nutrition, and Agricultural Research** (FAA Secs. 103 and 103A):

(1) (2) (3): The project/program will impact <u>positively</u> in these 3 areas if, as anticipated, the program results in rice farmers being paid cash for their rice paddy after harvest. Elimination of state control and intervention will open the door to private sector involvement and special benefits to rural dwellers and villages.
(4) Women have very little involvement in rice farming in Senegal.
(5) The program is not targeted to encourage regional cooperation.

a. **Rural poor and small farmers:** If assistance is being made available for agriculture, rural development or nutrition, describe extent to which activity is specifically designed to increase productivity and income of rural poor; or if assistance is being made available for agricultural research, has account been taken of the needs of small farmers, and extensive use of field testing to adapt basic research to local conditions shall be made.

This program is not targeted at agriculture, rural development, nutrition, or strengthening research capacity.

b. **Nutrition:** Describe extent to which assistance is used in coordination with efforts carried out under FAA Section 104 (Population and Health) to help improve nutrition of the people of developing countries through encouragement of increased production of crops with greater nutritional value; improvement of planning, research, and education with respect to nutrition, particularly with reference to improvement and expanded use of indigenously produced foodstuffs; and the undertaking of pilot or demonstration programs explicitly addressing the problem of malnutrition of poor and vulnerable people.

N/A

c. **Food security:** Describe extent to which activity increases national food security by improving food policies and management and by strengthening national food reserves, with particular concern for the needs of the poor, through measures encouraging domestic production, building national food reserves, expanding available storage facilities, reducing post harvest food losses, and improving food distribution.

Domestic production of rice should increase through changes in pricing policies, elimination of parastatals, and the entry of private sector in rice marketing and processing.

20. **Population and Health** (FAA Secs. 104(b) and (c)): If assistance is being made available for population or health activities, describe extent to which activity emphasizes low-cost, integrated delivery systems for health, nutrition and family planning for the poorest people, with particular attention to the needs of mothers and young children, using paramedical and auxiliary medical personnel, clinics and health posts, commercial distribution systems, and other modes of community outreach.

N/A

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21. **Education and Human Resources Development** (FAA Sec. 105): If assistance is being made available for education, public administration, or human resource development, describe (a) extent to which activity strengthens nonformal education, makes formal education more relevant, especially for rural families and urban poor, and strengthens management capability of institutions enabling the poor to participate in development; and (b) extent to which assistance provides advanced education and training of people of developing countries in such disciplines as are required for planning and implementation of public and private development activities. **N/A**

22. **Energy, Private Voluntary Organizations, and Selected Development Activities** (FAA Sec. 106): If assistance is being made available for energy, private voluntary organizations, and selected development problems, describe extent to which activity is: **N/A**

a. concerned with data collection and analysis, the training of skilled personnel, research on and development of suitable energy sources, and pilot projects to test new methods of energy production; and facilitative of research on and development and use of small-scale, decentralized, renewable energy sources for rural areas, emphasizing development of energy resources which are environmentally acceptable and require minimum capital investment;

b. concerned with technical cooperation and development, especially with U.S. private and voluntary, or regional and international development, organizations;

c. research into, and evaluation of, economic development processes and techniques;

d. reconstruction after natural or manmade disaster and programs of disaster preparedness;

e. for special development problems, and to enable proper utilization of

infrastructure and related projects funded with earlier U.S. assistance;

f. for urban development, especially small, labor-intensive enterprises, marketing systems for small producers, and financial or other institutions to help urban poor participate in economic and social development.

23. **Capital Projects** (Jobs Through Export Act of 1992, Secs. 303 and 306(d)): If assistance is being provided for a capital project, is the project developmentally sound and will the project measurably alleviate the worst manifestations of poverty or directly promote environmental safety and sustainability at the community level?

This is not a capital assistance project/program.

C. CRITERIA APPLICABLE TO ECONOMIC SUPPORT FUNDS ONLY

This is not an ESF funded program.

1. **Economic and Political Stability** (FAA Sec. 531(a)): Will this assistance promote economic- and political stability? To the maximum extent feasible, is this assistance consistent with the policy directions, purposes, and programs of Part I of the FAA?

2. **Military Purposes** (FAA Sec. 531(e)): Will this assistance be used for military or paramilitary purposes?

3. **Commodity Grants/Separate Accounts** (FAA Sec. 609): If commodities are to be granted so that sale proceeds will accrue to the recipient country, have Special Account (counterpart) arrangements been made? (For FY 1993, this provision is superseded by the separate account requirements of FY 1993 Appropriations Act Sec. 571(a), see Sec. 571(a)(5).)

4. **Generation and Use of Local Currencies** (FAA Sec. 531(d)): Will ESF funds made available for commodity import programs or other program assistance be used to generate local currencies? If so, will at least 50 percent of such local currencies be available to support activities consistent

with the objectives of FAA sections 103 through 106? (For FY 1993, this provision is superseded by the separate account requirements of FY 1993 Appropriations Act Sec. 571(a), see Sec. 571(a)(5).)

5. **Cash Transfer Requirements** (FY 1993 Appropriations Act, Title II, under heading "Economic Support Fund," and Sec. 571(b)). If assistance is in the form of a cash transfer: **N/A**

a. **Separate account:** Are all such cash payments to be maintained by the country in a separate account and not to be commingled with any other funds?

b. **Local currencies:** Will all local currencies that may be generated with funds provided as a cash transfer to such a country also be deposited in a special account, and has A.I.D. entered into an agreement with that government setting forth the amount of the local currencies to be generated, the terms and conditions under which they are to be used, and the responsibilities of A.I.D. and that government to monitor and account for deposits and disbursements?

c. **U.S. Government use of local currencies:** Will all such local currencies also be made available to the U.S. government as the U.S. determines necessary for the requirements of the U.S. Government, or to carry out development assistance (including DFA) or ESF purposes?

d. **Congressional notice:** Has Congress received prior notification providing in detail how the funds will be used, including the U.S. interests that will be served by the assistance, and, as appropriate, the economic policy reforms that will be promoted by the cash transfer assistance?

6. **Capital Projects** (Jobs Through Exports Act of 1992, Sec. 306, FY 1993 Appropriations Act, Sec. 595): If assistance is being provided for a capital project, will the project be developmentally-sound and sustainable, i.e., one that is (a) environmentally sustainable, (b) within the

financial capacity of the government or recipient to maintain from its own resources, and (c) responsive to a significant development priority initiated by the country to which assistance is being provided. (Please note the definition of "capital project" contained in section 595 of the FY 1993 Appropriations Act.)

STATUTORY CHECKLIST SUPPLEMENTS
FOR AFRICA FY 1993

The following checklist supplements 5C(2) - ASSISTANCE CHECKLIST:

D. CRITERIA APPLICABLE TO DEVELOPMENT FUND FOR AFRICA ASSISTANCE ONLY

1. (FAA Sec. 496): If assistance will come from the Sub-Saharan Africa DA account (the DFA), is it--

(1) to be used to help the poor majority in Sub-Saharan Africa through a process of long-term development and economic growth that is equitable, participatory, environmentally sustainable, and self-reliant;*

1. (1). Yes. The project will meet this requirement by benefitting rice farmers and farmer organizations.

(2) to be used to promote sustained economic growth, encourage private sector development, promote individual initiatives, and help to reduce the role of central governments in areas more appropriate for the private sector;

Yes. These criteria are consistent with the project's main goal and purpose.

(3) to be provided in a manner that takes into account, during the planning process, the local-level perspectives of the rural and urban poor, including women, through close consultation with African, United States and other PVOs that have demonstrated effectiveness in the promotion of local grassroots activities on behalf of long-term development in Sub-Saharan Africa;

The local-level perspectives of the rural poor were effectively taken into consideration during PAIP and PAAD development by the Design Team. This required extensive field investigations in rural areas and consultations with potential beneficiaries.

(4) to be implemented in a manner that requires local people, including women, to be closely consulted and involved, if the assistance has a local focus;	(4). Yes. The project will assist the local populations, including women to a very limited extent, in selling, processing and marketing rice.
(5) being used primarily to promote reform of critical sectoral economic policies or to support the critical sector priorities of agricultural production and natural resources, health, voluntary family planning services education, and income generating opportunities; and	(5). The project will support the critical priority of natural production.
(6) to be provided in a manner that, if policy reforms are to be effected, contains provisions to protect vulnerable groups and the environment from possible negative consequences of the reforms?	(6). Yes
2. (FY 1993 Appropriations Act): Have measures been taken to assure that DFA funds will not be used for tied-aid credits?	Yes

E. CRITERIA APPLICABLE TO DFA AND DFA ASSISTANCE TO ETHIOPIA, SOMALIA AND SUDAN

(Horn of Africa Recovery and Food Security Act, P.L. 102-274 April 21, 1992): If DA or DFA assistance is provided to Ethiopia, Somalia or Sudan other than through--

(1) U.S., international or indigenous PVOs, as defined in FAA §496(e); or
(2) international organizations that have demonstrated effectiveness in working in partnership with local NGOs and are committed to the promotion of local grassroots activities on behalf of development and self-reliance in the Horn of Africa--

N/A

has a certification been made with respect to that country by the President to the appropriate congressional committees that the government of the specified country--

(1) has begun to implement peace agreements, national reconciliation agreements, or both;
(2) has demonstrated a commitment to human rights within the meaning of FAA §§116 and 502B;
(3) has manifested a commitment to democracy, has held or established a timetable for free and fair elections, and has agreed to implement the results of those elections; and
(4) has agreed to distribute developmental assistance on the basis of need without regard to political affiliation, geographic location, or the ethnic, tribal, or religious identity of the recipient.

F. CRITERIA APPLICABLE TO DA AND DFA ASSISTANCE TO ZAIRE

(FY 1993 Appropriations Act): Have measures been taken to prohibit transfer of DA or DFA funds to the Government of Zaire, recognizing however that this does not prohibit NGOs from working with appropriate ministries or departments of the Government of Zaire.

N/A

G. CRITERIA APPLICABLE TO ESF ASSISTANCE TO KENYA

(FY 1993 Appropriations Act Sec 577):
If ESF funds are made available for Kenya, has the President of the United States determined and

N/A

certified to Congress that the Government of Kenya--

(1) has released all political detainees and has ended the prosecution of individuals for the peaceful expression of their political beliefs;
(2) has ceased the physical abuse or mistreatment of prisoners;
(3) has restored judicial independence;
(4) has taken significant steps toward respecting human rights and fundamental freedoms, including the freedom of thought, conscience, belief, expression, and the freedom to advocate the establishment of political parties and organizations; and
(5) has set and published an elections schedule or timetable for the holding of multi-party elections.

H. CRITERIA APPLICABLE TO ASSISTANCE TO LIBERIA

Democratic and Electorial Assistance (P.L. 102-270, April 16, 1992): is assistance being provided to Liberia notwithstanding FAA Section 620(q) or any similar provision and solely for nonpartisan election and democracy building assistance to support democratic institutions in Liberia or for assistance for the resettlement of refugees, the demobilization and retraining of troops and the provision of other appropriate assistance to implement the Yamoussoukro peace accord. If so, has the President determined and certified to the Committee on Foreign Relations and the Committees on Appropriations of the Senate and the Common Foreign Affairs and the Committee on Appropriations of the House of Representatives - N/A

(1) that Liberia has made significant progress toward democratization,
(2) that the provision of such Assistance will assist Liberia in making further progress and
(3) that the assistance in the U.S. national interest?

ANNEX 9

SENEGAL: IMPLICATIONS FOR THE RICE POLICY DIALOGUE

Rod Kite
Economics Division
Agriculture and Natural Resources Office
USAID/Dakar
Revised September 1993

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SENEGAL: IMPLICATIONS FOR THE RICE POLICY DIALOGUE

SUMMARY

Because Senegal imports between 40 and 50 percent of the cereals it consumes, and, since these imports are largely in the form of broken grain rice, rice production, marketing and pricing have become the central food policy issues in Senegal. The rice policy has been under discussion between the GOS and a multi-donor group for several years and a restatement is now complete. As a result of the dialogue the GOS has developed a program which will complete the privatization of the entire cereals sector. The program contains three major elements: elimination of all transportation subsidies along with all fixed rice prices and margins; state disengagement from production, processing and marketing locally produced rice; and, state disengagement from distribution of imported rice. These measures will be accompanied by major restructuring of SAED and CPSP: SAED will concentrate on improving extension and outreach and CPSP's role will be limited to monitoring the rice markets, with active intervention limited to emergency situations only. The immediate impact of this program will probably be a slight increase in retail rice prices in regional markets, with the possibility that some consumers outside Dakar will be adversely affected by the program.

There is virtually no comprehensive information about consumption parameters for Senegalese families, so a quantitative measure of likely impacts of pricing policy is difficult. However, on the basis of the information that is available it is necessary to conclude that the GOS is correct in being careful about how it addresses the food price policy issue, because:

(1) rice constitutes a hugh portion of urban diets, eaten largely at noon when convenience is a major factor and rice is, essentially, the wage good;

(2) rice constitutes a large part of the diet of the rural population in the North and in the Casamance;

(3) in all regions, rice constitutes a major part of the rural population's cash expenditure for food;

(4) preliminary information shows that the most likely urban reaction to increased rice prices will be away from cereals based meals - if income permits - and that, in any case, because cereal cost is about 30% of total cost of ingredients in cereals based meals, a price induced consumption response will likely be minimal;

(5) low income families purchase cereals frequently (often daily), so rice pricing policy will have a more immediate impact on these consumers;

(6) imported rice is a major source of food during the "soudure" (the period just before harvest) when most farm stocks have been exhausted; and

(7) the market surplus of local cereals responds negatively to rice prices, increasing with lower prices and decreasing with higher prices.

A second part of the rice pricing issue - the protection of local cereals and/or imposing an incentive to consume local cereals - is similarly difficult to judge, but, on the basis of information now available, it appears that this "substitution" cannot be expected to be large (and certainly not in the urban sector). There would probably be a production response to a higher rice price via its impact on local cereal prices, but only in the regions where there is a significant potential for increased production (i.e. the central and south) and evidence is that very little of the increased production would be marketed. That is, substitution would take place, but most of it would be at the rural level. This has its own risks - reduced farm income from cash crops - which is already occurring because of a continuing shift to food crops as farmers try to achieve minimum food security.

The analysis of likely changes in retail prices shows that eliminating the transportation subsidy will only have a significant impact in Ziguinchor, Kolda, and Tambacounda. And, once the distribution function is shifted to the private sector, it is likely that operating efficiencies will soften the impact in even these regions. There are several other reasons for expecting the final impact the be minimal in these three regions: 1) the traditional Gambia border trade will probably help to keep margins at a minimum; 2) most of the rice consumed in these regions, especially in the Casamance, is wholegrain which will not be influenced by this program, because it is already fully de-controlled; and 3) these areas have a high potential for production of competing crops. The advantage will be that present distortions in relative prices will be eliminated so that rice prices will at least not act to discourage the use of better technologies or the production of competing crops.

The majority of the "adjustment" induced by the new rice program will occur in the Senegal River Valley, where most of the active rural population is engaged in rice production. There will be two immediate, and to some degree counterbalancing, changes: 1) the guaranteed farm price of 85 FCFA/kg will be eliminated; and 2) the private sector will assume responsibility for marketing and processing. While there will be some negative impact from eliminating the guaranteed farm price, it should be low because actual prices received have been 65-75 FCFA/kg (official and local market prices weighted by shares marketed). The program includes a cushion by supporting a declining processing subsidy to mills which demonstrate that they have paid at least a "reference" price of 75 FCFA/kg (the subsidy will be 25 FCFA/kg first year, 15 in the second year and zero thereafter). This would suggest some decline in prices received by farmers, except the private mills will be smaller and more broadly distributed geographically, so reduced assembly costs should absorb much of the difference at the farmgate. The spacing (and possibly re-spacing) of the mills will take some time, so a spatial equilibrium will not occur immediately. The private sector has already responded by actually creating an overcapacity situation, and by concentrating most of the new mills in the Delta region. Since it will now be legal for all traders and processor to market local rice, the somewhat low local market prices will certainly increase, with the result that the average price received by farmers will probably only decline by a few FCFA/kg, which should help to realign some investment decisions. From the standpoint of the economy as a whole, it is desirable that the resources used in producing rice under current technologies be reallocated. Estimates of the domestic resource cost (DRC) for rice production in the River Valley range between two and six, indicating that between two and six FCFA (current technologies and depending on location within the Valley) are expended to replace one FCFA of imported rice. Thus, there is a substantial potential for improved economic performance to be generated by a better allocation of the domestic resources

which are not now being used in anything near a sustainable manner. The analysis shows, at current world prices and technologies, that between $25 and $70 million in domestic resources used in the Senegal River Valley are "misallocated" annually. A more rational policy and better resource allocation have a substantial potential in terms of its contribution to sustainable growth.

Substantial financial benefits will accrue to the state because the high subsidies now paid to SAED for collecting and milling rice in the Senegal River Valley will be reduced by about 1.1 billion FCFA the first year, by 1.4 billion FCFA in the second year and will be eliminated in the third year for a further 1.8 billion FCFA. The state will also reduce expenditures by 766 million FCFA when the transport subsidy is removed. The analysis concludes that most of these funds have payment for operational and distributional inefficiency, not as direct transfers to either producers or consumers. Over the three years of the program these "savings" alone would amount to a minimum of $10 million. There would also be second-round effects, such as more efficient public and private investment and increased return on investment. Research has shown that the rate of return on investment is positively related to "appropriate" macro and sectoral policies, so the institution of a more rational rice sector policy will help to improve economic growth in the Valley. The analysis does not attempt to estimate the actual change in return to investment, but, given the hugh investments in irrigation systems in the Valley the potential gain from even a small increase is very large.

This program will contribute to establishing a more responsive system and help to encourage longer-term adjustments. But, there are organizational and production related constraints which need to be addressed before the benefits can be realized. The reorganization and reorientation of SAED and CPSP are the essential accompanyinng measures, and both are addressed by this program. In summary, the new policy establishes a substantial potential to improve economic growth, and the implementation program is appropriate to achieve the potential.

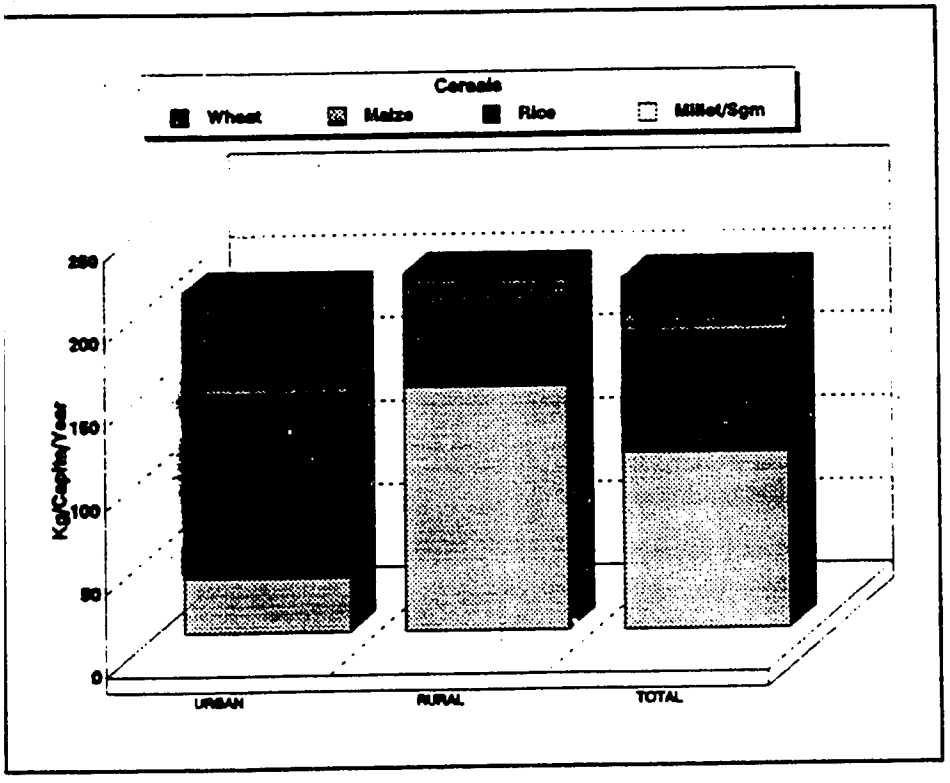
SENEGAL: IMPLICATIONS FOR THE RICE POLICY DIALOGUE

INTRODUCTION: THE ROLE OF RICE IN CONSUMPTION AND PRODUCTION

Rice has been a staple food in Senegal since well before independence. It is the basis of the major Senegalese dish "Thiebou Diene" (literally, fish and rice) which is consumed in large quantities, especially in the urban centers, and rice is also a major part of the diet of rural populations in the extreme northern and in the southern parts of the nation. Nationally, rice accounts for about 34% of the volume of all cereals consumed, but there is considerable variation in shares in urban and rural consumption, as well as between various geographic segments of the rural population. At the national level, rice accounts for about 54% of the volume of cereals consumed by the urban population, and rice accounts for 24% of the volume of cereals consumed by the rural population (Figure 1).

Figure 1

Per Capita Cereal Consumption
(Urban, Rural, and National in Kg/Capita/Year)



Per capita consumption of rice has increased steadily through time, especially during the late 1970's and early 1980's when per capita consumption increased by about 4% per year.

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These were serious drought years in the Sahel, so there was a massive substitution of imported rice for local cereals. Production and consumption patterns never returned to their post-drought levels, which has left imported rice to supply the food needs generated by population increases.

The political and social importance of rice policy is apparent, just from the share of rice in the volume of cereals consumed. And, it has an even greater "weight" in terms of the amount of cash income used by the rural population to purchase rice. The most recent, nationwide, estimate is that the rural population spends over 25% of all cash expended for food to purchase rice, more than double the share allocated to any other food and the largest single expenditure for any good[1]. Food expenditures by the urban population are also dominated by rice. The urban population spends about 18% of its total food budget on rice (at home), which is also the single largest expenditure made by the urban population, and 80-90% of lunchtime meals are rice-based.

As a source of cash income, at the national level, rice is somewhat less important than the other cereals. According to the "Enquete sur des Priorites" (EP) cash income from rice accounted for about 4% of all cash income from agricultural sources in 1991/92 -- for reference, groundnuts accounted for 60% of income from agricultural sources, and vegetables for almost 15%. Naturally, the importance of rice, even as a source of cash income, varies according to geographic region.

According to the EP Survey, the region of St. Louis, where a large portion of production is marketed, accounts for approximately 89% of the national total rural cash revenue from rice, which is also 41% of all cash income from agricultural sources in the region (vegetables accounted for almost the same amount, 40% of the region total). Of the estimated 60,150 rural households in the St. Louis region, only 6,964 (11.5%) reported receiving cash income from rice. This apparent low level of market participation is consistent with a general food deficit in the region, but it underestimates the actual amounts of cash revenue generated by rice. The reported total revenue (1.750 billion FCFA), should be about equivalent to about 23,000 tons of paddy rice (at 75 FCFA/kg farmgate). Actual production for 1991/92 was 173 thousand tons, of which SAED reports purchasing 70 thousand tons. This leaves 16-17 thousand tons marketed through the informal system, and a much greater average participation rate and considerably more income than is reported by the EP Survey[2]. SAED also reports a total of 90,580 farmers engaged in producing irrigated rice in the Senegal River Valley. Each farmer does not constitute a separate household, but these numbers suggest that the large majority of the active rural population in the region is engaged in producing irrigated rice.

Rice accounts for about 42% of the land planted to cereals in Ziguinchor and about 18% of the land planted to cereals in Kolda. Together these two regions account for about 61% of

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[1]Data from the "Enquete sur les Priorites", see Part II, page 67.

[2]The income information from the EP are one year recall, so it is not surprising that income estimates are only approximate. It is also highly likely that occasional income, such as from the occasional sale of small grains, will be underestimated.

all land planted to rice in Senegal, but for only about 29% of national production[3]. The production systems in these two regions use little equipment, fertilizer, herbicides, or insecticides and yields generally average around one ton per hectare, compared to nearly five tons per hectare in the Senegal River Valley.

By tradition, as well as because of the food-balance situation, only a small portion of production in the Kolda region is marketed. Producers in Ziguinchor also have a tradition of not marketing their rice, but recent data suggest that this is changing. For example, the 1992 USAID/ANRO KAP Survey found that while only 3% of the rural households interviewed in Kolda considered rice a "major" cash crop, almost 14% of the rural households in Ziguinchor actually considered rice a "major" cash crop (almost 78% consider rice as the "major" food crop, compared to 39% in Kolda)[4]. The importance of rice relative to other cereals in production is reflected by consumption patterns. Rural people in the Casamance (Ziguinchor and Kolda) consume nearly three times as much rice per capita as they do in Tambacounda, Fatick or Kaolack (73 kg in Casamance vs 26 in the three regions). The urban people in the Casamance are the highest per capita rice consumers in all of Senegal (142 kg in the region, vs 119 kg in Dakar). These data are not available separately for Ziguinchor and Kolda, but it can be expected that a relatively greater per capita consumption occurs in Ziguinchor.

While millet and sorghum are the dominant cereals in diets in the non-rice producing rural regions, rice consumption is still high and increasing in importance: rice accounts for 67% of expenditures for crops for home consumption in the Northern Groundnut Basin; 61-71% in the Central Basin; 91% in the Southwestern Basin; and, 34-47% in the Southeast and Western Senegal[5]; and, imported foods account for over 45% of food expenditures (including the value of home grown food) in the Middle River Valley[6].

Imported rice is important as a means of filling the food supply deficit, and has also recently become an important source of revenue for the state. Food grain imports account for between 40% and 50% of total cereal supply in Senegal (in consumable equivalents), and rice generally accounts for over 90% of total cereal imports (Figure 2). Imported rice accounts for well over 30% of the consumable supply of food grains in Senegal, which is why rice is the focal point of Senegal's food policy, and of the associated implementation programs.

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[3]These data are for the 1992/93 cropyear, as reported by MDRH/DA, January 1993.

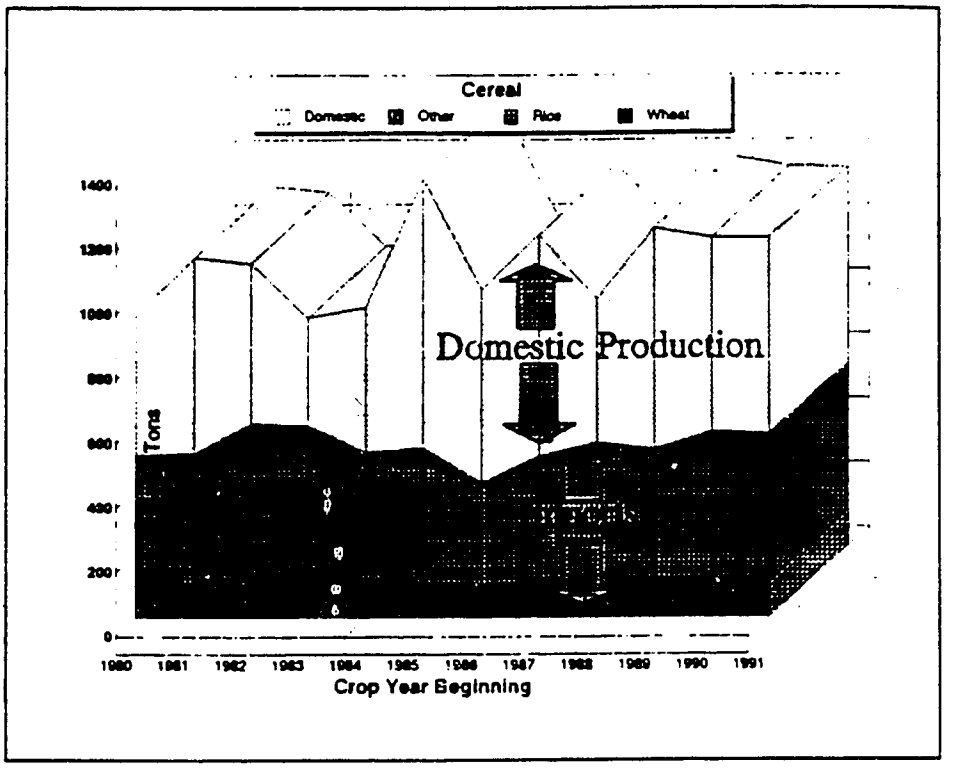
[4]1992 USAID/ANRO KAP Survey, Annex IV, October 1992.

[5]ISRA/IFPRI Study, see Part 2, Table II-22.

[6]IDA Study, see Part 2, page 52.

Figure 2

Food Crop Supply in Consumable Equivalent



FOOD POLICY PRIOR TO 1992

Senegal's participation in structural adjustment programs over the past several years has produced successive "market liberalization measures" so that Senegal's food policy and its food marketing system have evolved from extreme state intervention to an increasingly liberal, more private sector orientation. The process began with the "New Agricultural Policy" in 1984 and was further refined by the "Cereals Policy" in 1986. These two statements set the stage for market liberalization and price deregulation for local cereals (millet, sorghum, and maize). These policy statements also set the objective of achieving 80 percent cereals self-sufficiency, including a heavy emphasis on expanding irrigated rice production in the Senegal River Valley. Major actions undertaken to implement the new policy were: (See Annex Table 1 for a review of major policy actions undertaken since 1979)

- licensing restrictions and volume controls on locally produced coarse grain marketing were eliminated in 1987;

- fixed producer and retail prices for coarse grains were replaced with minimum producer prices in 1987;

- all price controls on local coarse grains were removed in 1988;

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- licensing requirements were remove from intermediate and high quality rice in 1992 and all imports of this rice were reserved for the private sector (exception is PL 480 rice, which continued to be managed by CPSP); and

- GOS agreement to privatize management of PL 480 cereal imports, contract signed 9/1993.

At the end of this "adjustment process", rice was the only locally produced food grain which was still subject to state control. The GOS continued a two-part import-substitution policy aimed at encouraging substitution of local cereals for imported rice. Specifically:

Coarse Grains: The GOS, with assistance from its donor partners, began to support the establishment of semi-industrial grain mills to produce products better able to compete with imported rice (and to some degree, to replace part of the imported wheat).

Rice: the rice policy consisted principally of subsidies to rice farmers in the Senegal River Valley and taxes on urban rice consumers. The program used to implement the policy was:

- a transport subsidy on regional distribution of imported rice;

- a relatively high "perequation" on imports;

- fixed regional farm, wholesale and retail prices;

- large subsidies to the irrigation system in the River Valley;

- state controlled collection and processing of produced rice in the Valley; and

- state controlled import and distribution of imported broken rice to the wholesale level.

The perequation portion of this program has become an important source of revenue for the state. As shown in Table 1, in 1991 it amounted to nearly 32 FCFA/kg for imported broken rice (more than 35% broken). Applied to the 412,000 metric tons of rice imported by CPSP in 1991, the total is over 13 billion FCFA ($47 million) in "tax" revenue to the state, not counting the "perequation" collected on private sector imports of wholegrain rice.

While the program was generally supportive of the import substitution goal, some of its elements were not. Subsidized distribution of imported rice, for example, may have been desirable on an equity basis (essentially transfer of income from Dakar consumers to consumers in the other regions) but it also helped to distort the relationships between prices for local cereals and imported rice in the various regions. Likewise, while the large subsidies to the irrigation system and an emphasis on rice production also transferred substantial amounts of resources to the River Valley, it did so at considerable cost to the economy. The "domestic resource cost (DRC)" of producing rice in the Valley and marketing it in Dakar has been calculated at between 2.2 and 4.6, which indicates that Senegal is spending between two and four times as much in domestic resources to produce rice as it would cost to acquire it on the international market

(depending on the type of production system and the location within the Valley - the higher DRC is for large perimeters in the Delta where most of the marketed rice is produced)[7].

Table 1

CPSP: Perequation on Imported Broken Rice (1991) at Alternative Exchange Rates

Item	Units	1991 Base	Exchange Rate or Price Change from Base (%)	
			25%	50%
Cost & Freight	$/ton	230	230	230
Exchange Rate	FCFA/$	280	350	420
Cost and Freight: Dakar	FCFA/ton	64,400	80,500	96,600
Insurance	FCFA/ton	773	773	773
Import duty	FCFA/ton	9,660	9,660	9,660
COSEC	FCFA/ton	194	194	194
Handling & Unloading	FCFA/ton	4,194	4,194	4,194
Port Tax	FCFA/ton	307	307	307
Cost: L/C	FCFA/ton	407	407	407
PORT COSTS..DAKAR	FCFA/ton	15,535	15,535	15,535
Materials	FCFA/ton	273	273	273
Transport	FCFA/ton	168	168	168
Other Services	FCFA/ton	6,030	6,030	6,030
Salaries	FCFA/ton	3,916	3,916	3,916
Taxes and Duties	FCFA/ton	3,570	3,570	3,570
Financial Costs	FCFA/ton	297	297	297
Depreciation	FCFA/ton	434	434	434
Losses & Miscellaneous	FCFA/ton	175	175	175
Less Regional Distribution Costs	FCFA/ton	(4,335)	(4,335)	(4,335)
CPSP COSTS: DAKAR		10,528	10,528	10,528
TOTAL COST: CPSP WAREHOUSE	FCFA/ton	90,463	106,563	122,663
Wholesale Price: Dakar	FCFA/ton	122,400	122,400	122,400
Perequation: Dakar	FCFA/ton	31,937	15,837	(263)

Source: Base Data Provided by CPSP, February 1992.

[7]Holleman and Jones (1991).

All costs and subsidies considered, it costs about 300 fcfa/kg to produce, process and market rice in the River Valley. CPSP has been subsidizing the local rice system by about 82 fcfa for each kilogram of officially marketed rice.

The "perequation" imposed on imported rice has helped support and stabilize prices for locally produced cereals. It has also imposed relatively high (nominal) prices on consumers, which presents Senegalese authorities with a dilemma, because perequation receipts are an important source of state revenue at a time when the national budget is badly out of balance. The dilemma is exacerbated, somewhat, by the "exchange rate problem" in that while the perequation rate has adequately adjusted domestic prices to account for currency overvaluation, any real devaluation would eliminate a large part of the "surplus" now going to the state. The implications of a devaluation on the cost of subsidizing rice production in the Valley are not attractive to the GOS.

Table 1 shows, for example, that a 25% devaluation would eliminate at least one-half of the state's revenue from imported rice and that a 50% devaluation would eliminate it completely. It takes the perequation from about three tons of imported rice to support the subsidy for each ton produced in the Valley, so a devaluation would push the budget further out of control. The other aspect of this issue is, of course, the gains from exports (they will not be dealt with here but it is worth remembering that the system for the major agricultural export - groundnuts - is now operating at a deficit and that, in agriculture alone, the economy is dependent on imported fuel, most equipment and repair parts, and numerous basic chemicals).

THE NEW RICE SECTOR POLICY

Given the current "rice dilemma" the GOS has begun to readjust the rice component of its overall food policy. The "adjustments" are expressed in the policy and program statement developed to support the multi-donor Agricultural Sector Adjustment Program (PASA). While the food policy component of the dialogue has taken several tacks, the essential elements have been the elimination of the distortions caused by the existing rice pricing program. This requires continued adjustment for an overvalued exchange rate, elimination of marketing and processing restrictions on locally produced rice, elimination of transport subsidies (whether they are explicitly a subsidy or a "transport perequation"), elimination of fixed prices and margins on broken rice, and liberalization of the commercial system which imports and markets rice. The GOS has responded to the dialogue by producing a statement which includes:

- elimination of set wholesale and retail prices and margins;

  - immediately in all regions except Dakar, Kolda and Ziguinchor;

  - Kolda and Ziguinchor one year later;

  - the wholesale broken rice price in Dakar will be liberalized in the third year of the program;

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- elimination of the transport "perequation" (an explicit budget line item to support a transportation subsidy was removed in 1990, but it was replaced by an equivalent "perequation" system);

- state disengagement from wholesale rice distribution and from local paddy processing and marketing;

  - SAED is will stop purchasing and processing local rice, which includes selling or closing two rice mills owned and operated by SAED;

  - SAED will reduce its staff from the current 490 to 250 (this will be the third staff reduction since 1987 when SAED had 970 employees);

  - the private sector will be encouraged to install small and medium capacity mills (financing by FED and CNCAS and FCCAA);

  - CPSP is to reduce its regional presence by closing its regional warehouses and it will be restructured to assume a monitoring rather than a management role in the sector;

- establishment of a reference price of 75 FCFA/kg for local paddy (instead of a state guaranteed price presently set at 85 FCFA/kg);

- liberalization of whole and intermediate rice imports (liberalization of all prices, elimination of import licensing restrictions) and initiation of private sector participation in the import of broken grain rice;

  - The GOS eliminated import restrictions on intermediate and wholegrain rice in January 1992 (Decree 92-155, January 22, 1992); and

- The GOS will initiate shipboard sale of broken rice and transfer import rights to the private sector;

- all measures are to be completed over a three year period.

THE PROPOSED POLICY: IMPACT AND EVALUATION

The immediate result of the new policy could be an increase in regional rice prices. But, the increase is not expected to be large, perhaps 2-5 FCFA/kg, depending on the market. Privatization of regional rice distribution and elimination of fixed retail margins may mean that, in net, the overall price change will be even smaller (largely because the private sector can be expected to have lower distribution costs). In the intermediate and long-term, the economy and the state budget will benefit because resource allocation will be improved, and several costly subsidies will be eliminated.

In the longer-term (i.e. after three years) the GOS will have to face another rice pricing decision, brought about, again, because of the cost of production in the River Valley. It is possible, and hopeful, that a combination of an increase in productivity, a change in crops and cropping patterns, and processing and marketing efficiency will ease the problem, but it may still be necessary for the GOS to decide whether or not it will continue to tax all consumers in order to support the rice sector in the Valley.

The direct impact of a change in rice pricing policy on producers and consumers depends on the degree of substitutability between rice and coarse grains. A similar issue is the degree to which local cereal prices are "determined" by rice prices and, if so, how much local cereal prices will change in response to changing rice prices. Clearly, to the degree that the demand for rice and local cereals responds to prices, so that demand changes as prices change, there is some degree of joint price determination. Likewise, to the degree that both prices influence supply, there is also some degree of joint price determination. However, since prices, and especially rice prices, have been under ridged state control, a direct measurable relationship between rice and local cereals prices is not apparent. For instance, a regression function (using monthly data 1987-1992) which expresses the retail millet price as a function of the retail rice price explains virtually none of the variation in millet prices. In other words, supply conditions are much more important than the price of rice in determining local cereals prices[8]. This is at least partially explained by the low cross-price elasticity of demand at the urban level, and an even less elastic farm level equivalent direct-price elasticity. Relatively large changes in retail prices to urban consumers produce relatively small changes in demand, which means relatively small price changes in local cereal prices are attributable to changes in rice prices. What rice prices have provided is an upper limit to local cereal prices, subject to local supply conditions and the cost of transforming local cereals into an equivalent consumable form[9].

The analysis which follows uses available information on producer and consumer responses to changes in prices and incomes to develop estimates of the impact(s) of the new rice policy. The analysis follows two tracks: one largely financial which investigates the likely changes in prices, margins, taxes and subsidies; and, a second which estimates the economic impact of the new rice policy.

Eliminating The Transport Subsidy/Perequation and Elimination of Fixed Wholesale and Retail Margins

The principle behind eliminating the transportation subsidy is to facilitate CPSP disengagement from the marketing system, and, simultaneously, to encourage the development of a private marketing system. The purpose is to establish a more efficient distribution system, under which traders would be both permitted and encouraged to acquire their rice in Dakar. This issue will to be analyzed in two parts: (1) the likely impact on regional rice prices; and,

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[8]This is also supported by the "price transmission elasticities" shown in Part II, page 11. The retail price of millet changes by about 8% for each 10% change in the farm price and maize and sorghum prices change by about 50% of a millet price change. This also indicates that urban demand, translated to the farm level, will be about 75% as price elastic as it is at the urban level.

[9]See the Senegal Agricultural Sector Analysis, 1991.

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(2) the subsequent adjustments in production and in consumer demand for both rice and local cereals. There are also geographic issues specific to rice producing and to non-rice producing regions. These issues will be dealt with separately, starting with a summary of actions taken to date and the status of the regional rice pricing system.

Implementation: September, 1990 wholesale and retail price increases

The GOS eliminated the transport subsidy line from CPSP's budget in September, 1990, but the explicit subsidy was replaced with an equivalent "perequation" system. Wholesale (ex-CPSP) prices were increased by 2.2 FCFA/kg (2.180) in all regions, including Dakar. The practical result was that the regional price differentials remained essentially unchanged (except that an explicit price, and an attendant subsidy, was created for Thies - previously, the price was equal to the price in Dakar). The impact of the new pricing structure was to increase regional wholesale prices by 2.2 FCFA/kg and to tax Dakar consumers an additional 2.2 FCFA/kg, which could then be used to cover the transport cost-gap generated by the regional price differentials. Simultaneous with the wholesale price increase, the GOS established new retail prices and new wholesale to retail margins. These data and the associated margins are shown in Table 2. (Supporting data are shown in Tables 3 and 4).

Table 2

Regional Wholesale and Retail Rice Prices and Margins: May, 1988 and September, 1990

Region	May, 1988 Retail and Wholesale Prices and Margins (FCFA/kg)			September, 1990 Retail and Wholesale Prices and Margins (FCFA/kg)			September, 1990 Dakar Wholesale to Regional-Retail Margin (FCFA/kg)
(1)	Retail (2)	Wholesale (3)	Margin (4)	Retail (5)	Wholesale (6)	Margin (7)	(8)
St. Louis	133	122.6	10.4	136	124.8	11.2	13.6
Louga	132	122.0	10.0	135	123.8	11.2	12.6
Dakar	130	120.2	9.8	133	122.4	10.6	10.6
Thies	131	120.2	10.8	135	123.2	11.8	12.6
Diourbel	132	121.6	10.4	135	123.8	11.2	12.6
Fatick	132	122.0	10.0	135	123.8	11.2	12.6
Kaolack	132	122.0	10.0	135	123.8	11.2	12.6
Tambacounda	135	125.2	9.8	138	127.4	10.6	15.6
Kolda	136	124.5	11.5	139	126.7	12.3	16.6
Ziguinchor	135	124.5	10.5	138	126.7	11.3	15.6

Source: Data from CPSP.

Wholesale to retail margins in 1988 were approximately constant across regions, at about 10 FCFA/kg. The 1990 changes in wholesale and retail prices did little to shift the regional-

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retail-wholesale relationships, other than to increase the margins to an average of about 11 FCFA/kg (columns 4 and 7 of Table 2).

The last column of Table 2 also contains information about the potential for private sector wholesale rice distribution. That is, the data demonstrate a marked tendency toward "quasi" pan-territorial pricing and an attempt to treat each unit of rice equally, no matter where, regionally, it might be marketed. As a result, there is very little variation in the Dakar-to-region margins (12 FCFA/kg in most regions). It is also notable that the within-region gross margins are all about nine percent of the wholesale cost, which leaves very little apparent margin to cover wholesaler and retailer cost and profit margins. This is reasonable under an administered system where there is little risk (margins are virtually guaranteed and major costs are supported by CPSP). It does have implications for the next phase of the "rice program", which calls for CPSP's disengagement from regional distribution and elimination of controlled margins.

The first "benefit" from these changes will be a reduction of about 766 million FCFA in CPSP's expenditure to subsidize transportation to regional warehouses (based on data for 1991 in Tables 3 and 4). This "savings" needs to be balanced against increases in consumer expenditures due to higher regional retail prices which might occur when the fixed margins are eliminated.

Implementation: Liberalized margins, CPSP regional distribution replaced by the private sector

This component of the "program" is intended to eliminate all fixed wholesale and retail prices and margins. Implementation of this part of the program is planned in three stages: margins will be eliminated immediately in all regions except Ziguinchor and Kolda; and, one year later they will be eliminated in Ziguinchor and Kolda. The wholesale price for broken rice will be liberalized in Dakar in the third year of the program. CPSP will maintain its current broken rice import functions for the first three years, and the GOS will continue to collect the "perequation" - difference between its CIF cost and the wholesale price. (Net, of course, CPSP's handling costs). Private traders are expected to pay the CPSP wholesale price, then market the rice at prices consistent with marketing costs and regional demand. It is expected that the wholesaler-retailer system would continue to operate under the existing structure. The analytic issues, here, are the private sector incentive, likely regional price movements, the related shifts in demand (including cross-effects on other cereals and other foods), and the impact on CPSP's (or the state's) net returns from imported rice.

Table 3

CPSP Wholesale Prices, Regional Differential, Transport Costs and Transport Subsidies

Region	CPSP price to wholesalers (FCFA/kg)			Region - Dakar Price Difference (fcfa/kg)			Transport from Dakar (cost/kg) at selected rates per ton/km				Reported CPSP Subsidy and Implied Transport Cost (FCFA/kg)		Remaining Subsidy (FCFA/kg)	
	May 1988	Sept. 1990	July* 1992	May 1988	Sept 1990	July* 1992	Distance (km)	Cost/Ton/Kilometer 20	25	30	May, 1988 Subsidy	Implied Transport cost	Sept 1990	July 1992
St Louis	122.6	124.8	125.1	2.4	2.4	2.7	20	5.4	6.8	8.1	2.5	4.9	2.5	2.2
Louga	122.0	123.8	124.7	1.8	1.4	2.3	163	3.3	4.1	4.9	2.7	4.5	3.1	2.2
Dakar	120.2	122.4	122.4	..	..			.	..	.		.	. ..	..
Thies	120.2	123.2	123.2	0.0	0.8	0.8	70	1.4	1.8	2.1	2.0	2.0	1.2	1.2
Diourbel	121.6	123.8	123.8	1.4	1.4	1.4	116	2.3	2.9	3.5	2.1	3.5	2.1	2.1
Fatick	122.0	123.8	124.3	1.8	1.4	1.9	145	2.9	3.6	4.4	2.3	4.1	2.7	2.2
Kaolack	122.0	123.8	124.3	1.8	1.4	1.9	198	4.0	5.0	5.9	2.3	4.1	2.7	2.2
Tambacounda	125.2	127.4	129.7	5.0	5.0	7.3	490	9.8	12.3	14.7	4.5	9.5	4.5	2.2
Kolda	124.5	126.7	124.5	4.3	4.3	2.1	675	13.5	16.9	20.3	9.1	13.4	9.1	11.3
Ziguinchor	124.5	126.7	124.5	4.3	4.3	2.1	440	8.8	11.0	13.2	10.7	15.0	10.7	12.9

Source: CPSP and Calculations * Degree circulating on July 31, 1992 that not yet enacted

Table 4

CPSP Rice Shipments 1980-1991 (thousand metric tons)

Region	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	Average 1980-91	Percent Total
Total	278.9	288.7	311.5	315.3	361.6	326.9	315.7	185.9 84.0*	325.8	330.7	393.6	412.5	375.7	100.0
St Louis	8.4	6.4	13.6	12.9	12.4	10.9	13.6	8.7	12.9	15.8	13.9	11.6	13.6	3.6%
Louga	5.5	5.8	7.2	9.9	12.6	10.4	10.6	8.0	13.0	16.8	16.4	20.5	16.7	4.4%
Dakar/Thies	193.3	196.1	209.4	202.3	225.1	209.5	203.5	102.6	192.6	195.2	225.5	235.4	212.3	56.5%
Diourbel	14.8	18.3	21.4	28.7	30.4	28.4	28.5	21.8	34.0	43.3	39.5	45.8	40.7	10.8%
Fatick/Kaolack	27.3	27.3	32.1	39.2	41.4	33.2	26.6	19.9	31.4	43.7	43.5	44.0	40.6	10.8%
Tambacounda	6.2	6.5	8.1	12.3	8.1	5.3	5.8	4.6	8.0	10.9	12.4	16.3	11.9	3.2%
Casamance	19.9	23.1	19.8	30.0	31.6	29.3	27.1	20.2	33.8	45.0	42.3	38.9	40.0	10.6%

Source: CPSP and Mayoro Wade-Price Waterhouse, 1991, (Volume 3, page 65). * Estimated imports by the private sector during the 1987 "privatization" experiment, regional distribution not known (the majority was probably marketed in Dakar).

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Table 5

Expected Marketing Costs and Regional Prices Under a Liberalized Rice Marketing System (CPSP Sales Price in Dakar of 122.4 FCFA/kg)

Region	Wholesaler Costs and Sales Price (FCFA/kg)		"Liberal" Retail Price[1] (FCFA/kg)	Current Retail Price (FCFA/kg)	Change in Retail Price	
	Transport[1]	Sales Price[2]			FCFA	Percent
St. Louis	6.8	133	136	136	0	0.0
Louga	4.1	134	137	135	2	1.5
Dakar	1.3	131	134	133	1	0.8
Thies	1.8	132	135	135	0	0.0
Diourbel	2.9	133	136	135	1	0.7
Fatick	3.6	134	137	135	2	1.5
Kaolack	5.0	135	138	135	3	2.2
Tambacounda	12.3	143	146	138	8	5.8
First year, regional CPSP sales price of 126.7 FCFA/kg (September, 1990 price).						
Kolda	1.3	132	135	139	-4	-2.9
Ziguinchor	1.3	132	135	138	-3	-2.2
Second year, complete price liberalization, as with the other regions.						
Kolda	16.9	144	147	139	8	5.8
Ziguinchor	15.0	142	145	138	7	5.1

[1]Transport cost at 25 FCFA/Ton/Km from Table 3 (except for Ziguinchor 35 FCFA/T/Km was used to account for Gambia transit costs).
[2]Assume a 2% margin on wholesaler costs 1.02*(122.4 + 1.5 + Transport cost).
Wholesaler costs are taken from Wade-Rabes, 2nd Phase Report (page 33). The costs are for Dakar wholesalers and assumed, except for transportation costs, to be the same for regional distributors:

Item	(FCFA/kg)	
Transport	(column 1)	
Labor/Handling	.280	loading/unloading
Storage (1 month)	.600	
Weighing	.360	
Interest (1 month)	.300	annual interest rate of 16%
Total (ex-transport)	1.540	rounded to 1.5/kg.

[3]Assume a 2% margin on retailer purchase cost.

Table 5 contains estimates of the regional prices, constructed from the existing, fixed, Dakar wholesale price of 122.4 FCFA/kg, plus wholesaler operation and transportation costs. A two percent margin on costs is included for both wholesale and retail traders. The assumed margin augments wholesaler margins somewhat (existing margin-on-cost is about 1.5%). It is

assumed that the turn-over period is one month[10], so the annual rate of return on investment would be about 24 percent each for wholesalers and retailers. The costs presented in Table 5 should represent approximate resale prices. A basic wholesaler cost (excluding transportation cost) of 1.5 FCFA/kg was used for each region. These charges should range from 1.0 to 1.5 FCFA/kg for the different regions: (1) because of lower regional wages; (2) cost of storage below the cost in Dakar; and (3) increased turn-over rates.

The last two columns of Table 5 show the expected impact on regional prices (absolute and percentage changes). With the exception of Kolda, Ziguinchor and Tambacounda, where the transportation subsidy has been between 9 and 10 FCFA/kg, the impact on prices is calculated at between zero and three FCFA/kg. The implied changes are minimal in those areas which are non-rice producing (including no immediate change in St. Louis - but there are other issues to be discussed below) and highest in the regions with the most varied diets and with the greatest potential for production of competing crops. Tambacounda, and Kolda, each with a potential 8 FCFA price rise (5.8%), have lower per capita rice consumption and relatively more price elastic demands than the other regions, so there may be a discernable change in consumer behavior in these regions. That is, the question of rice's substitutability for other foods becomes relevant. This is relevant to the USAID strategy because several of the regions where the most likely "impacts" are expected to occur are within the USAID "Strategic Zone".

Rice Producing Regions

Ziguinchor, Kolda, and St. Louis require separate discussion because each is a rice producing area. The cases, however, are vastly different, because rice production in St. Louis is irrigated, highly subsidized, with fixed producer prices, and heavy state involvement in marketing and processing. In Ziguinchor and Kolda, rice is produced under traditional swamp and rainfed systems, with little marketed surplus and little state intervention. There is another significant difference between the Casamance (Kolda/Ziguinchor) and St. Louis: wholegrain rice is generally consumed in the Casamance, while broken-grain rice is consumed in the rest of the country. The prices of these two forms of rice are obviously linked to some degree, but one must remember that there are no price or import controls on either intermediate or wholegrain quality rice. The two cases are different, but the analytic (impact) issue amounts to confronting regional non-farm/non-producer demand with the available local supply to determine demand (imports) from external sources. A graphic representation of three situations are shown in Figures 3 to 5, where non-producer demand is represented by the usual downward sloping curve and marketed surplus is represented by the positively sloped curve.[11]

Since the marketed surplus function is a combination of all of the factors which influence producer demand and production, its shape and position is highly variable, which helps to demonstrate why some producers are net buyers, some are net sellers, and some are neither buyers or sellers. For example, at price P_f producers are, on the average, completely self-

[10]Turn-over rates of one month or less are referenced by Rignal (1992) and by Price-Waterhouse (1990). Similar turn-over-rates are reported for local cereals by Ouedrago and Newman (Part II, page 7).

[11]See Part II for a discussion of marketed surplus and a review of available information for Senegal.

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sufficient. However, some of the producers' marketed surplus curves will be to the left of the aggregate (net buyers), some will be to the right (net sellers), and some will be equal (not in the market). In fact, a single producer is likely to pass through each of these stages during any given year. These functions will shift left, right, perhaps even the slope will change, depending on input prices, output prices, the availability of fixed factors of production, (land and labor, for example), production technology, farm income (farm and non-farm), season, etc. That is, while the function shown in Figure 3 emphasizes own-price responses, it embodies all of the cost, price and resource constraints farmers may face.

Figure 3

Price Induced Producer Deficit

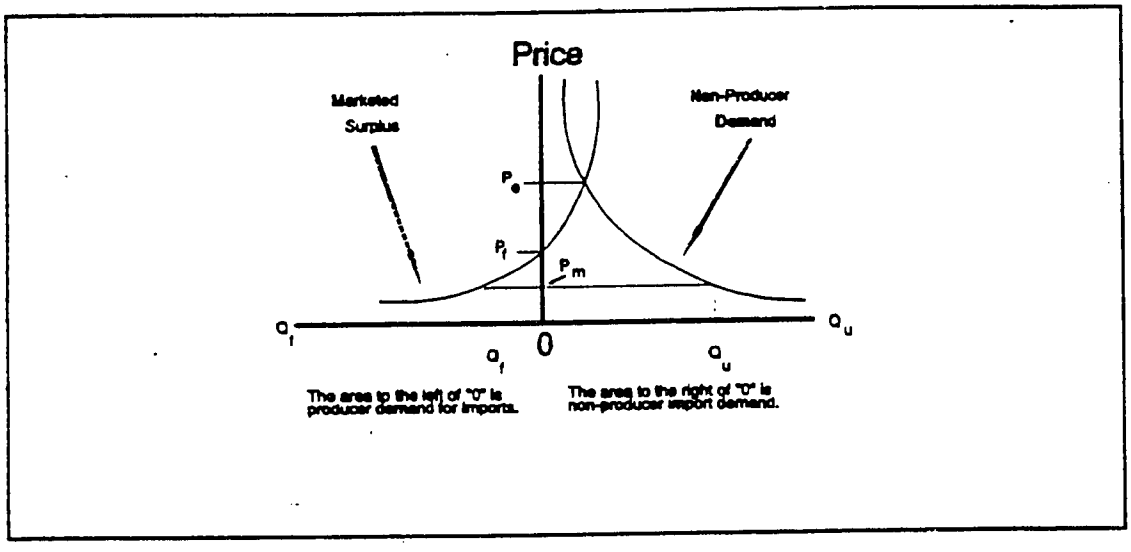

Figure 3 represents the case when a relatively low consumer price (P_m) is established by a price control system or via a transport subsidy from a major supply point (such as Dakar for imported rice): the price is so low that it creates a price-induced producer deficit. In the case of Ziguinchor, Kolda and Tambacounda this might also be caused by the presence of low cost rice imported from the Gambia. The low price reduces the incentive to produce, and in the case of area available for swamp rice production in Ziguinchor, an under utilization of available resources (because there may be limited alternative use for this land). This could also induce a shift to other crops, especially if labor is scarce, (most likely to cash crops, because the additional cash to purchase food would have to be generated). An attempt to manage prices so that market prices are between P_f and P_e (where P_e is the local market clearing price which produces complete local self-sufficiency) has been a part of Senegal's "80% self-sufficiency" food policy. This is even more clear if the information in Figure 3 is interpreted as aggregate cereal demand.

A policy which taxes imported rice, as long as the market can be kept isolated, would help achieve the policy goal of 80% food self-sufficiency (but, perhaps not in an economically

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feasible way). The likelihood of this actually working in areas around The Gambia is problematic, because world prices are low enough that cross-border trade would prevent effective control of the prices in the regional markets. At the limit, with no state intervention in the marketing channels, most consumer expenditures would be transferred to Gambian traders. One option is to subsidize the import-delivered price so that it approaches the world price (say P_m). In other words, compensate for the distortions created by price controls and a porous border by transferring costs from where markets cannot be isolated to markets which can be isolated. This is the option selected for Ziguinchor and Kolda, where, in the near-term, the transport subsidy will be retained at about 12 FCFA/kg (Table 3). A second option, one recently enacted, is to restrict currency convertibility so that cross-border transaction costs increase. In fact, the immediate impact of the recent restrictions on FCFA convertibility has been a 10.5 FCFA/kg increase in the price of broken rice in the Gambia (in August 1993, from 90 to 105 FCFA/kg).

There is an additional issue which has to do with resource constraints and structural deficits. Figures 4 and 5 show "resource constrained" cases, where producers, even at maximum output, cannot satisfy the region's total non-producer demand. Figure 4 is drawn so there is a possibility for some positive producer surplus and Figure 4 is drawn such that there is a structural deficit at any price. In either case, there is a regional deficit, which is the general situation in both St. Louis and Ziguinchor.

Figure 4

Resource Constrained

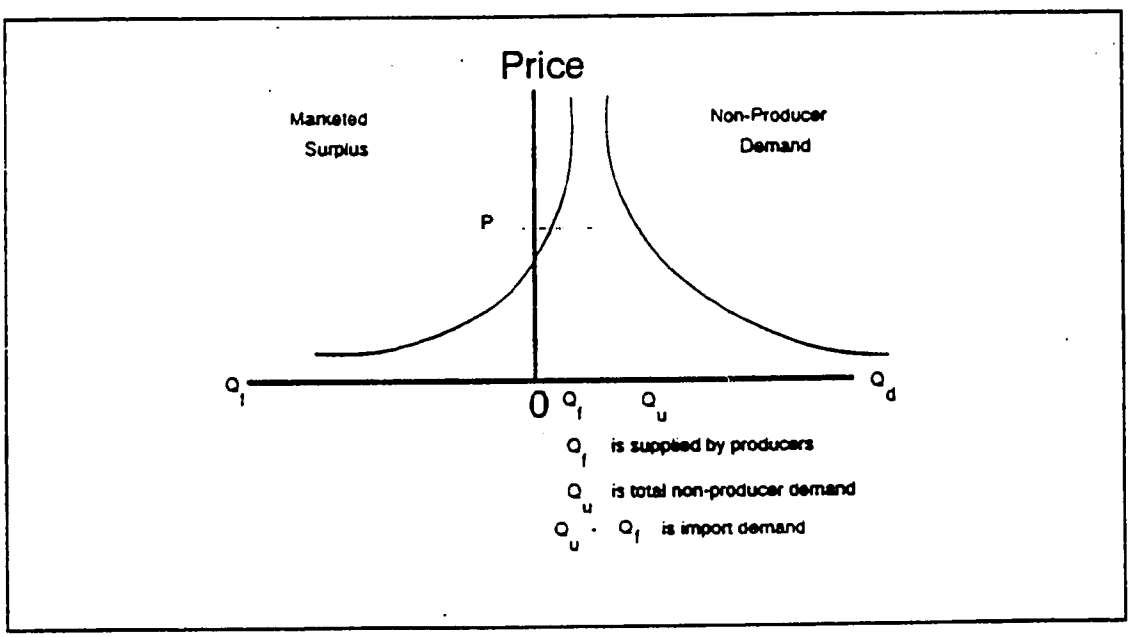

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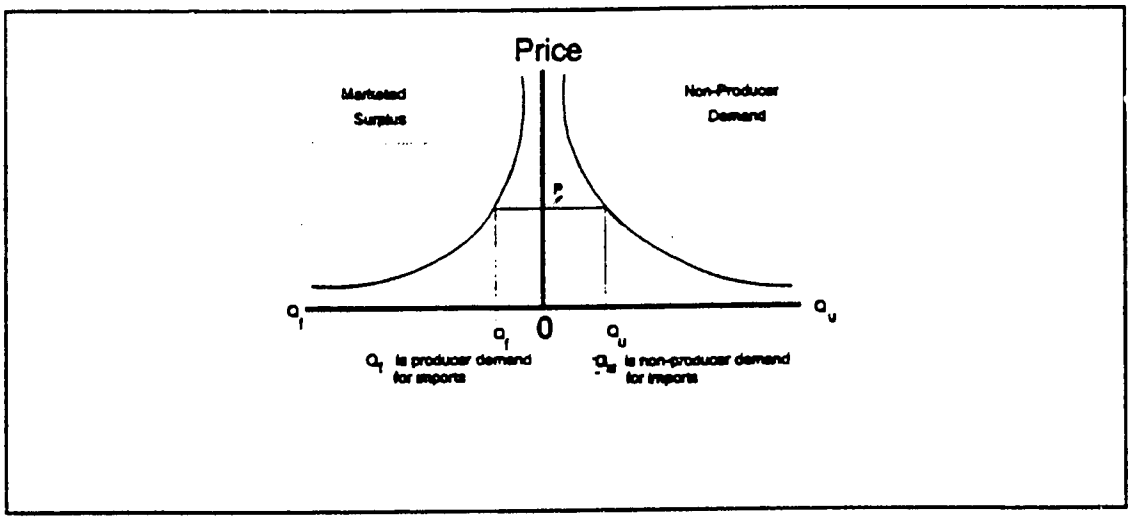
Figure 5

Structural Deficit



Ziguinchor and Kolda: The ISRA/MSU research conducted in Ziguinchor in 1985 showed that virtually all local farmers were cereals deficit, by 25% to 90% of annual cereal needs, depending on the village. Villages south of the Casamance River were generally much more "deficit" than villages north of the River. Part of this is attributable to lost or abandoned lowland rice fields (farmers reported abandoning about two-thirds of their fields either because of low rainfall or related soil degradation from salt intrusion)[12]. This is certainly evidence that a resource constraint exists. This research also found that the farm-level price elasticity of demand for imported rice was -0.9, which suggests that the marketed surplus function is about as drawn in Figures 3-5. On the aggregate, according to the study, the function is, in fact, as represented in Figure 4. But, there were also "food security" differences between farms north of the Casamance River and farms south of the Casamance River. Farms in the south were so resource-constrained that they were not able to cover the deficit from farm and non-farm cash revenues, while the farms to the north actually had a surplus from a "security" point of view. Given the precarious food security position of a large part of the farm population in the Region and the recent political unrest, it is understandable why the GOS has opted for a phased introduction of "free" margins in the Region of Ziguinchor.

Kolda and Tambacounda are somewhat different from Ziguinchor; resource constraints are somewhat less sever, socio-cultural patterns are different, and the mix of other cereal crops in the production system is considerably greater. That is, farmers in this Region are likely to be more responsive to relative prices than is the case in Ziguinchor. An indication of the degree of responsiveness is given by research in the Gambia, just north of the Region of Kolda and research conducted under the Canadian Rural Forestry Project located near the City of Kolda.[13]

[12]However, 1985 was also a very bad rainfall year.

[13]See Part II, pages 21 and 28.

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While these two studies do not cover the Region in a systematic way, they cover a considerable part of the Region and provide, at least, an indication about potential responses to a change in rice pricing policy.

Farm families near Kolda reported purchasing about 25% of their annual cereal needs and urban families reported purchasing 50% of their annual cereal needs. About 50% of the urban cereal purchases and about 40% of the rural cereal purchases were for rice. Since only about one percent of total rice production was marketed (and only about 3% of millet/sorghum and maize), virtually all of the purchased cereals were supplied by imports into the Region. The advantage to people in Kolda is that they have a much more varied resource base and a wide range of income sources, including livestock and a wide variety of forest products. In the Region of Ziguinchor, for example, nearly 30% of the cultivated land is allocated to rice, while in the Kolda Region about 11% of the land is allocated to rice. Under these circumstances, farmers in Kolda can be expected to be slightly more responsive to prices than they are in Ziguinchor. It must be noted, however, that there are several factors which may limit any positive output response:

- as with the rest of the Nation, resources continue to degrade; and

- virtually all of the rice is grown by women, who have limited access to land and other inputs.

To the extent that local prices would respond when the transport subsidy is removed, the value of output produced by women would increase. But, the physical and cultural constraints may be so severe that the output response would be small.

Rural families in the northern part of the Region of Kolda <u>may</u> be much more price responsive than those near the city of Kolda. Subject to the relevance of data for farm families in central Gambia (just north of Kolda), these farmers sell a much larger portion of their rice (11% of production) but about the same portion of coarse grain production as other regions (3%). The analyses of farm production data for upland farms in this area indicates that rice supply will increase 7.8% for each 10% increase in the price of rice, but that rice supply does not respond to other grain prices or to groundnut prices. Rice is only about 9% of total volume produced, so the overall production impact of a 10% increase in the rice price would be about 0.8%. This requires that a change in the retail price is reflected in the farm price, and, given the "Gambia/Bissau Connection" and the difference in the kind of rice consumed, both prices are likely tied more closely to world prices and costs in the Gambia than to Senegal's administered prices. In fact, some estimate that cross-border trade with Gambia is as much as 65,000 tons/year, with an additional 15,000 from Guinea Bissau and perhaps as much as 10,000 tons from Mauritania[14]. Senegalese officials believe that the recent restriction on FCFA convertibility has eliminated a large part of this trade. No attempt is made to account for the loss in economic activity caused by this measure, nor for the "macroeconomic benefit" of the inbalance it is intended to address.

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[14]CILSS/Club du Sahel, January 1991, page 103.

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The immediate impact of a higher rice price will depend on how other cereal prices respond, and on the cross-price effects on consumption and production. Given the small percentage of production marketed in these regions and the mid-to-low demand elasticities, cereal prices should be fairly volatile, so that a fairly small change in demand should generate a sizable change in prices and, subsequently, will have an impact on supply[15]. Even if cereal prices were to increase proportionally, so a 10% increase in rice prices also produced a 10% increase in cereal prices, then cereal production would increase a net two percent (decline 2% because of the rice price increase but increase 4% because of the cereal price increase). In other words, as long as the cereal price increase is 50% or more of the rice price increase, then cereal production would increase, but only slightly. Both cereal and rice production cannot increase without an opposite impact on something, and in the context of the data collected and analyzed for this research, it is groundnut production that declines (about 8% if both prices increase 10%). The calculations in Table 5 indicate that prices would increase by 5-6%, so the overall change in output will be about one percent.

All of this argues that the factors determining rural demand and the decision to market from existing supplies may have the greater impact, especially in the short run. The research in the Gambia shows that the quantity of marketed cereals declines 13% for each kilometer it has to be transported (by the farmer). As would be expected, given the small portion of output that is marketed, this research calculates a high rice-price-elasticity of cereals marketed (2.9% change for each one percent change in the price of rice)[16]. The next question is how much influence the removal of margin controls will have on market prices. Within the context of the Figures 3 to 5, this <u>could</u> be substantial, but only if the traders can isolate the markets in the Casamance from trade with the Gambia. The marketing system will undoubtedly continue with two markets: one rural, with close ties to Gambia; and an urban market subject to closer supervision and with a greater respect for import restrictions.

Figures 4 and 5 also show one of the risks associated with a liberalized rice pricing system. Rice pricing described for the PASA and represented in Table 5 under the "Liberal Retail Price" column, generates a regional price at which essentially unlimited supplies would be available. At this price (P on the graph), a kink is created in the rice supply curve, - it becomes horizontal. There are, in fact, two supply regimes: as long as local prices are below the import price plus transportation and handling costs, the producer surplus "function" determines supply (and the region is, essentially, isolated from the import markets); and, when the local price reaches the delivered price (P) the supply is taken over by the import marketing system, so that the "supply curve" turns horizontal. Through time, as the delivered price varies, local prices would follow the path traced by the marketed surplus function until the import-delivered-price is reached, then begin to follow path generated by the demand function[17].

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[15]Part II, page 35.

[16]This may by unreasonably high. The authors of the study suggest that it be interpreted <u>with care</u>.

[17]This has relevance to econometric analyses which try to establish functions for marketed surplus. When the "resource limit" has been reached output is no longer price responsive, a situation which investigations often encounter and which leads to the obvious conclusion about farmer price responsiveness.

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Which suggests that wholesalers could acquire fairly large profit margins, if they can keep the local market isolated.

The possibility that a "privatized" distribution system could lead to high margins is of considerable concern. In a system with active competition, the price would settle at or near the import delivered price. In case of collusion, or at the limit monopoly, the margin would settle at or near $C \cdot (1 - 1/E_{ii})$, where C represents handling and transport costs.[18] Since direct-price elasticities of demand for food in general tend to be inelastic (below one in absolute value), the price could be relatively high. For example, if $E_{ii} = -0.9$ then the margin would be about 35 fcfa/kg compared to the present 16 fcfa/kg. The existence of alternative sources of supply in the regions of Ziguinchor and Kolda should prevent this from happening, especially in the rural areas, where it is nearly impossible to regulate cross-border trade. But, for a market such as St. Louis, and the other central, regional, markets it will be important to insure that there is free and open competition in the distribution of imported rice.

In the longer run, the higher prices would stimulate producers to expand production by acquiring more land and/or changing technology, so the marketed surplus curve would either shift to the right and/or move the point at which the resource constraint becomes dominant to the right. Most research has found that long-term supply responses are much more "elastic" than short-run responses. For example, Putz's analysis of Gambia data produced a long-term rice price supply elasticity of +1.0 and a short term elasticity of +0.78, which are within the range obtained from other, more aggregate, analyses of agricultural supply response. Bond[19] estimated that the aggregate supply elasticity for Senegal was +0.54 for both the short and long-terms, and it was generally 5 times more elastic than in the other African countries included in her analysis. An analysis by Gaye[20] (data covering 1960-1981) calculated that the millet supply elasticity was +0.30 for the millet price and +0.41 for the price of rice. Putz's analysis of cross-section data for the Gambia gives a price elasticity between millet production and rice prices is -0.21. It is likely that the Gaye's results are showing the substitution of millet for rice in consumption while Putz's results show a more classic supply response[21]. Thus, while it may be true that rice production is not especially responsive to other cereal prices, the majority of the evidence indicates that other cereal production is responsive to rice prices. The upshot of all of this is that the USAID strategy for this area (Southern Zone Water Management and soil conservation and rice land reclamation) is directly affected by incentives related to the rice pricing policy being established under the PASA. Farming systems research conducted in the region has shown that relatively simple changes in practices can increase yields significantly. Agronomic research in the Casamance has demonstrated that plowing to a depth of 15-20 cm (maize and rainfed rice) can increase yields as much as 70% and that relatively light fertilizer

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[18] This is the profit maximizing price for a monopolist who equates marginal cost (P_d) with marginal revenue (the slope of the demand curve) here assumed to have a constant direct-price elasticity.

[19] Bond (1983), page 724. The data for the analysis were for the 1970's.

[20] Quoted in Ndoye, Boughton and Crawford (1991), page 2.

[21] Aggregate rice supply response in Senegal is dominated by the rate of development of irrigated systems in the Senegal River Valley, which has virtually nothing to do with prices.

application (175 kg/ha) can more than double rice yields and triple maize yields[22]. This suggests that the much quoted "necessary and sufficient" conditions include more than just price policy. As already mentioned, rice in this part of Senegal is largely a woman's activity, and they have very little access to the necessary credit, training, etc. Pricing policy cannot solve all of the problems. The caveat is that the commodity pricing system must not act to diminish the incentives to implement the necessary technologies.

Senegal River Valley: The greatest immediate impacts due to the new policy will occur in the Senegal River Valley. When the official farm price is 85 fcfa/kg the full cost of producing, collecting, processing and marketing local rice in St. Louis is about 300 fcfa/kg - not including the cost of the primary system development (See Table 6). And, these costs are with yields reported by SAED to average about five tons per hectare. The new policy passes some of the cost of supporting the subsidy to the farmers via the elimination of SAED's purchasing activities and the elimination of the fixed farm price. On the surface this would suggest that farmers may be adversely affected. But, there are reasons why average prices received by farmers will not be much different than in the past. The advantage is that it will now be legal to engage in processing and marketing local rice, so that some of the "extra" cost incurred by the parallel system will be avoided.

As Table 6 shows, the system will remain problematic under any pricing scheme - the cost of rehabilitation alone is about equal to the cost of imported broken rice CIF Dakar. The new policy does inject some new dimensions into the system, but it cannot change the basic cost structure. The GOS has accepted this and has agreed to provide funds from the perequation on imported rice to support system rehabilitation, and to support the cost of SAED's basic extension and "river basin management" costs. The GOS has committed, via CPSP, to give SAED a monthly payment of 100 million fcfa, and to provide funds to cover the costs of irrigation system rehabilitation.

SAED employees will be among the first to feel the impact of the program because their positions will be eliminated. SAED's staff has already been reduced several times, from an original total of 970 employees in 1987 to a current total of 490[23]. The new program calls for an additional reduction of at least 190 people. This has been initiated but is not yet complete. At 3-4 million fcfa per person, this "deflation" will cost about 665 million fcfa. The French (CFD) are prepared to cover this cost as part of their contribution to the PASA. The negative impact of the mill closings on SAED staff may also be softened by a sale (or transfer of ownership) of the mills to the employees.

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[22]Posner (1991) pages 9 and 15.

[23]Reductions under previous adjustment programs.

Table 6

Full Cost of Producing and Processing Rice within the SAED System

Item	Cost/kg, farm = 85		Cost/kg, farm = 75	
Inputs	40.0		40.0	
Gross return	45.0		35.0	
Farm price	85.0		75.0	
Assembly (paddy)	11.4		11.4	
Processing	12.4		12.4	
SAED overhead	3.5		3.5	
Storage	1.4		1.4	
Misc. loss	2.2		2.2	
Total	115.9		105.9	
- By-product value	3.1		3.1	
Net cost (paddy)	112.8		102.8	
Net cost (price at 53%)	179.0		163.2	
Transport	5.0		5.0	
Commercial margin	12.5		12.5	
Total	196.5		180.7	
- Subsidy CPSP to SAED	62.5		46.7	
Rice sales price	134.0	134.0	134.0	134.0
Subsidies				
- SAED extension services	36.5		36.5	
Interest on loans	7.0		7.0	
- SAED subsidy from CPSP	62.5		46.7	
Total	106.0	106.0	90.2	90.2
External Assistance				
Rehabilitation cost	58.0		58.0	
Technical assistance	2.0		2.0	
Total	60.0	60.0	60.0	60.0
Total cost per kg rice		300.0		284.2

Note: does not include cost for basic system development, assumed grant.
Source: CCCE May, 1991. Similar calculations in MDRH/FAO, 1989

Farmers are the second population to be influenced by the program, but the impact may actually be more positive than negative. Since only around 20-40 percent of the total crop is marketed through the official system, and since parallel market prices are generally well below the official price, the average price actually received by farmers has been around 60-65 fcfa/kg. The advantage to farmers is that under the new policy all processing and marketing will be legal, with the prospect that average prices may actually increase slightly. Also, in the past, farmers

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have had to wait for SAED to pay for the rice it purchased, while under the privatized system farmers receive immediate payment. But, there is also a down-side. One of the consequences has already been that CNCAS has trouble collecting loans - to date, only about 50% of the 1990/91 loans have been repaid. Part of the problem is that under the old system SAED could collect the loans for CNCAS as it paid the farmers for the paddy. The liberalized system will make this impossible, so that CNCAS operations in the Valley will be in the same position as in the rest of the country. There is a cost associated with this, but it should not be attributed to the change in the marketing system. It is a problem more directly related farmer attitudes, and the character and operation of the credit delivery system.

The third population to be influenced by the program are the new rice processors and those who gain from a liberalized rice marketing system. For the five years preceding the 1989/90 season, paddy production in the Senegal River Valley varied between 80 and 90 thousand tons - SAED estimated the 1989/90 crop at 117 thousand tons[24]. About 50 percent of total production is marketed, with between 20 and 40% of production marketed through the "official" system (50% sold, 12% for home consumption, 20% post-harvest loss and 18% for seed reserve)[25]. Thus, the system requires a processing capacity of around 60-75 thousand tons per year. One of the initial concerns about eliminating the SAED milling activities was whether or not the private sector was capable of assuming the processing activity. This has not proven to be a problem.

- Even before the private sector had a legal right to market local rice, the number of small rice hullers in the Valley was growing at nearly an exponential rate. In 1980 there were 25 hullers in the Department of Dagana and by 1988 there were 125. Part of the reason for such strong growth in the number of hullers is that they can be operated at a cost which is locally competitive with imported rice - as long as the official retail price is respected and only if a farm price is not above the 75 fcfa/kg "reference" farm price[26]. Each huller can process about 400 tons per year. If 100 are operational, and depending on operating rates, they account for a total capacity of 30-40 thousand tons/year.

- One of the two SAED mills (which are to be sold or closed) is likely to remain in operation. The mill at Ross Bethio (capacity of 16,500 tons/year) was constructed in 1967 and is frequently out of operation. The mill at Richard Toll (capacity of 26,400 tons/year is more modern and operates regularly[27]. It is the most likely candidate for sale to the private sector. This leaves a capacity of 26 thousand tons from the existing SAED mills.

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[24]SAED (1990).

[25]Gueye (1992).

[26]See Kite (1989) and USAID/Senegal (1991).

[27]Gueye (1992).

- One privately owned mill - Delta 2000 - has operated under contract with SAED for several years. It operates nearly 24 hours per day and has a capacity of 22 thousand tons/year.

- Private processors are installing new, medium capacity mills. There are now fourteen such mills in operation, with an annual capacity of 60-80 thousand tons/year, depending on operating rates.

Thus, a total processing capacity of at least 150 thousand tons/year exists. The private sector is clearly capable of assuming the rice processing function.

A related concern has been that the disequilibrium in the cost/price structure will require some interim support for the larger mills. The rice program proposes to ease the transition from heavily subsidized to un-subsidized processing by introducing a declining subsidy to be paid to mills which meet certain conditions:

- the mill must employ an accountant and maintain records sufficient to demonstrate that it has a processing rate of 66% and that it is paying the "suggested" farm price of 75 fcfa/kg paddy.

If a mill meets these conditions, it will qualify for a 25 fcfa/kg processing subsidy in the first year and 15 fcfa/kg in the second year of the program. The subsidy is to stop in the third year of the program. In the third year of the program, the GOS expects that the wholesale price in St. Louis would increase to about 142 fcfa/kg (which implies a appropriate increase in the Dakar wholesale price, because there will be no fixed wholesale prices or margins).

Table 7 shows how the proposed program would influence processor margins. The costs in Table 7 are for a mill which, at near full capacity, can process about 5,000 tons of paddy/year. They are also calculated for a mill operating at about 50% capacity, probably a realistic operating rate in the early stages, and paying the "suggested" farm price of 75 fcfa/kg paddy. Operating at half-capacity, such a mill would process rice at about 20 fcfa/kg of processed rice, and at full capacity, for about 16 fcfa/kg. Data from Table 6, converted to processed rice, and counting processing costs only, indicate a SAED cost of about 30 fcfa/kg. If production is around 100 thousand tons, and if producers market 30% through the new "semi-official" system, then gains from reduced processing costs alone should be between 10 and 14 fcfa/kg, or between 300 and 420 million fcfa in the first year. Instead of paying a subsidy to SAED of 62.5 fcfa/kg of processed rice, the new program will pay 25 in the first year, for a savings to the state of over 1.1 billion FCFA in the first year, 1.4 in the second year when the subsidy is reduced to 15 FCFA/kg, and 1.8 in the third when the subsidy is eliminated. Thus a very conservative estimate of savings to the state over the three year program is 4.3 billion FCFA ($15 million at 280 FCFA/$). Considering the amounts of rice SAED has purchased in recent years, the actual savings to the state could be as high as 10 billion FCFA ($35 million basesd on 70 thousand tons purchased in 1991/92)[28].

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[28]SAED reports purchasing 56,000 tons in 1990/91, 70,000 in 1991/92, and 40,000 during the first season of 1992/93.

Table 7

Processor Margins: Rice Pricing Under the Three Year PASA

Item	Units	Year 1	Year 2	Year 3	Year 3 **
Mill Equipment	fcfa	27,464,000	27,464,000	27,464,000	27,464,000
Buildings (including storage)	fcfa	4,000,000	4,000,000	4,000,000	4,000,000
Interest rate	per year	11%	11%	11%	11%
Transformation coefficient	%	66%	66%	66%	66%
Useful life	years	5	5	5	5
Operating Capacity	ton/hr	1	1	1	1
Operating rate	hr/year	2,500	2,500	2,500	5,000
Production	ton rice	1,650	1,650	1,650	3,300
Millgate Price	fcfa/kg	75	75	75	75
Fixed costs					
Depreciation: equipment	fcfa/yr	5,492,800	5,492,800	5,492,800	5,492,800
Depreciation: buildings	fcfa/yr	400,000	400,000	400,000	400,000
Interest on Capital	fcfa/yr	3,461,040	3,461,040	3,461,040	3,461,040
Maintenance B&E	5% cost	1,573,200	1,573,200	1,573,200	1,573,200
Accounting	fcfa/yr	4,500,000	4,500,000	4,500,000	4,500,000
Labor	fcfa/yr	8,000,000	8,000,000	8,000,000	8,000,000
Total	fcfa/yr	23,427,040	23,427,040	23,427,040	23,427,040
	kg rice	14.20	14.20	14.20	7.10
Variable (per kg rice)					
Fuel 6.25 l/h, 210 cfa/l	fcfa/kg	1.99	1.99	1.99	1.99
Lubrication and parts	fcfa/kg	1.00	1.00	1.00	1.00
Sacks	fcfa/kg	3.50	3.50	3.50	3.50
Financial costs - stock	fcfa/kg	1.04	1.04	1.04	1.04
Loss (2%)	fcfa/kg	1.50	1.50	1.50	1.50
Total variable	fcfa/kg	9.03	9.03	9.03	9.03
Total (kg rice)	fcfa/kg	23.23	23.23	23.23	16.13
By-Product sales (8% volume)	25 fcfa/kg	3.03	3.03	3.03	3.03
Net Ex mill	fcfa/kg	20.2	20.2	20.2	13.1
Transport-market	fcfa/kg	2.5	2.5	2.5	2.5
Wholesale/breakeven	fcfa/kg	22.7	22.7	22.7	15.6
Rice Equiv. Paddy price	fcfa/kg	113.6	113.6	113.6	113.6
Breakeven wholesale	fcfa/kg	136.3	136.3	136.3	129.2
St. Louis Wholesale	fcfa/kg	127.0	127.0	142.0	142.0
Processor Margin	fcfa/kg	-9.3	-9.3	5.7	12.8
Processor subsidy	fcfa/kg	25.0	15.0	0.0	0.0
Processor net	fcfa/kg	15.7	5.7	5.7	12.8
Processor net % return on cost	fcfa/kg	11.5%	4.2%	4.2%	9.9%

** Near capacity operation.
Buildings are depreciated over a ten year period, equipment over five years.
Source: MRDH and the Rice Sector Technical Committee dealing with the PASA.

A reduction of 4-10 billion FCFA in the subsidy paid to SAED does not mean that farmer revenues will decline by the same amount, because much of this is payment for operating inefficiencies, rather than straight income transfers to farmers. Nor does the change from an "official" paddy price of 85 FCFA/kg (farmgate) to a "reference" millgate price of 75 FCFA/kg imply an equivalent change in farm receipts. This is true because, as mentioned above, the effective farm price has been much lower. For example, in 1990, 1991 and 1992, the CSA

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Market Information System reported monthly average local market paddy prices in a range between 50-70 FCFA/kg, and most often between 55 and 65 FCFA. It is difficult to argue, even, that those who do receive the 85 FCFA/kg actually got an equivalent value, because they often have to wait 4-6 weeks to receive payment, so the official price should be discounted for the time delay, which is sometimes done formally when farmers sell (certainly at a discount) their mill receipts to traders or others who are willing to wait for the money. Thus, the observed market price is probably a good indicator of the true, effective, farmgate price. While it would be an exaggeration to claim that all of the "savings" under this program are benefits in an economic sense, there is ample evidence to support a claim that a large portion can be credited as a "benefit" of the program. In addition, the 1.2 billion FCFA that will be provided to SAED to rehabilitate and maintain the irrigation structure should be ample compensation for those who would be harmed by this program. Thus, a conservative estimate of 3 billion FCFA ($10 million) and a high estimate of about 9 billion FCFA ($30 million) are reasonable estimates of the range of "direct savings" to generated by this program. There is good reason to believe that the actual savings will be well above the minimum because the mill subsidy is likely to cover a smaller portion of marketings in the second year.

A slight manipulation of the data in Table 7 shows how this system is most likely to operate. In the first year, even if the mill operates at near full capacity, the subsidy is large enough that an operator gains by participating in the program. Including the subsidy, the mill would net 22.8 fcfa/kg of rice. In the second year, however, with a subsidy of 15 fcfa/kg the operator will net 12.8 fcfa/kg. On the other hand, if the operator eliminates the accountant and pays 65 fcfa/kg paddy, the net would be 14.6 fcfa/kg. This is probably enough difference to provide an incentive to enter the program for one year only[29]. Thus, although a subsidy is planned in the second year, the total paid will be extremely small compared to the system being replaced. Instead of subsidizing SAED by 62.5 fcfa for every kilogram of processed rice, the state will subsidize a small portion of the total by only 25 fcfa/kg.

The data in Table 7 can also be used to develop an indication of what might happen to market prices in the region, especially after the third year of the program when support to the mills stops. The estimated wholesale-breakeven price for the mills is estimated at 136.3 FCFA/kg, exclusive of returns on investment or returns to management, and with a farm price of 75 FCFA/kg paddy. This breakeven price is about 9 FCFA/kg higher than the present "official" wholesale price in St. Louis and about equal to the present "official" retail price. It is clear that some combination of increased wholesale (and retail) price along with some decline in the farm price will occur, once margins and the farm price are no longer under state control. The likelihood is that wholesale and retail prices would increase by about 9 FCFA, with the remainder of the adjustment occurring at the farm level. In fact, a fair amount of the adjustment in prices appears to have already occurred. The CSA market information system reported a retail price for local rice of between 124-131 FCFA/kg for June - August 1993. The market information system also reported an August 1993 average retail price of 142 for imported rice (100% broken) for the region. Together these prices suggest that the farm paddy price is around 60-65 FCFA/kg. In other words, there is an adequate financial margin for many of the

[29] The operator(s) will probably also benefit from access to credit during the first year, which is an additional incentive to participate.

necessary adjustments to have been made. This also suggests that the first-year 25 FCFA/kg subsidy to "qualifying" mills may not be pursued by a majority of the milling companies.

Non-Producing Regions

The impact of a liberalized rice pricing system on regions where rice is not produced is somewhat less complicated than it is for rice producing regions. Diagrammatically, it is just the right-hand portion of the three figures already discussed. However, while for urban consumers the issue may be about commodity substitution, for farmers the impact will be through production, marketing and consumption decisions on other commodities. At its simplest level, a transport subsidy, along with fixed wholesale and retail prices, means lower consumer prices and greater demand for imported rice. Removing the transport subsidy and liberalizing the wholesale and retail price has to lead to an increase in consumer prices and reduced demand for rice. According to the calculations in Table 5, the only non-producing region which should experience a significant price increase is Tambacounda (a small amount of rice is actually produced in the Region, but it amounts only to about 2% of total area planted and is very localized). And, there are several factors which argue for a marginal rice consumption impact on most of the rural population in Tambacounda:

- only about 9% of calories consumed by the rural population (Missirah data) are supplied by rice - millet/sorghum and maize, especially maize are much more important[30]; and

- about two-thirds of the rural population is either cereal self-sufficient or net cereal surplus and the one-third who are net cereal (rice) purchasers appear to respond to factors other than price[31].

But, there will be some impact on consumption and in local grain market prices. Since only about 5% of cereal grain production is marketed in the Tambacounda Region, the proportional response could be fairly large. The net response depends on how all prices change, but, in the short run, Goetz's research shows that those who do market local cereals would reduce the quantity marketed as rice prices increase - clear evidence that there is substitution between rice and local cereals in rural diets in Tambacounda (at least among those who are surplus producers). One potential benefit from higher rice prices in urban centers such as Kaolack and Tambacounda is that processed local cereals (especially maize) become more competitive with imported rice, especially if local cereal prices are as un-responsive to rice prices as the data seem to indicate[32].

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[30]Kelly, Part II, page 42.

[31]Goetz(1), Part II, page 40.

[32]This an approximate consequence of an elastic marketed surplus. If the elasticity of marketed surplus is high then the inverse function (i.e. the price flexibility with respect to the quantity marketed) is low because it is approximately the inverse of the elasticity.

The CRED/MSU research in the Thies/Diourbel area indicates that millet consumption is responsive to both rice and millet prices; i.e. that, in the short-run, marketed surplus of millet will decrease as the rice price increases and increase if the millet price increases. As with other direct and cross-price effects, the final impact will depend on the relative price changes. We expect only very small price changes in the Diourbel and Thies regions, so the overall impact will be negligible in these regions. These two regions also tend to be quite cereal deficit, i.e. there is very little marketable surplus of millet or groundnuts[33]. That is, there is still some risk that remote, high-cost, areas will experience some negative impact from higher rice prices. Senegal has a functioning food security monitoring system which provides the authorities with a means of detecting and if necessary responding to any truly critical food security problems in these areas.

The urban population tends to consume large amounts of rice at times and in forms which suggest that rice demand may not be especially price responsive. Rice is the main dish eaten at lunch in all urban centers (98% in Kaolack, nearly 100% in Tambacounda and 81% in Dakar). Since convenience is a major consideration at lunch, and since rice accounts for only about 30% of the cost of the national dish, "thiebou diene", these consumers are not likely to be very price responsive, because a 10% price increase would lead to a 3% increase in the cost of food. That is, in the near term, an increase in the price of rice can be expected to have a negative impact on most urban consumers, but not at a one-to-one ratio. Econometric analyses emphasize this conclusion. Dakar consumers, according to Ross's 1977 analysis, do not adjust rice or millet consumption in any significant way as rice prices change (family size and income were more important determinants of consumption). The policy as currently formulated does not suggest any immediate change in Dakar prices, so the direct impact will be minimal on the twenty percent of the national population which resides in Dakar. The secondary impact, if local cereal price do respond to higher regional rice prices, will most likely argue for more - not less - rice consumption. But, the additional rice consumption stimulated by higher cereal prices should be small. This is supported by Delgado's analysis of national data (including the USAID/Senegal revised analysis of Delgado's data) which indicates that rice and local cereals are substitutes, but that the rates of substitution are low. It is difficult to imagine that consumption of either rice or local cereals would change by any significant amount. Prices would have to change by far more than anything this program will generate before any appreciable shift in consumption will take place. Since price changes are expected to be negligible, there shouldn't even be an appreciable income effect.

Economic Impacts of Existing and Proposed Rice Policy

Most of the preceding discussion has concentrated on the financial aspects of Senegal's rice policy. The economic costs and benefits, that is the costs and benefits to society as a whole, can be quite different because an economic analysis seeks to evaluate factor inputs at real costs and outputs at their real values to an economy. The economic analysis of changes in

[33]Anecdotal information from farmers in these regions indicates that farmers often do not even produce enough groundnuts to supply a seed stock and provide for personal consumption.

policies can best be summarized according to the "net economic benefits" (which may be positive or negative) accruing to various components of the population.

It is first necessary to establish some reference prices, and in countries such as Senegal, the single most important "price" in the economy is probably the exchange rate. While monetary and exchange rate policy have not been part of the policy discussion, they do have a direct bearing because they help establish the base from which the economic analysis will begin. Thus, the first task will be to account for possible distortions in domestic prices brought about by the exchange rate itself. One analysis of this question, completed in 1991, concluded that the FCFA in Senegal was about 70% overvalued[34]. A later report by the same authors used 70% overvaluation and calculated estimates of the Domestic Resource Cost of producing rice in Senegal[35]. These DRC's all indicate that rice production is an extremely inefficient use of resources; they range from 2.3 to as high as 6.8 in the Senegal River Valley and are estimated at 6.5 for the Casamance. The lower value is for the Middle Valley and is probably underestimated because it does not include a cost for irrigation water. Water must be lifted over the river banks and this adds a substantial amount to the cost of production. The upper value of 6.8 is very high, particularly if contrasted to the DRC's of about 3.0 quoted earlier. Part of the difference between the two estimates is in the assumption about what the equilibrium exchange rate would be (+40% in the latter and +70% in the former), otherwise the two estimates are based on the same crop budget information[36]. It seems reasonable to use a compromise DRC of 4.0 for the lower Valley.

The DRC for the Casamance probably overestimates the actual value, because it is for a semi-intensive technology, which is not really used in the region. The costs for the Casamance also include an "irrigation" cost, although the majority of the rice in the area is grown under rainfed and swamp production systems. Principle inputs in traditional rice production systems in the Casamance are land, labor, and seed, with virtually no use of "traded" inputs such as fertilizer, insecticides, machinery, etc. Recalling that the DRC is the value of domestic, non-traded inputs divided by the value added by domestic production (output price less the cost of traded inputs), it is clear that the DRC for the Casamance is much lower than 6.5 because the denominator is just the border price. A more realistic DRC for rice produced at current levels of productivity in the Casamance is closer to 1.2, and if productivity was to be increased by as little as 20% the DRC would be close to or even below one, which would indicate that resources were being used efficiently. A second reason for expecting a much lower DRC in the Casamance is that the world price for wholegrain rather than the price for broken-rice is more appropriate to the kind of rice produced and consumed in the area. The world wholegrain rice price is normally at least 50% higher than the broken rice price, so the DRC would be reduced to well below one.

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[34]Salinger and Stryker, 1991.

[35]CILSS/AIRD, Avril 1991, page 15. These DRC's are similar to those reported earlier in this report (page 2).

[36]They are based on crop budgets developed by F. Martin. See the Senegal Agricultural Sector Analysis, Annex III for the detailed budgets.

Senegal River Valley Rice Producers

A minimum estimate of the gross "cost" of misallocated domestic resources from encouraging the current system of rice production in the River Valley can be approximated using the DRC's, world rice prices and rice output. Since it is not true that all rice in the Valley is produced inefficiently (i.e. some farmers double crop rice/rice or rice and some other crop such as tomatoes, and attain reasonable "efficiency"). We could adjust for this by weighting detailed DRC's by appropriate output volumes. Unfortunately, this level of detail is not available. We do know that land use intensity in the Valley has been around 0.8[37] vs a potential of around 1.3, so the vast majority of the production probably falls within the quoted DRC's. The lower and upper Delta (Dagana and Podor) produces between 80% and 85% of the rice in the Valley, and these are the areas with the highest DRCs. Thus, a reasonable weighted DRC (0.8x4.0 + 0.2x2.0) for the entire Valley is 3.6. Paddy production averaged about 174 thousand tons of paddy (114.8 thousand tons of rice) for the cropyears ending 1991 and 1992, with about 36% of paddy production (41.6 thousand tons rice) "officially" marketed. The CIF price for broken rice was 65 FCFA/kg in 1991 and 1992, so the value of rice replaced by domestic production was about 7.5 billion FCFA for total production or 2.7 billion FCFA for marketed production -- at present exchange rates these are $26.8 million and $9.6 million, respectively. At a DRC of 3.6, Senegal used domestic resources valued at between about $25 million and $70 million per year more than was necessary. That is, the potential economic benefits from better resource allocation in the River Valley is at least $25 million and perhaps as high as $70 million per year. By emphasizing private sector growth in production, processing and marketing, by eliminating sizable distortions, and by helping to focus SAED toward active support for better resource management, this program establishes the conditions for sustainable investment with direct benefits to individuals living and working in the Valley. The World Bank, the French, the EC and several other donors are actively engaged in providing support to SAED and to local farmers so they can make this transition, so there is reasonable assurance that the potential gains from a more rational system can actually be achieved.

As with most structural adjustment programs, the benefits are necessarily indirect and medium to long-term -- they cannot all be expected to occur in the first few years of the program. The final impact depends on the final disposition of the "savings" from the gains in operational and resource allocation efficiencies. At the least, the "savings" can be considered as less-debt so that more resources may be available for productive investment. Similarly, the program will help to improve the efficiency of public and private investment. Both will contribute to growth. Unfortunately, there is little parametric information is available from which to measure the likely contribution to growth. Research has demonstrated, generally, that countries with low debt have had significant positive growth, while growth has been negative for those with high debt[38]. The difference in growth between the two has been measured at about 8 percent per year. The impact of the program will be positive, but an exact quantification is not possible. Research by the World Bank on factors influencing return on investment for its development projects has also shown that returns to investment are

[37]Based on SAED data.

[38]Buffie, May 1992.

significantly higher when macro economic and sectoral policies are "right"[39]. These impacts are difficult to quantify, but if the program helps to increase the return on investment by only one-half of one percentage point, then the annual "benefits" from the program would be in the area of $10 million (irrigation system development cost of 4 million FCFA/ha times 20,000 hectares, with an exchange rate of 280 FCFA/$). A sizable share of this would accrue to individuals because the donors have begun to emphasize smaller, private sector operations. There would be also be a broader, sector wide impact of "savings" in the Valley, but this would probably be quite diffuse.

Casamance Rice Producers

The review of production and consumption conditions in the Casamance produces a conclusion that existing policy has acted to discourage rice production in the Casamance (and explicitly by favoring development of the Valley at the expense of the more traditional production systems in the Casamance). The primary "problem" in this region is resource degradation because of salinazation of rice producing lands. The program will contribute to economic performance in the region by assuring that state imposed distortions in relative prices are eliminated, but it is difficult to argue for any direct impact on production or any sizable impact on rural consumption. In all honesty, overcoming resource and farming systems constraints will have a much greater impact. The positive contribution of the new policy will be "facilitating" in that it helps eliminate distortions so resource allocation decisions can be made on more rational grounds.

Consumers

The exchange rate, and distribution efficiency are probably the single most important elements influencing the economy on the consumption side. On an economy-wide basis, it cannot be said that consumers have benefitted from the overvalued exchange rate by paying lower prices for the imported rice than the structure of the economy should support. In fact, in the absence of a flexible monetary policy, pricing policy has implemented exactly what a second-best arrangement would call for - tax imports and subsidize exports. Table 8 shows that the rice pricing framework has been more than adequate in adjusted domestic prices to account for an overvalued exchange rate. Since the policy has been to maintain a constant retail price the actual tax rate changes, depending on the CIF cost of imported rice. But, during most of 1991, 1992 and 1993 the tax rate has been fairly constant at around 80%. World prices declined in August, so the tax rate increase to 120%.

The recent decline in world broken-rice prices demonstrates the damage that a fixed pricing policy can impose on the rice consuming population. Although it is probably not administratively possible, or desirable, to establish a system where the import tax varies frequently, a somewhat more flexible system would avoid imposing an excessive burden on the rice consuming population when world prices decline, as they have recently. Consumer demand tends to be less elastic, the shorter the time period involved, so in the very short-term it is

[39]Pohl and Mihaljek, May 1992.

unlikely that urban consumers would make very large rice consumption adjustments to a lower rice price.

Table 8

Broken Rice Border Prices: World Prices, Equivalent CPSP Price, and Tax Rate (1991 - 1993)

Date	Broken Rice FCFA/Kg		Overall Tax Rate (%)
	World Border CIF/kg	CPSP Border Equivalent	
1989 - 1990 average	76.0	114.8	51%
1991 average	65.1	116.9	80%
1992 September	65.7	116.9	78%
1993 March	65.7	116.9	78%
1993 August	53.2	116.9	120%

CPSP border equivalent = Wholesale price (120 before 1991, 122.4 after 1991) less port handling cost (except import duty and port tax see Table 1).

Source: Border CIF cost from CPSP and MDRH/UPA

Rural consumers, on the other hand might make some substantial adjustments, especially if the change occurs during the immediate pre-harvest (as August-September) period when local grain stocks are exhausted. Even if we believe that the system is rice-saturated, there would certainly be a gain on all accounts because real incomes would increase. Available income elasticities suggest that a large portion of additional real income would go to consumption of meat, poultry products, and vegetables. The opposite is also true, that is, if world prices increase, then at some point, not far from recent world prices, a fixed price system will begin to generate consumer subsidies. At current domestic prices, a CIF price of 69 FCFA/kg would leave the current tax system about at equilibrium in terms of a 70% adjustment for the exchange rate, and, it is only since the beginning of the 1990's that world prices have been below this level. Measures proposed under the "new" rice policy will avoid these problems, because a flexible pricing system, based on world prices, will be establish. It seems reasonable to establish a system which periodically (perhaps quarterly) adjusts the import duty according to the degree of overvaluation of the FCFA in Senegal. This has the advantage of maintaining a appropriate equilibrium, should monetary policy change in the future.

Some Long-Term Issues

The major part of the preceding analysis dealt with immediate and mid-term issues. These need to balanced against some longer-term considerations. The analysis of DRCs, exchange rates, prices and likely price changes is based on world prices over the last two to three years, when the exchange rate has been overvalued and world rice prices have been low -- a combination which generates high DRCs and which has permitted the state to generate a surplus on the rice perequation account. Neither has been universally true and there is no reason the expect the current situation to extend very far into the future.

- The world price for broken rice and the exchange are at, or near, 10 year lows, and there is every expectation that they will both increase in the near future. This is good news and bad news: it would help improve the DRCs for domestic production (for labor intensive technologies), but it would eliminate the positive perequation so desperately needed by the national budget (See Table 9). The pricing system actually generated substantial subsidies to rice in six of the ten years during the 1980s, and any joint movement of prices and exchange rates toward past levels would move the system very close to generating more subsidies. Given its other budgetary and structural problems, Senegal cannot afford such an event. There is no question that world economic recovery will eventually generate such a scenario. In the longer-term, population growth in Asia will eventually reduce the supply of inexpensive rice now available. This may take some time, but given that the markets for this rice are "thin", such a change will generate an immediate (probably permanent) upward pressure on the price of broken rice.

There <u>is</u> a positive longer-term prospect for agriculture in the Senegal River Valley. When the power distribution system from the Manantali Dam is completed, a much less expensive form of energy will be available and irrigation costs will be reduced substantially. For example, water pumping cost for the Middle Valley is about 25% of the total production cost. Lower cost electricity could reduce production cost by as much as 20%, <u>and</u> in terms of DRCs, it would shift costs from high-cost imported inputs to domestically provided inputs.

While longer-term prospects may be argue for some improvement in prospects for irrigated agriculture in Senegal, it is also clear that the present situation, with present inefficiencies, must be addressed if these prospects are to be realized. The new rice policy is an important, but not final, step in that direction. The program sets the stage. The accompanying measures must also be implemented so that the system becomes an economic asset rather than an increasingly insupportable burden on the national economy.

Another longer term issue which has not been addressed is the economic impact of transferring broken rice import responsibilities from the state to the private sector. It would probably not be appropriate to argue that this will create employment, since the state tends to maximize employment at the expense of economic efficiency. The real gains will come from distributional efficiency, which has already been discussed. A secondary, investment related, benefit generated by economic profits is likely, but this is a much longer term question and dependent on other factors such as monetary and investment policy which this program does not address.

Table 9

Unit Perequation on Broken Rice 1980-1993

Year	FOB World Price $/ton	Exchange Rate FCFA/$	Senegal CIF FCFA/kg	CPSP Cost FCFA/kg	CPSP Wholesale FCFA/kg	CPSP Net FCFA/kg
1980	374	211	80	103	75	-31.2
1981	285	272	79	102	75	-30.2
1982	305	323	100	125	97	-31.2
1983	295	381	114	141	105	-39.2
1984	295	437	131	159	120	-42.2
1985	344	315	110	136	148	8.8
1986	453	315	145	174	148	-29.2
1987	151	323	50	70	149	75.8
1988	225	319	73	95	133	34.8
1989	260	305	81	108	121	9.8
-1990	228	310	72	98	123	21.8
1991	195	280	64	93	123	26.8
1992	172	315	65	90	123	29.6
1993	155	280	53	78	123	41.6

Source: 1980-1990 from Cellule Apres Barrages, 1990, Annex 2, page 21; 1991-1993 CPSP and MDRH (1993 for August only).
Note: Freight cost approximately $357ton, insurance approximately $6/ton. CPSP cost includes port taxes, handling and transport to warehouse. CPSP wholesale is approximate national average wholesale.

Conclusion

The rice program focuses on eliminating subsidies for distribution of imported rice, eliminating fixed wholesale and retail prices, on eliminating subsidies for local rice processing and marketing and on liberalizing broken rice imports. There several beneficiaries:

- the State, which should realize a total of over 1.866 billion fcfa in reduced expenditures in the first year of the program (1.1 billion from reduced subsidies to SAED and 766 million from elimination of transport subsidies) and a minimum of 3 billion FCFA ($10 million) over the three years of the program;

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- local rice processors and distributors, who will profit from a legalized local rice marketing system - processors are expected to earn 480 million fcfa from "officially" processed rice;

- the economy at large through better resource allocation. estimated present misallocation is in a range between $25 and $70 million annually. nearly all of the benefits realocating these resources will accrue to individuals.

The urban population outside Dakar is most at risk from the removal of the transport subsidies. However, the analysis has shown that the impact is likely to influence only consumers in Tambacounda and Ziguinchor, where the impact is expected to be minimal.

The secondary impact of higher regional rice prices as transmitted through local cereal grain prices and local cereal grain marketing is also expected to be minimal (again, only in the south and southeast).

Annex I

Food Sector Regulation
1984-1992

Annex Table 1

Senegal: Domestic Food Grain Regulation 1979-1992

Publish Official Price	Publish Marketing Season	Authorized first-stage marketing (Assembly)		Authorized second-stage marketing (wholesale)		Notes
Date	Date	Date	Action	Date	Action	
11/79	11/79	4/80	Authorized traders	4/80	Authorized Traders	Licenses required for any trader handling more than 200 kg.
11/80	11/80	11/80	Producer Coops.	11/80	CAA, Processing Industry Authorized Traders	Annual license for a specific commodities. Private trading of local rice prohibited.
10/81	10/81	10/81 3/82	Producer Coops. Added CAA, CPSP and Authorized traders	10/81	CAA, CPSP Authorized traders	CPSP monopoly on rice imports.
12/82	11/82	12/82	Producer Coops. CAA Authorized traders	12/82	CAA Authorized traders	
11/83	11/83	1/83	Producer Coops. Authorized traders	1/83	Authorized traders CSA (when created)	Licensing by commodity no longer required.
1/84	1/84	1/84	Producer Coops. CSA, RDA's Authorized traders	1/84	Authorized traders CSA, RDA's	CSA purchases at official prices. Authorized traders must make all records available to Min. Commerce. Transport of more than 200 kg must be authorized.
12/84	12/84	Unchanged				Also established official prices for cereal seeds. 200 kg restriction on "non-authorized" transfers is maintained.
		4/86	CSA is authorized to regulate the cereals market (via purchase, storage, and sale of cereals at official prices).			
1/88	Perequation on imported flour and wheat eliminated (eliminated a 1960 regulation).					
5/88	Fixed cereal (non-rice) prices, licensing and volume restrictions eliminated.					
9/90	Rice transport subsidy removed from the CPSP budget, replaced by a transport "perequation" system - no effective change in the subsidy.					
1/92	Eliminate intermediate and high quality rice import licensing. Perequation payment required.					
9/93	Contract for private sector management of PL 480 cereal imports signed.					

Source: 1979-1984 from Newman et al. (1987), page 6. After 1984, Annex I.

Senegal: Domestic Food Grain Regulation 1984-1992

REFERENCE		Official publishing date	Senegal: Domestic Food Grain Regulation 1984
No JORS	Date		
84-404	6/4/84	6/2/84	Allow firms to readjust selling prices according to input costs except for staple food which maintain official fixed prices (i.e peanut, mil & sorghum, maize, tobacco,tomato, cowpea, paddy, broken rice, sugar, oil, arabic gum,potatoes, charcoal, banana,cashew nuts and transport of peanut.
84-309	3/15/84	4/28/84	CPSP's role in: • regulating and stabilizing the prices for certain products (i.e peanut products, other oil products cereals, sugar, cotton and wheat and flour • buying from importers and local producers • Stocking and distributing rice and millet in the country CPSP can import and commercialize on behalf of GOS all products; CPSP required to have a two months stock of rice
83-1277	12/14/83	2/25/84	Re peanut transport costs: 31.35 and 55 per ton/km respectively for paved, improved and non paved road
83-1286	12/19/83	3/3/84	Giving Sodefitex exclusive control of cotton production and fixing the beginning of marketing campaign (12/5/1983)
83/1287	12/19/83	3/3/84	Fixing marketing dates for oil and edible Peanut (12/5/83). Sonacos and Sonar are exclusive buyers. No transaction of more than 100 kg allowed for anybody else
83-1210	11/24/83	3/24/84	Official cotton producer prices (70, 62 and 35 respectively for No 1,2 and 3 grades)
84-053	1/23/84	3/24/84	Ag campaign for local cereals (paddy,millet,sorghum, maize and cowpea). CSA is authorized to buy at official fixed prices . Wholesalers are obliged to declare their stock,sales records and all other information related to their trading business to Ministry of Commerce. Transport of more than 200 kg must be authorized
83-1203	11/24/83	3/31/84	Official producer prices for Oil and Edible peanuts.
84-201	2/21/84	4/11/84	Sonar exclusive buyer of Oil and edible Peanut seeds at official prices
754	1/21/84	4/14/84	Marketing Campaign for cashew nuts (3/1/1984) Sodenas is the only official buyer.
1951	2/16/84	5/5/84	ONCAD is dismantled beginning 12/31/1984
6236	5/24/84	7/27/84	Marketing campaign for the palm oil with minimum prices and special agreement for the Coop regional Union of Casamance and 5 private traders
84-1047	9/18/84	10/6/84	Official paddy producer price at 66 fcfa/kg with exclusive buyers (SAED, SODAGRI,SOMIVAC and SODEFITEX)

Senegal: Domestic Food Grain Regulation 1984-1992

REFERENCE		Official publishing date	Senegal: Domestic Food Grain Regulation 1985
No JORS	DATE		
84-1408	11/26/84	1/26/85	Reorganization of MDR:title 20 defines CSA's mission which is:a) implement national storage policy and manage the national security stock; b) promote, manage and distribute food aid; c) set up and monitor the national food plan
85-178	2/18/85	2/16/85	Decree fixing the norms for the peanut marketing campaign and the ways to control the quality. Sonacos and SEIB are the only legal buyers of peanut production
84-1481	12/18/84	3/30/85	Decree organizing the 1984/85 agricultural marketing campaign : *** Peanut marketing campaign. producer prices.oil peanut seed: 79 fcfa/kg (w/20 fcfa "retenue" for seed and fertilizer.82 fcfa/kg for edible peanut (same "retenue" system):prod price 70 f/kg for oil peanut and 90 and 70 respectively for 1st and 2nd choice edible peanuts. *** Cereals marketing campaign. Seed Producer prices. millet/sorghum/ordinary maize (70 fcfa/kg). hybrid maize (103 f/kg). irrigated paddy rice (79 f/kg): rainfed rice (75 f/kg):cowpea (103 f/kg)
84-1484	12/18/84	4/6/85	Decree organizing the 1984/85 cotton marketing campaign to begin November 19. 1984 with only Sodefitex as buyer. Producer prices are: 70.62 and 35 for respectively the 1st. 2nd and 3rd choice.
85-482	2/5/85	10/19/85	Creation and organization of Food Aid Common Fund (FCCAA) under Ministry of Rural Development tutelage
84-1512	12/21/84	4/27/85	Decree organizing the 1984/85 cereals and cowpea marketing campaign to begin October 15, 1984 for millet,maize.sorghum and cowpea and November 11, 1984 for the paddy rice. RDA's, CSA and licensed Wholesalers are the only agents allowed to trade cereals at 60 Fcfa/kg and 3 fcfa margin and 3 fcfa transport cost. 2 fcfa premium is given to Coops engaged w/ CSA. It's forbidden for any private person except the agreed agents to transfer more than 200 Kg .

REFERENCE		Official publishing date	Senegal: Domestic Food Grain Regulation 1986
No JORS	DATE		
11835	10/10/85	1/11/86	Ministerial "arreté" re the obligation for traders to declare stocks for monitoring purpose.
86-476	4/23/86	5/17/85	Decree reorganizing Ministry of Rural Development and modifying decree 76-212 of 2/24/76 which create CSA: Now CSA has the authority to participate and regulate the national cereal market.

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Senegal: Domestic Food Grain Regulation 1984-1992

REFERENCE		Official publishing date	Senegal: Domestic Food Grain Regulation 1987
No JORS	DATE		
87-240	2-24-87	5/23/87	Decree fixing the norms for the peanut marketing campaign and the ways to control the quality. Sonacos will be the only legal buyers of peanut production.
87-1005	9/7/87	10/31/87	Decree creating the National Cereal Council to monitor the implementation of the 1986 Cereal Plan

REFERENCE		Official publishing date	Senegal: Domestic Food Grain Regulation 1988
No JORS	DATE		
88-070	1/18/88	2/27/88	Abrogation of decree No 346 of 10/14/1960 re perequation on wheat and flour.
88-653	5/7/88	8/6/88	Decree fixing consumer prices for some staple foods like sugar, oil and broken rice. The Wholesale, 1/2 Wholesale and retail prices for broken rice in Dakar are respectively 120.192 fcfa/MT, 124,879 fcfa/MT and 130,000 fcfa/MT. The GOS has stopped fixing official prices for local cereals. This is the end of regulation of the cereal sector.

REFERENCE		Official publishing date	Senegal: Domestic Food Grain Regulation 1989
No JORS	DATE		
88-1744	12/29/88	2/18/89	Decree fixing the prices for selected products and services: peanut, cotton, broken rice, local paddy rice, sugar, oil for consumption, charcoal and tomatoes.
926/MDR	1/18/89	4/8/89	Decree creating the "Niebe Project"

REFERENCE		Official publishing date	Senegal: Domestic Food Grain Regulation 1990
No JORS	DATE		
6795/MRDH	6/21/90	9/15/90	"Ministerial Arrete" creating the Seed Project "Projet Autonome Semencier".
9994/MFP/DC	9/12/90	11/17/90	"Ministerial Arrete" reorganizing the Direction of Commerce under the Ministry of Finance and Economy. Ministry of Commerce is dismantled.

Senegal: Domestic Food Grain Regulation 1984-1992

REFERENCE		Official publishing date	Senegal: Domestic Food Grain Regulation 1991
No JORS	DATE		
Law 91-11	2/11/91	3/23/91	Law establishing a levy on whole and intermediate imported rice. Receipts are to support local cereal production.
91-532	5/24/91	9/14/91	Reorganizing the Food Aid Common Fund (FCCAA) and placing it under Prime Minister tutelage. A steering committee was created including Prime Minister Office, Ministry of Finance and Economic Affairs, Ministry of Rural Development and Hydraulic, Ministry of Industry and Commerce and Donors.
91-761	8/5/91	10/19/91	Creation and organization of an Agreement and Monitoring Committee for Rice under Ministry of Finance and Economic Affairs instead of General Secretary of Presidency The Committee will assure: • elaborate all terms of reference re rice supply • select bidders • prepare contracts • monitor the supply and CPSP's stocks • monitor rice distribution • controle the quality and • determine periodically the levy to be applied to intermediate and whole grain rice. Reps from Presidency, Prime Minister Office, Ministry of Industry and Commerce, Ministry of Rural Development and Hydraulic, the Financial Control Office, the chief of National Committee for Administrative Contracts, the Director of CPSP and Ministry of Finance serving as General Secretary.

Senegal: Domestic Food Grain Regulation 1984-1992

REFERENCE		Senegal: Domestic Food Grain Regulation 1992
No JORS	DATE	

REFERENCE		Senegal: Domestic Food Grain Regulation 1993
No JORS	DATE	
	9/93	GOS contracts for private sector management of PL 480 rice.

PART II

A REVIEW OF

FOOD MARKETING COSTS

PRICE AND INCOME DEMAND ELASTICITIES

AND

FOOD CONSUMPTION ESTIMATES FOR SENEGAL

Rod Kite
USAID/Senegal
September, 1993

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ARE RICE AND LOCAL CEREAL GRAINS SUBSTITUTES?

An affirmative answer to this question is assumed by many of the duty, "protection" and/or "perequation" mechanisms applied to imported cereals. It would seem that the answer to the question is self-evident. However, on the basis of most empirical evidence for Sahelian and sub-Sahelian Africa, the answer is either that we cannot tell (i.e. the relevant cross-price elasticities could not be obtained); the elasticities are not significantly different from zero; or contrarily, the relevant cross-price elasticities are negative (i.e. rice and local cereals are, in fact, compliments). These kinds of results, loosely aggregated from a variety of studies have led to some overly strong statements of the type: "recent consumer surveys do not support the notion that Sahel rice consumption is driven by price" (Reardon, page 8). This, if true, has some obvious implications for rice pricing policy in these countries. First, this statement is not precisely correct. Reardon's review of three household studies (Ouagadougou in 1982/83 and in 1984/85 and one covering seven regional capitals in Mali in 1985/86) and one cross-country time series study (covering Senegal, Burkina Faso and Mali for the period 1966-1986) generally shows that the price of rice is a major determinant of rice demand and that demand decreases as price increases. In fact, it would be a considerable shock to economists if the results had been any different (assuming that the data were good and that appropriate statistical and mathematical techniques were used - and this may still be a reasonable question to ask).

What these studies have apparently shown is that rice and local cereals (corn, millet and sorghum) are, generally, not substitutes. To the contrary, when they have concluded anything, they have concluded that rice and local cereals are compliments. This is possible. But, before this conclusion is accepted as fact some possibilities need to be considered. There are at least four:

(1) the data are no good - Reardon mentions this in several places;

(2) the data do not correspond to the theory being applied - trying to fit demand functions to time series data in Sahelian countries probably applies to both this point and to point 1;

(3) the analysis and analytic techniques are incomplete or inappropriate. It is not possible to completely deal with this issue without access to the research reports, but some issues can be raised, especially related to the three consumer surveys; and

(4) the results from these admittedly restricted studies may be applied to a policy analysis which is more general than the underlying data can support (i.e., making nationwide impact statements about consumer behavior based on data collected from urban consumers, or Sahelian-wide inferences from locally-specific studies).

These conclusions are often based on "uncompensated" demand elasticities, while the economic concept of "substitution" is generally based on "compensated" demand elasticities. Conclusions drawn from uncompensated elasticities relate to gross substitution or gross compliments. A conclusion that the uncompensated cross-price elasticity between rice and local cereals is not different from zero is, under normal circumstances, simultaneously a conclusion

that they are substitutes, with the substitution effect determined by the income elasticity and the importance of the commodity in the consumer's budget. Analyses which deal with the farm population, who must decide either to consume or to sell what they produce introduces a third, "endowment", effect which must be considered. The easiest way to demonstrate why these issues are important is through the Slutsky equation, which defines the linkage between compensated and uncompensated elasticities. A version of the Slutsky equation which includes an "endowment" of some resource(s) which may be sold or consumed is[1]:

$E_{ij} = e_{ij} + E_{iy} * (z_j - w_j)$. Where,

E_{ij} is the uncompensated price elasticity showing the percentage change in the consumption of commodity i for a one percent change in the price of commodity j;

e_{ij} is the compensated price elasticity (if $e_{ij} > 0$ then i and j are substitutes, if $e_{ij} < 0$ then i and j are compliments);

E_{iy} is the income elasticity of commodity i;

z_j is commodity j's share of total income (income determined by the value of the "endowment" - i.e. the value of millet, maize, groundnuts, etc.); and

w_j is commodity j's share of the total value of consumption (own produce included).

If $z_j > w_j$ then the individual is a net seller of commodity j.

If $z_j < w_j$ then the individual is a net buyer of commodity j.

The Slutsky equation makes it quite clear that a conclusion about substitutability based on E_{ij} is generally not appropriate, unless $z_j = w_j$ (value of production is equal to the value of consumption). Since a very small portion of the local cereal crop is marketed by a relatively limited number of farms, the uncompensated cross-price elasticity of rice demand with respect to the price of millet will be very close to the compensated cross price elasticity (because the value of millet production and consumption will be nearly equal). The uncompensated elasticity of demand for millet with respect to the price of rice will depend on whether or not the farm produces rice:

- for those who do not produce rice (z=0), the uncompensated elasticity may be considerably different than the compensated elasticity (this will also apply to urban consumers);

[1]This is close to the idea of a marketed surplus, except this construction is short-term because it does not allow for a production response. It is probably more relevant to cross-section studies than it is to time-series studies.

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- for those who do produce rice ($z > 0$), the uncompensated elasticity may or may not be near the compensated elasticity, depending on whether or not farmers are surplus or deficit. Most investigations in Senegal have found that rice producers are deficit, so the uncompensated elasticity should be near (but above) the compensated elasticity - unless the income elasticity is very high, in which case it may be considerably above the compensated elasticity.

The conclusion: the uncompensated elasticity of demand for millet with respect to the price of rice will be approximately equal to the compensated elasticity only in those areas where rice is produced - this excludes the majority of the farmers in Senegal and, obviously, all of the urban population.

The magnitudes of these parameters is an empirical question. A review of available information follows.

SUMMARY

The information from cross-section studies of the rural sector show that rice has become an important food source in the North of Senegal -- in terms of both share of income spent and as a source of calories. The possibility of substitution of locally produced foods for imported rice certainly exists. The issue here is the amount, location and relative cost of these cereals vs imported rice. Rice pricing policy which favors local cereals might induce some shift from rice, but it remains, empirically, to determine the rate of substitution. There is a risk that such a policy will impose higher food costs in the short-run because validation of the "local cereal effect" is tied to production and marketable surplus outside the region and it is likely to lag any price changes by at least one year. As farmers' responses to existing policy in Senegal have already demonstrated, there are socio-economic and climatic factors which limit the production response. Perhaps the most critical issue, here, is the elimination of existing rice pricing distortions so that such inter-regional trade as is possible is encouraged.

Information available indicates that the "substitution" issue is less sever in the Central Groundnut Basin and in the rural south and east of Senegal, where, on the average, rice provides between 15 and 20 percent of calories. In general, commodities which comprise a small share of the consumer budget are price and income inelastic and this might be the case in this region. However, even in these regions, rice accounts for a large portion of cash expenditures for food (50-65%), so consumer responses to rice pricing policy may be relatively more elastic than would be expected from a review of its share in consumption. One factor which argues in favor of this is the greater diversity in the diet, thus greater flexibility (more choices). This remains to be determined empirically, but the evidence suggests that for the rural sector in this region, elimination of the pricing distortions caused by (for example) the transport "perequation" to Tambacounda would have a marginal impact on consumer well being. This conclusion, however, needs to taken with care because there will be differential impacts for different segments of the rural population. For example, several studies have shown that approximately one-third of Senegal's farmers are net cereal purchasers, one-third net sellers and one-third in "equilibrium". A global analysis of data for these farmers may "net-out" any measurement of

the impact, but indications are that net buyers would be disadvantaged, and that the total marketed surplus would decline.

Evidence for the urban sector argues that rice pricing has a substantial impact on consumer well being. The apparent inelasticity of demand with respect to both prices and income indicates that consumers are unwilling to adjust consumption in response to "economic" stimuli. This is supported by surveys of consumer attitudes: consumers do not feel that income is a constraint with respect to rice consumption; other more important determinants such as convenience or variety may be the major factors which influence consumption decisions.

STUDIES REVIEWED

Despite the massive amount of research that has been conducted in Senegal, there are relatively few studies which have attempted a complete (or systems) estimation of the food demand elasticities. Several of the studies which are readily available are summarized in this section. They are:

(1) ISRA/MSU cereal marketing studies;

(2) the ISRA/MSU Ziguinchor Studies (1982/83 - 1983/84)

(3) Socio-Economic Studies by the Kolda Rural Forestry Project

(4) Studies on The Gambia Relevant to Senegal

(5) a study of grain transactions in three villages in the Thies/Diourbel regions in 1977-78.

(6) a CRED/University of Michigan study of 3 rural villages in Diourbel in 1982;

(7) a study of Southeastern Senegalese farmers (Goetz) in 1986/87;

(8) the ISRA/IFPRI Price Policy Study, which covers the groundnut basin;

(9) the IDA Senegal River Valley Monitoring Project.

(10) the "Enquete Sur Les Priorites" conducted by the GOS in 1991/92.

(11) a summary by Bricas and Sauvinet of several consumption and attitude studies in the Sahel;

(12) a small household survey done by Ross, in Dakar, in 1977;

(13) a review of miscellaneous consumption and demand elasticity estimates for Senegal;

(14) a recent study using time-series data by Delgado and Reardon (1992).

Each of these studies has something specific to contribute to understanding Senegal's food consumption patterns, and several of them are relevant to the rice/local cereal "substitution" issue. Demand elasticities extracted from the studies are summarized in the following table (Table II-1).

Table II-3

Senegal: Summary of Uncompensated Demand Elasticity Estimates for Food Grains

Commodity	Own-Price Elasticity	Cross-Price		Income Elasticity	Study Type and Location	Data Period	Author*
		Commodity	Elasticity				
Rice				0.26	Cross-section, 3 rural villages Diourbel	1982	CRED
Rice				0.40	Cross-section, rural		SONED*
Rice				0.12	Cross-section, Dakar	1977	Ross
Rice	-0.886			0.10	Cross-section, rural Ziguinchor	1982/83-1983/84	Jolly
Rice	-0.745	millet	0.20	1.00	Time-series	1979	Jabara*
Rice	-0.628	Local Cereal[1] Wheat	0.168 0.014	-0.162	Time-series	1966-1986	Delgado
Rice	-0.250	Local Cereal[1] Wheat	0.20 -0.06	0.689	Time-series (Delagdo data)	1966-1986	Kite
Millet				0.59	Cross-section rural, 3 villages Diourbel	1982	CRED
Millet				0.20	Cross-section, rural		SONED*
Millet	-1.1	rice	-1.08	0.10	Time-series	1960-76	Niane*
Millet				(-) low income 0.0 mid-income (+) high income -1.93 sample avg.	Time-series	1983	Gaye*
Local Cereals[1]	-0.098	rice wheat	0.164 -0.030	-0.12	Time-series	1966-1986	Delgado
Local Cereals	-0.362	rice wheat	0.233 -0.103	0.795	Time-series (Delgado's Data)	1966-86	Kite
Millet Marketed Surplus	3.51				Cross-section 3 villages Thies/Diourbel	1977-78	Ross
Cereal Marketed Surplus		Rice	2.90		Cross-section, rural upper Gambia river	1985	von Braun

* Entries marked with (*) are taken form Kramer (1984) others are reviewed in this document. [1](Millet, Maize, Sorghum).

Cereal Marketing Studies (1984/1985, 1986/87)

(1) Morris, M.L.
"Cereals Marketing in the Senegal River Valley (1985)", Etudes et Documents, ISRA/MSU, Vol. 4, No. 6, 1991.

(2) Newman, M., Ndoye,O. and P. Sow,
"Tradeoffs Between Domestic and Imported Cereals in Senegal: A Marketing Systems Perspective", MSU International Development Papers, Reprint No. 15, MSU, 1987.

(3) Ouedrago, I, and Ndoye, O.,
"Les Marge et Cout de Commercialisation des Cereales Dan le Bassin Archidier", Acts, Seminaire: La Politique Agricole au Senegal, Edited by Bingen, R.J., and E. Crawford, Vol. 1, No. 2. ISRA, 1989.

The research reported by these reports is from a USAID financed "Food Security Project" which operated in Senegal between 1984 and 1991. The reports are of historical interest, because the cereal marketing system and cereal prices have been completely liberalized since these studies were conducted. However, they do provide information about marketing costs and margins which are useful for establishing a baseline from which to compare free market performance, and from which it is possible to extrapolate some farm-to-urban-market parameters which are useful for policy analysis. Since the Ouedrago report essentially updates the Newman report, and since both deal with the Groundnut Basin, they will be discussed together. The Morris report is specific to the Senegal River Valley and will be discussed separately.

Cereal Marketing in the Groundnut Basin:

The cereal marketing system has undergone considerable liberalization in recent years. It has been transformed from a system with considerable state control to one which is virtually without state intervention. However, despite the deregulation, many of the characteristics of the system have remained stable, largely because the GOS was unable to impose official prices on the marketing system.

- Newman: Gross margins on millet purchased in Kaolack and marketed in Louga (in 1984/85) amounted to 24% of the resale price. The net margin was negative at official prices and 8% of the resale price - at actual market prices. Marketing costs accounted for about 65% of the gross margin and "profit" was 35% of the gross. (Table II-3). These costs are for the complete process, assembly, transport to a central market (Kaolack) and shipment to a deficit area (Louga).

- Ouedrago: Gross margins in 1986/87 for millet wholesalers purchasing in the Groundnut Basin and selling in Touba were 8.8 fcfa/kg (vs 25 fcfa reported by Newman). The net margin as a percentage of sales price was 5%. The net margin was 40% of the gross margin (i.e. marketing costs were 60% of the margin). (Table II-3). These costs do not include first-stage assemble costs.

- Both studies found that turnover rates were high. Ouedrago found that length of storage averaged just over 8 days and Newman found that 72% of the wholesalers stored grain less than one month. The difference reflects, in part, the assemble time included Newman's treatment of marketing costs.

These two reports approached statistical analyses of the marketing cost data in different ways: Newman analyzed the shipping cost per ton kilometer as a function of distance and quantity shipped, and Ouedrago analyzed the gross margin as a function of distance and time in storage. (Table II-2).

Table II-2

Regression Statistics:
Cereal Marketing Margins and Transportation Cost in the Groundnut Basin

Variable	Sample Means		Regression Equations		
	Ouedrago	Newman	Ouedrago(1)	Ouedrago(2)	Newman
Dependent Variable (fcfa) Gross Margin/kg Shipping Cost/ton-km	6.7	65.6	Linear function	Elasticity at sample means	log-linear function
Constant			4.06 (10.9)*		6.59
Distance transported (km)	68.2	111.8	0.03 (7.2)	0.305	-0.60 (12)
Length of Storage (days)	8.1		0.07 (12.2)	0.085	
Quantity Transported (mt)		8.9			-0.14 (3.5)
Number obs.			96		243
R-Squared			0.627		0.86
Period, number of wholesalers interviewed			1986/87 30 wholesalers last 3 sales of the month		Jan-May 1985 63 wholesalers

Source: Ouedrago, page 190, Newman, page 15.
(1) Linear function (2) elasticities at sample means.
* Numbers in parentheses are student "t" values.

Ouedrago's results reinforce the notion that state control of prices and margins was not effective at the time the survey data were collected. The gross margin increases with distance, as-well-as across time. His results show that longer term storage (100 days) would produce a margin of 7 fcfa/kg. This is about the same relationship as noted by Newman, who points out that returns to storage were about 5 fcfa/kg and that transfer returns (i.e. transport from surplus to deficit regions were also about 5 fcfa/kg. As Newman points out, this helps explain why wholesalers prefer rapid turnover; they can make 5 fcfa/kg by storing grain several months or

they can make several times 5 fcfa/kg by moving grain between locations. The Ouedrago data show the same thing; the margin was about the same for grain moved 100 km (3 fcfa/kg) as it was for storing grain 50 days (3.5 fcfa/kg). While neither author mentions it, the State's attempt to set pan-territorial and pan-seasonal prices probably did reduce the "storage incentive". The availability of imported rice will also have had (and now has) a dampening influence on seasonal price variation and acts to reduce the incentive to store local grain.

Cereal Marketing in The Senegal River Valley (Morris, 1984)

As with the marketing studies of the Groundnut Basin, this study of the River Valley is somewhat dated (the data were collected October 1984 and January 1985). Much of the data relate to SAED assembly, processing and storage costs and more recent data are available. For historical interest, the following has been summarized:

Assembly cost		9.4/kg paddy.
Transport cost (varies between 31 and 89 fcfa/ton/km, depending on the type of road).		
Processing cost	Ross-Bethio	9.8 fcfa/kg paddy.
Processing cost	Richard Toll	14.6 fcfa/kg paddy.
Storage costs	Ross-Bethio	0.7 fcfa/ton rice.
Storage cost	Richard Toll	1.5 fcfa/ton rice.

Morris used informal interviews to collect data from parallel rice market traders. Altnough informal, his data show about the same proportional margin relationships as Ouedrago and Newman found for cereal marketing: the net margin on one kilogram of paddy purchased, processed, bagged, and transported to market was 9.8% of the paddy purchase price (75 fcfa/kg); and the gross margin was 25% of the sale price.

Table II-3

Millet Marketing Margins and Costs: Groundnut Basin 1985 and 1986/87*

Item (FCFA/kg)	Ouedrago (1986/87), Purchase in the Groundnut Basin for Sale in: (Exact dates when data for each region were collected are not given)							Newman (1985), Purchase in Kaolack for Sale in
	Dakar	Diourbel	Kaffrine	Kaolack	Thies	Touba	Ziguinchor	Louga
Purchase Price***	66.6	49.0	64.7	58.1	80.0	66.7	57.1	80.0
Resale Price***	78.0	57.6	72.2	64.6	89.5	75.5	67.9	105.0
Gross Margin(fcfa)	11.4	8.6	7.5	6.6	9.5	8.8	10.8	25.0
% of Resale	14.6%	14.9%	10.4%	10.2%	10.6%	11.7%	15.9%	23.8%
Assembly Cost	**	**	**	**	**	**	**	7.2
Transport	3.2	4.1	5.1	3.6	5.2	3.8	5.1	5.1
Storage	0.2	0.3	0.1	0.1	0.3	0.2	0.3	0.1
Handling	1.2	1.4	1.1	1.0	1.4	1.1	1.3	0.7
Interest (15%)	0.2	0.1	0.1	0.1	0.2	0.1	0.3	3.2*
Total Marketing Cost	7.8	5.9	6.4	4.8	7.1	5.2	7.0	16.4*
Net Margin	3.6	2.7	1.1	1.8	2.4	3.6	2.8	8.5
Distance (km)	281	159	71	46	206	134	211	
Storage Time (day)	7	4	5	2	5	3	8	30
Net Margin % of:								
Purchase Price	5.4%	5.5%	1.7%	3.1%	3.0%	5.4%	4.9%	10.6
Resale Price	4.6%	4.7%	1.5%	2.8%	2.7%	4.8%	4.1%	8.1%

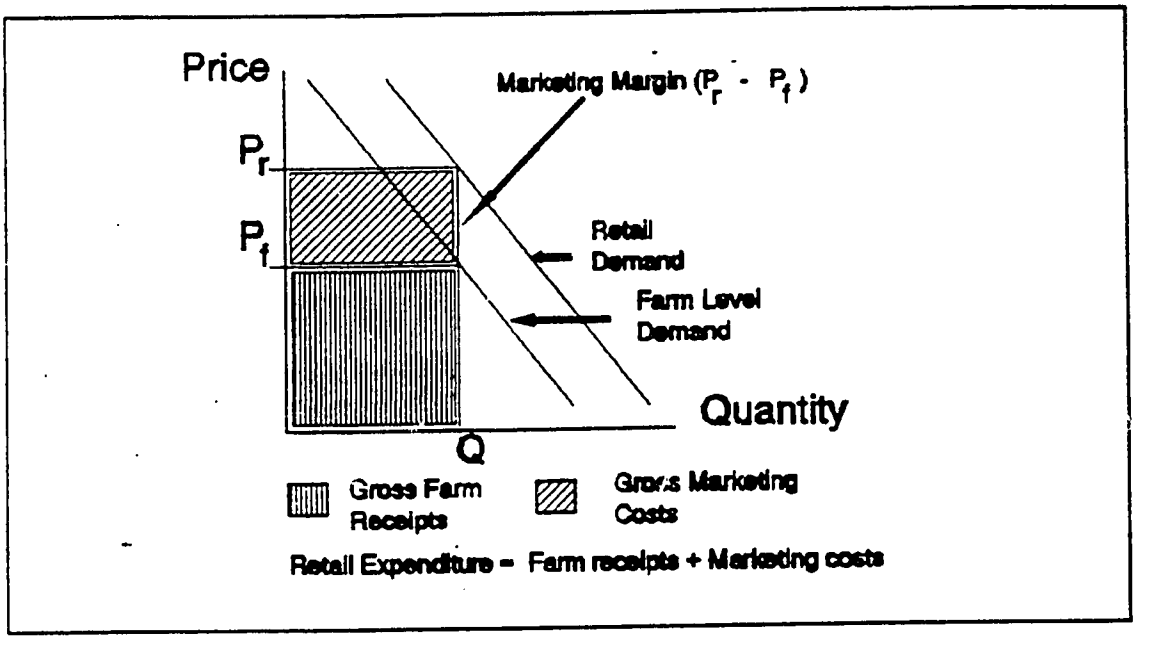
Source: Ouedrago, page 195, Newman, page 27.
* Newman's interest costs include 3 months storage, Ouedrago's interest cost are for one week or less.
** Assembly costs not included. Separately, Ouedrago reports assembly costs of 5 fcfa/kg.
*** Ouedrago's purchase and resale prices were re-constructed from net margin as percent of purchase price and the gross marketing margin.

Elasticity of Price Transmission

The elasticity of price transmission is the percentage change in retail price for each one percent change in farm price. It is derived from the marketing margin and it is a useful way of translating retail (urban) demand to farm level demand. A graphic representation of the retail to farm link is shown in Figure II-1.

Figure II-1

Urban Demand and the Marketing Link to Rural Markets



The definitions for farm level equivalent of the retail direct price elasticity and the retail (urban) direct price elasticities can be manipulated to show:

(F.1) $F_{ii} = E_{ii} \cdot m_i$. Where,

m_i = the elasticity of price transmission, which is the percentage change in the retail price for each one percent change in the farm price.

F_{ii} = farm level equivalent of the retail direct price elasticity (E_{ii}).

E_{ii} = retail (urban) direct price elasticity of demand (Marshalian).

The elasticity of price transmission collapses the portion of consumer expenditures which pays for the time, space, and form services provided by the marketing system into a single parameter, but the actual implementation of the concept can be fairly rich in information,

depending on the theory used to derive the elasticity. It also provides two useful pieces of information: the degree of response of retail prices to changes in farm prices, which is especially relevant when farm prices are controlled or predetermined, and it determines the difference between retail and farm level elasticities. A general form for M, which represents the margin as a combination of fixed costs and a variable component dependent on the retail price is[2]:

(M.1) $M = c + b \cdot P_f + a \cdot P_r$. With $(c, b, a) \geq 0$ and $(b, a) < 1$ and,

. . . $M = P_r - P_f$ is the gross margin per unit of product,

. . . P_r = retail (urban) price,

P_f = farm price (in the same units as the retail price),

c = the "fixed" part of the margin not depending on the farm or the retail price, but it may be composed of other, variable, factors such as distance, time in storage, fuel costs, etc.

b = may be processing, storage, transport losses (percent).

a = the retail price dependent, variable, component.

The function for (M) can be manipulated to derive two forms of the elasticity of price transmission. Each form will give the same estimate for the price transmission elasticity, but each has its own utility, depending on existing pricing policy and the availability of price and marketing cost information. These two forms are shown below as (m.1 and m.2)[3]:

(m.1) $m_i = \left(1 - \frac{c}{(1-a) \cdot P_r}\right)$, so that . . . $\Gamma_{ii} = E_{ii} \cdot \left(1 - \frac{c}{(1-a) \cdot P_r}\right)$, and

[2]George and King (1971, pg 53) discuss several forms of the margin function. A discussion may also be found in Tomek and Robinson (1972, pg 46). More recent research and a formulation which includes a more complete specification of the retail-farm link is Wohlgenant and Haidacher (1989). A review of approaches to modeling retail-farm price spreads may be found in Wohlgenant and Haidacher (1991).

[3]Subject to the theory of this particular margin function, a specific, empirical, implementation which results in negative price transmission elasticities indicates that: (1) there are serious data problems; and/or, (2) there is a market failure of some kind (information); and/or, (3) if the analyst has confidence in the data and the market, then the marketing system is too complicated to be represented by this, relatively, simple function. <u>However, experience has shown that the function does a remarkably good job of representing relatively complex systems.</u> For example, George and King (1971, page 62) developed price transmission elasticities for 30 American farm commodities, with only one negative result, and it was for breakfast cereal - in which the cereal commodity amounts for a very small part of the retail value.

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$$(m.2)\quad m_i = \left(\frac{(1+b)\cdot P_f}{c+(1+b)\cdot P_f}\right), \text{ so that } . \quad F_{ii} = E_{ii}\cdot\left(\frac{(1+b)\cdot P_f}{c+(1+b)\cdot P_f}\right).$$

- Both (m.1) and (m.2) show that if the "fixed" component, c, is zero, then the farm and retail elasticities are the same ($m_i = i$).

- Equation (m.2) shows that m_i cannot be greater than one, so that the farm level demand elasticity must be either equal to or lower than the retail demand elasticity (generally, more inelastic).

- (m.1) is most appropriate when the retail price is fixed (or the focus of the analysis, or if the analyst has little confidence in the farm price observations), but it also demands the most information about the marketing system (values for both a and c).

- (m.2) is most appropriate when the farm price is fixed and the retail price is flexible, or when the analyst is interested in the effects of improvements which reduce physical losses and it requires the least information about marketing costs (essentially only the value of the fixed component, c, because the value of "b" will usually be available or understood as a well established "standard".

The importance of the marketing link (as represented by the equation for the margin), is that the farm level elasticity will normally be less elastic than the retail elasticity (perhaps much less elastic). This produces the classic agricultural income dilemma: a larger marketed surplus may result in a smaller gross farm revenue, even for commodities which are price elastic at the retail level. <u>That is, if net farm income is to improve, then farm productivity becomes an important issue.</u>

The two equations provide a way of estimating the price transmission elasticity when fixed and variable costs are known. The elasticity can also be estimated directly from farm and retail price data, with the retail price as a dependent function of the farm price. Table II-4 contains these estimates for millet, maize and sorghum. These numbers were derived from the monthly farm and retail price data collected by CSA.

The price transmission elasticity is relatively high for millet, but, given that cereal grain demand at the urban level tends to be inelastic, the farm level elasticity of demand for millet to be sold in urban markets will be very low. The evidence is that the elasticity of demand for sorghum and maize will be very much less elastic than it is at the urban level (generally about half as elastic).

A statistical relationship between local cereal and rice prices could not be established so it is difficult to measure how cereal prices might react to changes in the rice price. About the most that can be said is that rice prices provide a ceiling which local cereals (properly transformed to represent a "rice equivalent form") are unlikely to cross. The low demand

elasticity for cereals means that the farm price is potentially very volatile[4]. The State administered rice price probably acts to dampen these price movements.

Table II-4

Farm to Retail Price Transmission Elasticities for Millet, Sorghum and Maize

Retail Price	Percent change in retail price for each one % change in farm price	T-value	R Squared
Millet	0.72	17.1	0.835
Sorghum	0.55	14.8	0.781
Maize	0.56	13.1	0.737
Retail Price	Percent Change for each one % change in retail millet price		
Sorghum	0.76	16.7	0.82
Maize	0.77	16.9	0.82
Regression monthly prices 5/87-7/92			

Source: USAID/Senegal/ANRO

[4]This can be measured by the "price flexibility", which is approximately equal to one over the demand elasticity. If the demand elasticity is -0.5 then the price flexibility is 2.0, indicating that a 10% change in quantity demanded will generate a 20% change in price.

The ISRA/MSU Ziguinchor Studies (1982/83 - 1983/84)

Jolly, Curtis, M., Kamuanga, M., Sall, S., and Posner, J.L,
"Situation Cereliere en Milieu Pausan en Basse Casamance", Etudes et Documents, Vol. 4, No. 13, ISRA/MSU, Dakar, Senegal, 1991.

This is a reprint of a working paper produced under the USAID financed Agricultural Research and Planning and Agricultural Research II projects. The report covers surveys conducted by the Djibelor Research Station during the 1982/83 and 1983/84 seasons. Five zones were defined (see Figure II-2 at the end of this section). Two villages in each zone were selected as representative and 25 concessions were picked at random (from within the two villages in each zone) for a total of 125 concessions. The measurement unit was farms within the concession (autonomous family units). There were an initial 237 "farms", of which 196 were used for the analyses. Summary data are shown in Tables II-5 to II-7. Where possible, data for 1983 was selected for the tables because 1983 was a more "representative" year in terms of rainfall (1984 was not).

Farms in this region were virtually all cereal deficit (Table II-6), most of them by at least 40% of annual requirements. Farmers south of the Casamance River were also structurally deficit in the sense that revenues from farming and non-farm sources were not sufficient to cover the deficit (Table II-6). Only about 40% of the farms held supplies sufficient to cover more than 6 months needs, and only about 5% held supplies greater than annual needs. For social-cultural reasons, very little of the rice produced is marketed, even when there is a surplus, so marketing from the 5% of the farms which were surplus would have been extremely low.

A "marketed surplus-like" function was estimated using farmers' own estimates of the amount (kg) of rice they would have to purchase to cover the cereal deficit (D_r) as the dependent variable and the rice price (plus transportation cost market-to-farm FCFA/kg=P_r) quantity of rice produced (kg/capita= Q_r), quantity of other cereals produced (kg/capita=Q_o), quantity of cereals consumed per day (grams/capita=C_j), and revenue (farm and non-farm/capita=R_t) as independent variables. The quantities produced were converted to consumable equivalents by allowing for storage and processing loses. The function was:

$$\ln(D_r) = \underset{(7.9)}{1.8842} - \underset{(4.6)}{0.00723}\, P_r + [\underset{(0.8)}{0.00154}\, C_j - (\underset{(0.4)}{0.0074}\, Q_r + \underset{(1.3)}{0.0003}\, Q_o)] + 0.00001\, R_t.$$

Numbers in parentheses are the student-T values.

$R^2 = 0.374 \quad F(5,183) = 21.8.$

The amount of variation in rice demand explained by the function (37%) is significantly different from zero (according to the F statistic). The coefficients for rice price, amount of cereals consumed, and income are significantly different from zero. This model might have been improved by combining the production quantities into a single variable, and it is not obvious why demand determining variables (price and income) and demand (quantity consumed) are both in the set of independent variables. While this function is approximately a marketed surplus function, it allows only positive rice purchases (no sales) - because the dependent variable is in

log form. This is a very short-run formulation, and, since farmers are chronically deficit, the "non-negativity" constraint may not be a serious restriction.

Elasticities estimated from the function, and comparisons with other estimates (page II-6), are:

	Elasticity with Respect To:	
	Rice Price	Farm Income
This study	-0.886	0.1
Ross (Casamance)	-0.85	
Jabara(Senegal)	-0.745	

Table II-5

Farms in Ziguinchor (1983):
Farm Size, Family Size, Active Workers, Food Consuming Units

Zone / Village	Area Farmed ha	Family Size people	Active Workers people	Food Consuming Units people	Area Farmed/ Person ha	Area Farmed/ Active ha
Oussouye	1.77					
Boukitingo	1.42	5.5	3.4	3.6	0.26	0.42
Loudia-Ouolof	1.80	7.5	4.4	5.4	0.24	0.41
Blouf	2.00					
Mahamouda	2.00	9.7	5.6	7.4	0.21	0.36
Tendimane	1.54	7.4	4.6	5.5	0.21	0.33
Niaguis	2.98					
Maoua	3.30	11.1	6.5	9.9	0.30	0.51
Boulom	1.88	8.1	5.0	6.9	0.23	0.38
Sindian-Kalounayes	5.34					
Boulandor	5.01	11.0	6.3	8.3	0.46	0.80
Medieg	4.01	10.7	6.0	7.1	0.37	0.67
Fogny-Combo	4.12					
Bandjikaki	3.20	9.1	5.0	7.1	0.35	0.64
Suel	4.41	7.5	4.4	6.0	0.59	1.00
Average	2.86	8.7	5.1		0.32	0.55

Food consuming units (FCU): adults=1, < 5 years=0.25, 5-14 years=0.5.
Includes allowance for migrants.

Table II-6

Ziguinchor Cereal Production (1983): Total, Equivalent Consumption Units, Food Consuming Units (FCU), and Deficit/FCU.

Zone / Village	Cereal Produced				Cereal Produced (ECU) kg	Rice as Percent Total ECU	Cereal Produced (ECU/FCU) (kg/year)	Cereal Surplus/ Deficit (kg/FCU)	Percent Surplus / Deficit (%)
	Paddy Rice kg	Maize kg	Millet kg	Sorghum kg					
Oussouye									
Boukitino	594.2	181.0	--	--	540.1	71.5%	150.0	-50.0	-25.0%
Loudia-Ouolof	619.2	11.9	--	--	412.6	97.5%	76.4	-123.6	-61.8%
Blouf									
Mahamouda	156.5	71.1	--	--	162.2	62.7%	21.9	-178.1	-89.0%
Tendimane	545.2		17.8	--	369.5	95.9%	67.2	-132.8	-66.4%
Niaguis									
Maoua	772.4	375.5	94.3	--	901.4	55.7%	91.0	-109.0	-54.5%
Boulom	1482.2	97.5	--	--	1046.3	92.1%	151.6	-48.4	-24.2%
Sindian-Kalounayes									
Boulandor	1019.0	329.0	49.9	19.8	1001.2	66.2%	120.6	-79.4	-39.7%
Medieg	1432.0	315.7	618.7	85.8	1798.0	51.8%	253.2	53.2	26.6%
Fogny-Combo									
Bandjikaki	1798.6	105.4	--	--	1258.7	92.9%	177.3	-22.7	-11.4%
Suel	na	na	na	na	na	na	na		

Surplus/deficit calculated using 200 kg/FCU

Table II-7

Ziguinchor (1982-84): Cereals Deficit and Food Security vs Self-Sufficiency

Item	Farm Location with respect to Casamance River	
	South	North
Cereal Production/Farm (kg)	341.1	1248.8
Cereal Deficit/Farm (kg)	-824.2	-243.2
Groundnut Production/Farm (kg)	476	1620
Value Groundnuts (@ 50 FCFA/kg)	23,800	99,000
Equivalent in rice (@120 FCFA/kg)	198	675
Remaining Deficit (kg/Farm)	-626	+432
Non-Farm Revenue (FCFA/Farm)	57,500	
Equivalent rice (kg)	488.3	
Remaining Deficit (kg/Farm)	-336	

Source: Jolly, et al, Table 7, page 24.

Posner, J.L, Kamuanga, M., and Sall, S,
"Les Systemes de Production en Basse Casamance et les Strategies Paysannes Face au Deficit Pluviometrique", ISRA/MSU, Etude et Documents, Vol 4, No.11, 1991.

This publication reports surveys collected in 1982/83 through 1984/85 in what is now the region of Ziguinchor. It is a general discussion of results of the farm surveys described in the preceding review.

Table II-8

Farm Characteristics: Ziguinchor 1982-84 Averages

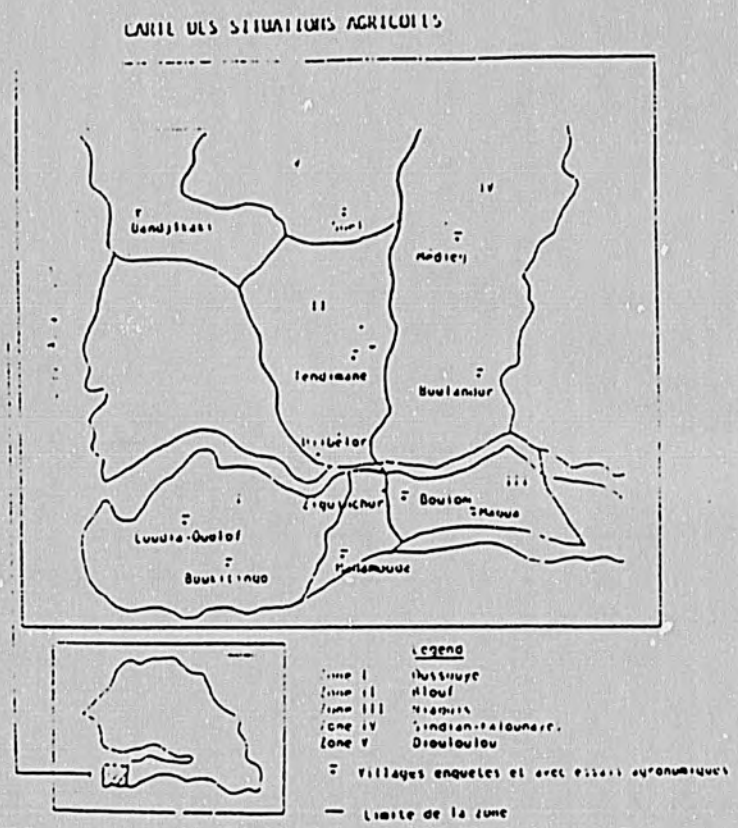
Item	Units	Northern Farms	Southern Farms
Farm Size	Hectares	6.21	1.55
Active Workers/Farm	People	7.2	4.1
Workers/hectare	People	0.863	0.378
Percent of land "upland"	%	86	59
% labor time non-rice	%	65	46
% labor time on rice	%	35	54
Yields			
Maize	kg/ha	838	221
Millet	kg/ha	539	--
Rice	kg/ha	1511	888
Groundnuts	kg/ha	954	621
% Revenue Ag.	%	80	41
% revenue non-Ag.	%	20	59

Source: Posner, et. al 1991, page 24. Two "representative" villages from north of the Casamance River (upland) and two from south of the River (lowland).

Posner, et al, Page 31, 2/3 rice fields abandoned because of salt intrusion and/or water shortages.

Figure II-2

Study Zones Used for The ISRA/MSU Ziguinchor Farm Surveys



NOTES

Zone I: Organisation sociale du travail type Diola, absence de traction bovine, et predominance du riz repique

Zone II: Meme type d organisation que la Zone I, mais avec cultures de plateau et semis direct du riz relativement importants.

Zone III: Organisation sociale du travail type Mandingue à l'est, mais entrecoupe au centre et à l'ouest par des villages Diola. Traction bovine peu repandue, et riz de semis direct relativement important

Zone IV: Organisation sociale du travail type Mandingue, traction bovine assez développée, cultures de plateau tres importantes.

Zone V: Organisation sociale du travail type Diola, traction bovine developpee et riziculture aquatique relativement importantes.

Socio-Economic Studies by the Kolda Rural Forestry Project (1989)[5]

This is a Canadian-financed Project located in the Department of Kolda/Region of Kolda. The Project area covers about 12% of the Department surrounding the city of Kolda (See Map, Figure II-3 at the end of this section). It encompasses the classified forests of Bakor (18,151 ha) and Mahon (3,730 ha) and the adjacent areas for a total surface area of approximately 100,000 ha. The Project area includes parts of five Rural Communities with about 159 villages and a total population of 62,000 people (including 35,000 in Kolda and 27,000 "rural"), or, about 10% of the total population in the Region of Kolda (606,790 in 1988). The population in the Region grew at 2.9%/year between 1976 and 1988 (5.3% urban and 2.7% rural). In 1988, 10.4% of the population was urban (vs 39% national average). An estimated 64% of the population is "economically active". The ethnic composition is largely peuhl (49%) and mandingue (21%), the remainder are about evenly distributed between other groups (wolof, serere, diola, etc).

The survey:

The information reported here was collected between July and mid-October, 1989. Two types of surveys were conducted: a general survey and a socio-economic survey. For the general survey, 52 randomly selected villages (33% of the 159 villages in the Project area). All 7 quartiers in Kolda were visited, but only a few people were interviewed (number unknown). Approximately 30% of the rural village families were selected (randomly). One person from each family was interviewed (total of 269 interviews)[6]. Each family had an average of 10 people, 99% were Muslim. The separate socio-economic survey was of five "representative" families, one from each of the five Rural Communities in the Project area.

Principle Economic Activities:

Eighty-four percent (255) of the population surveyed for the "general survey" cited "agriculture" as their principal activity, with the remainder evenly distributed between vegetable gardening, commerce, livestock, hunting, etc. Vegetable gardening (39%) and commerce (28%) were primary secondary activities of the 90 people who indicated a secondary activity.

Womens' economic activities were even more agriculturally oriented than the general population: 90% were engaged primarily in agriculture; 68% in vegetable production; and 19% in exploiting the forest. Interestingly, 33% of the rural women were engaged in commerce

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[5]See Nc Neil et Associés, 1991.

[6]On the basis of this information, conclude that there were approximately 2,700 "rural" families in the Project area: 269 families represent 30% of the families in 33% of the villages or (269/0.3/0.33) = 2,718 families in the area.

(likely vegetable and forest product sales) and 28% of the Kolda women engaged in commerce (33% in agriculture and 33% in vegetable production).

Labor Distribution:

Women provided 97% of the labor for lowland rice production (93% for upland rice), while men provided 92% of the labor for millet production. Labor for the main cash crops was about evenly split (groundnuts 58% men and 42% women, cotton 57% men and 43% women).

Most women (73%) spent between one and two hours per day carrying water, the remaining 27% spent more than two hours per day. Women and children were also the primary wood collectors; accounting for 73% of the wood-collecting effort. This is also a time consuming activity: 45% collected wood one or two times per day and 65% spent one or two hours at this activity (35% spent 3 hours or more).

Food Self-Sufficiency and Commodity Marketing:

According to the results from the "socio-economic survey", both rural and urban families in the Project area purchase considerable amounts of cereal grains, especially millet and rice. Since the sample used to collect these data was extremely small (5 families), the information is only indicative. However, as shown in Table II-9, on the basis of a family size of 10 persons and an annual standard of 200 kg of cereal per person, rural families appear to be purchasing about 25% of their cereal needs and urban families about 50%. Overall, 82% of the families interviewed were not food-self sufficient.

Table II-9

Average Quantities of Cereals Purchased by Families in the City of Kolda and by Rural Families (1989)

Crop	Rural Families (kg)	City of Kolda (kg)
Millet	196	354
Maize	36	121
Rice	164	550
Sorghum	7	-
Total	403	1025

Source: Table 34, page 56.

The report indicates that rural families must purchase rice and millet for about two months of the year, and that families in the City of Kolda must purchase rice during four months of the year. That is, although urban, families in the City of Kolda engage in a considerable amount of agriculture.

As with most other parts of the Nation, only a small part of cereal production in this region is marketed (Table II-10): 2-3% of cereals produced are marketed; 33% of the vegetables produced are marketed; about 20% of manioc and sweet potato production is marketed; 67% of groundnut production and 97% of cotton production are marketed.

Table II-10

Percentage Distribution of Production to Home Consumption, Marketing and Held for Seed: Kolda, 1989.

Commodity	Home Consumption (%)	Marketed (%)	Seed Reserve (%)
Millet	86	3	11
Maize	87	3	10
Lowland Rice	88	1	11
Upland Rice	89	1	10
Sorghum	87	2	11
Fonio	91	-	9
Niebe	82	11	7
Cotton	3	97	-
Groundnuts	22	67	11
Sweet Potato	77	22	1
Manioc	78	21	1
Vegetables	65	33	2

Source: Mc Neil (1), Table 33.

Income generated from marketed farm products is dominated by groundnuts and cotton (Table II-11): groundnuts account for about 30% of the total of 247,000 fcfa per family. Cotton is the second single most important source of gross revenue, but its net value is much less because purchased inputs account for a large part of the total value. In fact, once the cost of production is included, the value of marketed vegetables probably outweighs cotton as a source of net income. Livestock products, especially milk, are also important (about 10% of the total) and probably also outweighs cotton as an income generating activity.

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Womens' incomes are low, reflecting limited access to land, other inputs and their traditional concentration on rice production, which is seldom marketed: 50% of the rural women in the area had incomes of less than 5,000 fcfa in 1989 (14% of the women in Kolda)[7].

Table II-11

Region of Kolda, Department of Kolda: Production, Purchases, Sales, Home Use and Revenue, Major Agricultural and Livestock Commodities
(Representative Farm in 1989 with 4 Hectares and 10 people)

Crop	Unit	Production	Bought	Sold	Home Use	Price (fcfa)	Cash 000 fcfa
Rice	kg	340	164		504		
Millet	kg	460	196		656		
Sorghum	kg	940	7		947		
Maize	kg	925	36	120	841	50	6.000
Fonio	kg	20			20		
Manioc	kg	150		40	110	75	3.000
Sweet Potato	kg	12			12		
Groundnuts	kg	1410		1015	395	70	71.050
Cotton	kg	485		485	0	100	48.500
Sub-Total Field Crops							128.550
Sorrel	kg	40		9	31	75	0.675
Okra	kg	105		38	67	135	5.130
Egg Plant	kg	92		42	50	90	3.780
Tomato	kg	92		26	66	90	2.340
Onions	kg	6		3	3	250	0.750
Peppers	kg	16		11	5	400	4.400
Cabbage	head	205		200	5	70	14.000
Sub-Total Vegetables							31.075
Mango	kg	735		90	645	30	2.700
Orange	kg	36		18	18	50	0.900
Sub-Total Fruits							3.600
Cattle	head	38		1		36500	36.500
Goats	head	5					
Sheep	head	3					
Poultry	head	34		4		800	3.200
Milk	ltr	1700		450	1,250	100	45.000
Sub-Total Livestock							84.700
Total							247.925

Source: Mc Neil (1), Table 32, page 57.

[7] Mc Neil(1), page 182.

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The Importance of Forest Products:

Just over 75% of the total surface area of the Project's area of intervention is classified as Productive Forest (78% classified as "forest" with 2.6% classed "unproductive"), so it is no surprise that forest products are an important source of both home consumed and marketed products in this region. The region also has 52,500 ha of protected forest land, 21,800 ha of classified forest land, and 21,100 ha of non-forest land[8].

Although the survey results reported by the Project are not provided in such a way as to show the importance of forest products for an "average" family, it does provide information about the importance of marketed forest products per rural family engaged in marketing such products. The information provided by the report has been recalculated to estimate an "average" value per family (Table II-12).

Table II-12

Forest Products Sold by Families in the Kolda Area: Number of Families, Percent of Families, Revenue per Family Actively Selling and Weighted Average Revenue (1989)

Forest Product	Number of Active Families (number)	Percent of All Families (%)	Revenue per Active Family (000 fcfa)	Revenue per "Average" Family (000 fcfa)
Wood for construction	180	6.6	21.000	1.386
Fuelwood	120	4.4	17.500	0.770
Consumable Products	540	20.0	16.250	3.250
Livestock Feed	0	0	0	0.000
Medical Products	60	2.2	14.600	0.321
Miscellaneous	300	11.1	17.500	1.943
Hunting	210	7.7	31.000	2.387
Sacred and "Magic"	30	1.1	20.000	0.220
Total	2700	100		10.277

Source: Based on data in Mc Neil (1), Table 60, page 140.

Consumable forest products were sold by 20% of the families, for an average revenue of 16 thousand fcfa for those families active in collecting and selling these products. The largest revenue (for families who were actively engaged in the sale of forest products) was for trapping and hunting at 31 thousand fcfa/family. On average (each category weighted by the percentage

[8]This information is from the Project report of June, 1991, "Connaissance Generale du Milieu Physique", Agrnce Canadienne de Developpement International. This report also contains tree species, animal carrying capacity and soil analyses.

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of all families in the area) about 10,300 fcfa was earned per family in the region. This does not include the considerable value of home consumed forest products. An indication of the relative importance of each category of products in home consumption and for revenue generation is shown in Table II-13. The table shows the percentage of the 1,170 families using the two classified forests in the Project area who used products at home vs the percentage who sold products from the forest. In general, 80% of the families used products from the forests for home consumption and at most about 13 percent sold products from the forests.

Table II-13

Products Used from Classified Forests for Home Consumption and For Sale: Region of Kolda, Families Near Classified Forests, (1989)

Forest Product	Home Consumed		Sold	
	Number of Families (Families)	Percent of All Families (%)	Number of Families (Families)	Percent of All Families (%)
Wood for construction	840	71.8	60	5.1
Fuelwood	690	59.0	21	1.8
Consumable Products	870	74.4	150	12.8
Livestock Feed	630	53.8	0	0
Medical Products	720	61.5	30	2.6
Miscellaneous	960	82.1	90	7.7
Hunting	270	23.1	30	2.6
Sacred and "Magic"	90	7.7	0	0
Total	1170	80.0		

Source: Based on data in Table 62, page 157.

There is no information on which to adequately place a value on home consumed forest products, but for fuelwood alone (estimated at 2.3 metric tons per year per family), the total will be large. Even if valued at 30 fcfa/kg fuelwood alone would have a value of 69,000 fcfa/family per year!

Resources and Resource Management:

The forest cover in the Kolda area has been subject to many years of "exploitations" either formally for charcoal production or informally for local uses. One of the major problems has been the annual brush fires which remove large amounts of vegetative cover each year. Photo interpretation of cleared (non-forest) land between 1970 and 1989 indicates that deforestation has progressed at 2.9% per year, just slightly above the rural population growth

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rate of 2.7%[9]. According to a soil and forest inventory in the project area, the number trees on farmers' land varies between 7.7 and 15.0 per hectare (depending on location - the lower number is for the southern part of the project area, away from the classified forests and the higher number is for farms near the classified forests). Sustainable wood production from these trees is between 1.0 and 1.5 cubic meters per tree or between 8 and 18 cubic meters per hectare[10]. Given an average farm size of 4 hectares of cultivated land and 3.1 hectares of fallow land, this translates into about 70 m^3 per farm (family). Rural families are estimated to use about 13.5 m^3 per year for fuelwood.

Farmers' concerns about their environment are concentrated on loss of soil productivity and of productive land: 45% identify erosion as a problem; 78% identify soil fatigue; 22% mention laterization and soil compaction; and 10% did not believe they had a problem[11]. As with other parts of the Nation, evidence of increasing pressure on the land is given by a shortening of the fallow period allowed land. While a fallow of up to 8 years is the norm for full restoration, 58% fallow land less than 4 years and only 15% fallow land more than 5 years[12]. Farmers' concerns about soil productivity are reflected by considerable use of both plant and animal residue on fields: 65% applied manure; 44% returned crop residue to the fields; and 52% used chemical fertilizer (almost exclusively for cotton production). The high number of farmers using manure reflects the characteristic puehl culture, in which livestock are very important. The high rate of chemical fertilizer use reflects the presence SODEFITEX and the availability of inputs (including credit) for cotton production.

Land tenure follows the traditional peuhl system. Men generally have rights to land, which they may loan to their wife(s). Land is generally inherited or assigned by a village chief (including women) and it may be purchased. Women may also purchase land (usually as part of a group), but their fields tend to be small (around 0.5 hectares).

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[9] Mc Neil(1), page 44.

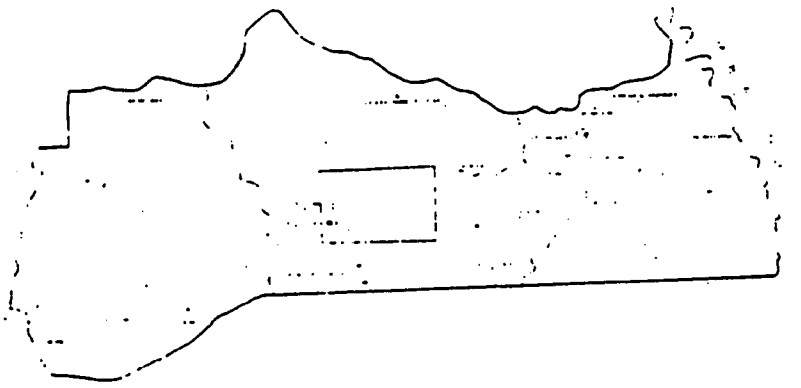
[10] Mc Neil(2), page 79.

[11] Nc Neil(1), page 74.

[12] Nc Neil(1), page 74.

Figure II-3

The Kolda Rural Forestry Project Area



Studies on The Gambia Relevant to Senegal

von Braun, J., Putz, D., Webb, P.,
"Irrigation Technology and Commercialization of Rice in the Gambia: Effects on Income and Nutrition", IFPRI Research Report 75, IFPRI, Washington, D.C., August 1989.

This is a report on research conducted by IFPRI in The Gambia in 1985/86. The survey area was on the south bank of the Upper Gambia River around the Jahally-Pacharr Irrigation Project (See Figure II-4 at the end of this section). Its general purpose was to access the impact of the Irrigation Project. The sample is taken from 10 randomly selected villages in the study area and within that, 168 randomly selected compounds composed of 214 separate farm units (independent decision-making and consuming). A more complete description of the sample is included in the review of Putz's research (which follows) using this same data.

Analyses

Separate analyses are presented for farms divided into upland and lowland locations, for female and male farmers, for private fields, and for communal fields (a characteristic of the Mandinka system). There is a fairly extensive analysis of nutritional status (especially for women and children). Most of the analyses deal with the impact of the Irrigation Project on various classes of individuals. Only that part felt to be most useful and most appropriate for Senegal is included in this review. It is interesting, however, that the Domestic Resource Costs calculated for irrigated rice was 6.55 (for 100% broken-rice), quite similar to the DRC of 4-5 for irrigated rice in the Senegal River Valley.

Relevance to Senegal

The study's location with respect to both Ziguinchor and Kolda, and similar ecologic and ethnic conditions makes its results at least partially relevant to those regions of Senegal. This is especially true of the upland farms - where 50% of the compounds were Wolof and Fula are the dominant ethnic groups - which are reasonably similar to Kolda. The lowland farms are more characteristic of Ziguinchor north of the Casamance River, where Mandinka and Fula are the dominant ethnic groups.

Sample Characteristics

Some sample statistics on yields and labor and land use are shown in Table II-14. The report provides no information about farm size, only on the percentage distribution of land to different crops. On this basis, upland farms' most important crops are (48%) groundnuts and (33%) early millet and lowland farms' most important crops are (27%) groundnuts, (18%) swamp rice and (16%) early millet and (10%) maize. Groundnuts account for the majority of crop revenue (66% of the crop is sold), followed by swamp rice (21 % of crop sold). Only small amounts (1% to 2% of production) of millet, maize and sorghum were sold.

Table II-14

Sample: Yields, Labor per Hectare and Land Use, 1985 Wet Season

Land Use	Percent of Product Sold	Yield Kg per Hectare	Labor Days Per Hectare	Share of Land (%)	
				Upland Farms	Lowland Farms
In Project, Fully or Partially Water Controlled	8.0-12.0	6,552	349	4.6	17.0
Old Irrigation Schemes	2.1	2,862	377	--	--
Swamp Rice	20.7	1,274	217	1.0	18.0
Early Millet	0.9	855	95	32.6	16.0
Late Millet	--	760	84	0.7	2.0
Sorghum	0.9	197	87	3.9	5.0
Maize	1.8	402	90	7.0	10.0
Groundnuts	65.7	1,244	141	47.6	27.0
Cotton			132	2.6	5.0
Total				100.0	100.0

Source: Production sold is for cash (excludes gifts, loan repayment, labor, etc.), Table 23, page 57; Yields, Table 11, page 40 (yields for water controlled are for project fields); Labor, Table 21, page 41 (labor for water controlled is for project fields); Land Shares, Table 1, page 20.

Analyses

The sample data from 1985 were used to estimate production functions for cereals, groundnuts, and rice (Table 19, page 50), and to estimate labor allocation functions. A more complete production function analysis is included in the research reported by Putz, a summary of which follows, so the results from this study's analysis are not reviewed here.[13]

The survey data were also used to estimate a "marketed surplus" function. This function measures sales (in milled equivalent), so it is really a marketed supply function (Table 26, page 61). Independent variables were cereal production (in milled equivalent), rice percent of total production (wet season), rice price (natural log), distance to market, income, and family size. Only the coefficients for rice price, total production, rice share and distance were significantly different from zero. The related elasticities were:

[13]The results of this analysis show some fairly strong relationships between fertilizer, labor and land inputs (separately) but the model is not constructed so as to detect substitution rates, so its utility for going to he next step - supply functions - is diminished. In addition, variable means are not given so the elasticities cannot be calculated. Similarly for estimates of labor allocation between crops. The analysis was for allocation between irrigated rice and other crops, not between crops, so the results are not especially applicable to Senegal.

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Elasticity of Marketed Cereals with respect to:

Rice price	2.90
Cereal Production	0.84
Rice Share	1.70
Distance	-13.0% for each kilom.

There elasticities exhibit two outstanding features: a very strong "cost of transportation" impact on marketings. suggest that the rice-price elasticity be used with caution. The elas. fixed total production and with rice as a constant percentage of somewhat surprising that the price elasticity is so high. It is possible simple to adequately capture the dynamics of cereals marketing. For e. obviously not independent of quantity marketed.

This st consumption elasticity wi about the upland fa consum season and r

Table II-15

Gambia 1985/86 Budget Shares for Lowland and Upland Farm Families
(Own-produced and purchased food and non-food items, percent of total)

Expenditure Item	Lowland Villages		Upland Villages	
	Wet Season	Dry Season	Wet Season	Dry Season
Common Food	52.9	54.8	61.4	55.1
Rice	49.3	43.8	38.1	19.4
Millet/Sorghum	1.3	12.9	13.5	34.5
Maize	0.6	0.7	3.5	2.8
Groundnuts	4.2	6.7	10.2	18.0
Sauce Ingredients	10.1	10.3	6.5	8.4
Vegetables	7.9	4.8	9.4	3.2
Oil	4.8	4.0	2.9	2.2
Fish	6.0	5.7	3.2	4.3
Meat	4.9	4.5	5.0	4.4
Milk	4.0	1.1	4.2	0.5
Sugar	5.2	4.7	3.1	1.9
Other	2.0	0.9	0.4	0.5
Snack Food	9.0	11.2	6.8	11.2
Non-food	20.0	17.4	16.3	16.0
Semi-durable	18.2	16.7	15.5	17.7

Source: Table 32, page 71.

This study also contains a considerable amount of information about consumption and consumption patterns. An analysis of this expenditure data indicated that the food expenditure elasticity with respect to income is 0.9 (page 72). This is compared to other studies, which about the same food expenditure elasticity. In all cases (lowland vs upland farms), except for upland farms during the dry season, rice accounted for the largest share of the total value of consumption (i.e. home produced and purchased food). There was a difference between wet season and dry season shares, especially between the lowland and upland farms and between rice and millet in the dry and wet seasons (Table II-15).

Putz, Detlev

"Agricultural Supply Response in the Gambia: a Sectoral, Household, and Intra-household Analysis", Dissertation, Rheinischen Friedrich-Wilhelms-Universitat, Bonn, Germany, October 1991.

Data

Data for this study were collected using a stratified random sample of 200 households (1000-1200 individual interviews) in 18 villages clustered around a multi-million dollar irrigation project in The Gambia's McCarthy Island Division. An additional 2 villages (about 10% of the sample) from outside the development area were also included. Surveys were conducted during the August-October 1985 rainy season and during the January-March 1986 dry season. A follow-up survey was conducted between November 1987 and May 1988. The sample for the follow-up survey was extended by 3 villages (60 additional households)[14]. Data were collected from individuals and covered both agricultural production and income/expenditure items. The agricultural data (production, inputs, output use) were collected at the field level. Consumption data were collected using a combination of day-to-day, weekly and longer recall questionnaires. Expenditure data for large expenditures, non-farm income, and remittance items were collected seasonally (by recall). A weekly survey was used to collect expenditure data for snacks and frequent, non-food, purchases. All data were then aggregated to the "family" (or sinkiro which is the sub-group within the compound which normally eats together). The analysis used the observations from the 191 "families" who were included in both surveys. The analysis is generally divided into lowland (access to irrigated and swamp rice land) and upland farms (rainfed agriculture, including some rainfed rice). A separate analysis was also done for farm sizes, women, and by type of farming organization (i.e communal fields, individual fields, etc).

Sample Population Characteristics

Generally, farming generates 75% of income on farms which average 4.16 hectares with a work force of 4.71 persons. Most of the land is mono-cropped (as opposed to inter-cropping). The average number of people per compound was 13.7 and about 20% of the compounds had more than one of the "family" units.

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[14]There is no indication as to whether or not the new villages were inside or outside the irrigation development area.

There was a considerable difference in crop mixes between upland and lowland farms (Table II-16). Groundnuts accounted for 60 percent of production on the upland farms and was about 30 percent of total production for lowland farms. By contrast, rice accounted for about 60 percent of production on lowland farms, but was only 9 percent of production for the upland farms. The crop-mix are reflected in differences in income and sources of income. Nearly 71 percent of groundnuts were marketed, whereas only 11 percent of rice was marketed, so income for upland farms was 45% higher than for lowland farms. It is also notable that, overall, only 16 percent of coarse grain production was "marketed", with only three percent was marketed for cash.

Table II-16

Farm Production Characteristics for Gambia: Lowland and Upland Farmers

Item	Total	Ground-nuts	Coarse Grains	All Rice	Swamp Rice	Irrigated Rice
Production/farm (% of total tons produced)						
Lowland	4.5 t	31	10	59		
Upland	4.6 t	60	31	9		
All Villages	3.4 t	48	22	30		
All Villages: Yield and person labor day/hectare						
Yield (ton/ha)		1.22	0.69		1.37	4.7
Labor (days/ha)		133	83		203	321
Production Shares (% total production)						
Marou (men)	55	24	87	81		
Women	25	23	2	45		
Sold for Cash	38	71	3	11		
Total Marketed	52	76	16	40		

Source: Putz (1991)

Analysis: Importance of Factor Inputs

Putz used unrestricted Cobb-Douglas production functions to investigate the relative importance of factors of production; labor (labor days), fixed capital (value in constant Dalasi of equipment and draft animals), fertilizer (value in constant Delasi) and land (hectares). The output variable is total value of production at mean 1985/87 prices. He used two formulations: one including land and one excluding land. The formulation which includes land treats it as a limiting (fixed) factor, while the formulation excluding land treats it as a non-limiting (freely available) factor. This analysis generated aggregate production elasticities (percentage change in production for each one percent change in the quantity of factor input). See Table II-17.

The results show all elasticities to be positive and no strong evidence that returns to scale are different from one (constant), so the conditions necessary for this functional form to adequately represent a production technology are not violated[15]. Under the assumption of perfect competition, so prices are exogenous, and assuming profit maximization, the production elasticities are equal to factor shares of total cost (revenue) and can, in this sense, be interpreted as the relative importance of the input.

Table II-17

Aggregate Agricultural Production Elasticities for The Gambia

Input	Production Elasticities	
	Including Land	Excluding Land
All Villages		
Labor	.61	.81
Fixed Capital	.04	.09
Fertilizer	.07	.08
Land	.30	--
Returns to Scale (sum above)	1.02	.98
Upland Villages		
Labor	.42	.73
Fixed Capital	.15	.18
Fertilizer	.06	.07
Land	.42	--
Returns to Scale (sum above)	1.05	.98

Source: Putz 1991, page 40.

Given all of this, it is not surprising that when land is included as a constraining fixed input, then output is, by far, more responsive to changes in labor and land than it is to fertilizer and equipment inputs or that, when land is not considered a constraining input, labor input remains the dominant factor. The implications are clearly that land and labor productivity are central, physical, issues. However, this particular set of information should not be used to infer

[15]The assumptions are generally that all inputs are necessary for production, that marginal productivity of each factor is ≥ 0 but decreasing and that the isoquants have the proper curvature. For a Cobb-Douglas function, this means that the production elasticities are between (but not including) zero and one, and that they sum to no more than one. By its nature, this function also has an elasticity of substitution exactly equal to one.

factor substitutability between inputs such as land and labor, because the functional form forces the elasticity of substitution to equal one[16,17].

Despite its weaknesses this analysis still provides important and useful information. For example, the large share of fixed factors in production (land and labor) suggests that the short-run price elasticity of supply will be low . Taking fertilizer as the only "variable" factor input in the upland farms equation, this would be very low, at 0.064 = (0.06/(1-0.06). If "Fixed Capital" is also considered a variable input the supply elasticity would increase to 0.27 [(0.15+0.06)/(1-0.15-0.06)]. If there is an active farm labor market, so labor also becomes a variable input, the short-run supply response increases to 1.70[18].

Analysis: Direct Estimates of Supply Elasticities and Cross-Price Responses

Putz obtained direct and indirect estimates of own-price and cross-rice supply elasticities from three models: direct and indirect estimates from the cross-sectional data (separately for all villages and for upland villages), and direct estimates from the national time series data (period was 1974-1987).

He estimated a linear, single-equation, supply function for each crop (groundnuts, coarse grains and rice), as well as simultaneous estimation of a profit function and the three product supply functions using the cross-sectional data . He estimated a separate supply function for each of the three commodities for the "national" model. Dependent variables were a measure of "expected" profit/fertilizer price for the profit function and quantity produced for the "supply" equations. Independent variables for the cross-sectional supply models were "expected" prices/fertilizer price, "expected" costs/fertilizer price, the size of the labor force, capital stock (machines and draft animals), rice land owned, and an environmental yield variable (average yields). Independent variables for the profit model did not include the "environmental" variable. Expected costs and prices were obtained from equivalent values lagged one year.

For the analysis of the "national" models he used per capita (rural) production as the dependent variable and for independent variables the ratio of the expected price to a weighted expected average price of competing commodities, several rainfall variables and irrigated rice area as a "technology" variable were also included.

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[16]There are also econometric issues because this "model" introduces heteroskedasticity, multi-collinearity, and a simultaneous equations problem, so the parameter estimates will be biased (See any text which deals with production function estimation).

[17]It would have been interesting to see the results under different formulations, particularly the constrained estimates.

[18]Since the function has constant and unitary returns to scale, the supply elasticity becomes infinite when all factors are variable.

Table II-18

Supply Elasticities for Groundnuts, Coarse Grain and Rice: The Gambia (1984/87)

Elasticity of the Indicated Crop with Respect to the Indicated Farm Price	National Model (1975-1987)	Cross-section (1984/87)	
		All Villages	Upland Villages
Groundnuts			
Groundnuts	0.59	0.53	0.70
Coarse Grains	-0.47	-0.27	-0.36
Rice	-0.18	-0.38	-0.40
Coarse Grains			
Groundnuts	-0.51	-0.28	-0.28
Coarse Grains	0.57	0.44	0.43
Rice	-0.12	-0.21	-0.21
Rice			
Groundnuts	-0.68	-0.51	-0.06^
Coarse Grains	0.22	-0.30	-0.03^
Rice	1.00	0.99	0.78

^Not significant at the 15% level. All other coefficients significant at least the 15% level.
Source: Table 5.1, page 65.

The statistical results from the "direct" functions were generally good, with expected signs statistically significant coefficients. The coefficients obtained for the "indirect" functions (the profit function, which is statistically and theoretically preferable) were generally not significantly different from zero. I have two questions about this: he appears to have data errors in his tables because he has the same mean production of the three crops for lowland and upland farms (and out of order) it is not sure if this is a data problem of a typing problem, but the elasticities were probably calculated from faulty data; and, deflating profit by the fertilizer price could have caused a violation of necessary conditions.

Since the own-price and cross-price elasticities from the profit function analysis do not appear to be usable, only the results from the "direct" (linear) models, calculated at sample means, are shown in Table II-18[19].

[19]The profit function, if it meets certain criteria, provides a convenient and statistically appropriate way to derive supply and input demand functions. The partial derivative of this profit function with respect to the farm price of a commodity is the supply function for that commodity. If the partial derivative is taken with respect to the price for an input then the resulting function is a factor (input) demand function. If the derivative is taken with respect to a fixed input such as land, then the resulting function is an expression showing the implicit value of one more unit of the fixed input (a shadow price).

The general form for Putz's profit function was linear with interaction terms for each variable:

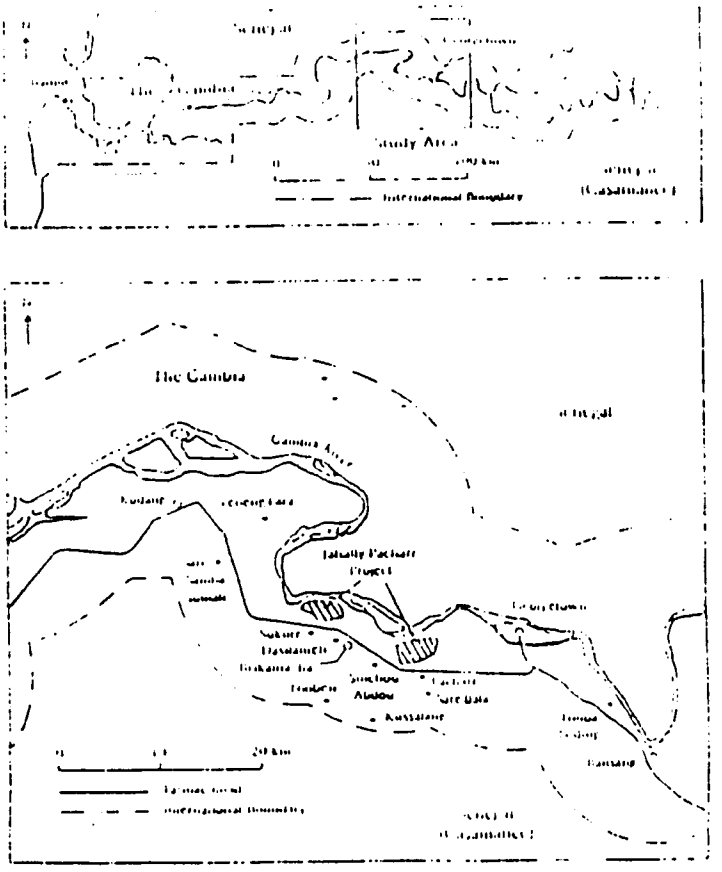
$$\pi = \text{CONST} + \Sigma_i \alpha_i P_i + \Sigma_i \beta_{ii} P_i^2 + \Sigma_i \Sigma_{j>i} \beta_{ij} P_i \cdot P_j + \Sigma_i \Sigma_k \Gamma_{ik} P_i \cdot Z_k$$

$$+ \Sigma_k \Phi_{kk} Z_k^2 + \Sigma_k \Sigma_{m>k} \Phi_{km} Z_k \cdot Z_m. \text{ Where,}$$

(i,j) = 1 to p (number of commodities), (m,k) = 1 to z (number of inputs, etc),

Figure II-4

The Gambia Study Zone



α_i, β_{ij}, Γ_{ik} and Φ_{im} are parameters to be estimated,
P_i or P_j refer to commodity prices,
Z_k or Z_m refer to input prices, quantities or other variables, and
π is profit.

The partial derivative of π with respect to P_i ($\delta\pi/\delta P_i$) is the supply function for commodity (Q_i):

$$Q_i = \delta\pi/\delta P_i = \alpha_i + \Sigma_j\beta_{ij} \cdot P_j + \Sigma_k\Gamma_{ik} \cdot Z_k.$$

The CRED/Michigan University Studies (Diourbel/Thies, 1977 and 1982)

Ross, C., "A Village Level Study of Producer Grain Transactions in Rural Senegal", CRED/University of Michigan, Ann Arbor, Michigan, Discussion Paper 81, June 1979.

"Consumption Effects of Agricultural Policies: Cameroon and Senegal", CRED/University of Michigan, Ann Arbor, Michigan, August 1982.

"Producer Grain Transactions"

Data for this study were collected between July 1977 and July 1978. Ten families (compounds) were interviewed in each of three villages in the central groundnut basin. The analysis was done using the annual average data for each compound. Data on production, purchases, sales, gifts, and prices paid and received were collected for millet and groundnuts. Data were also collected on rice purchases.

Since this study was conducted when ONCAD was operating, much of the discussion is related to policy and farmer behavior under a system which no longer exists, so much of the information in the study is ignored in this summary. The results of primary interest for the purposes of this summary are:

- compounds sold an average of 8.6% of the millet they produced;
- about 83% of the compounds sold at least some millet;
- apparently all compounds purchased rice, usually in small amounts (i.e. frequently) with no obvious seasonal pattern (i.e. diet diversification is an important determinant); and
- the elasticity of marketed millet surplus was 3.51, indicating that a one percent change in the millet price will induce a 3.5% change in marketed millet. Ross does not indicate how the 17% who were not millet sellers were treated in the analysis - i.e., wether or not they were included or excluded from the analysis.

"Consumption Effects of Agricultural Policies"

The main results of this study are from a survey of three villages in the Central Groundnut Basin (Thies/Diourbel Regions). The survey included approximately 24 households in each village and was conducted between May 15 and August 15, 1981[20]. This was part of a "Nutritional Impact of Agricultural Policy" study funded by AID.

[20]The villages were Layabe (24), Sessene (24) and Thienthie (27).

The period over which the data for this analysis were collected covers the food-shortage or "soudure" period of the year, so the results are extremely time-specific. The time-specific nature of this study affords an advantage in that it indicates something about the time dimension in consumption, but it also includes a disadvantage - it should not be interpreted to represent the complete consumption "picture".

According to the survey, villagers spent about 20 percent of cash income on food (approximately equivalent to the amount calculated from the ISRA/IFPRI study discussed below). The amount of money spent on rice was also approximately equal to the amount spent on millet, but rice expenditures were always lower than millet expenditures. Millet, as a percentage of quantity of cereals consumed over the survey period, varied by village - between 69 and 94 percent, with rice accounting for the remainder.

The data were used to calculate income elasticities (this type of survey cannot be used to calculate price elasticities). They are:

Income Elasticities (per Adult Equivalent)	
Cereal	Income Elasticity
Millet	0.59
Rice	0.26
All Grains	0.28

These elasticities are substantially different from what Ross found for Dakar consumers and suggest that rural consumers' consumption may be more responsive to changes in real income than are urban consumers - at least during the "soudure". On the basis of this information, and all other things equal, an increase in the price of rice would reduce real income and for each ten percent drop in real income rice consumption would drop 2.6 percent, while millet consumption would drop almost six percent. That is, the primary impact would be on local cereal consumption, not on rice consumption.

The authors extend the analysis of income (and price) impacts on consumption to derive an approximate measure of nutritional impact. In doing this they account (again approximately) for a production response via its influence on income[21]. The relationship is rough, but it can be used to get a general idea of what the net response would be. It can also be used to infer what the net effect would be, even if the relevant elasticities are not at hand. The relationship is:

$$C_i = \alpha_i[E_{ii} + E_i(r_i + r_i\epsilon_i)]$$

Where C_i = Energy intake elasticity with respect to the price of (i);

α_i = Share of commodity i in calory intake;

[21]The study does not look at a differential between home produced and consumed foods vs purchased foods. This would be a very interesting extension.

E_{ii} = Direct price elasticity of demand for commodity i;

E_{i} = Income elasticity of demand for commodity i;

r_{i} = Share of commodity i in generating farm income;

ϵ_{i} = Direct price elasticity of supply for commodity i.

This formulation assumes that all income is generated from farming activities, it could and should be extended to include other income sources. Obviously, a full implementation of the relationship would include cross-price effects for both the demand and supply elasticities, but this formulation is sufficient to derive a general conclusion, one which is obvious:

- the more important a commodity is as a source of nutrition and as a source of revenue, the more welfare will be influenced by price and income changes;

- most analyses of production-response have found that lagged (last year's) prices are the major determines of supply, so in the short-run, direct and cross-price elasticities will dominate;

- in the long-run, increased "protection" via higher imported rice prices would have a secondary, positive, influence of local cereal prices, but, since a relatively small portion of local cereals are sold, the secondary positive nutrition effect generated by more income would probably be dominated by a much larger negative direct consumption effect - and the "substitution" issue re-emerges.

This study summarizes (briefly) some time-series estimates of the elasticities: One study is by Niane for data covering 1960-1976; and one is from Jabara (1979). Niane used a linear function with per capita millet/sorghum consumption dependent on rice prices, millet prices, per capita income and a time trend. The function was corrected for serial correlation and the parameters on all variables, except income, were statistically significant. There is a theoretical problem with using such a linear demand formulation, nevertheless, Niane obtains the following elasticities for millet/sorghum demand:

Item	Percent change in millet consumption for each one percent in row item:
Millet own-price	-1.10
Millet/rice cross-price	1.08
Per capita income	0.10

These results should not be taken as representative of Senegalese consumption at this time the data are very old and there has been considerable structural adjustment. However, they may be usable (with care because it is not a complete system) to indicate something about how general consumption behavior has changed over time - this comparison will be made when Delgado's results are presented.

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The Goetz Study of Eastern Senegal (1986/87)

Goetz completed Ph.D. research under the AID/Washington and USAID/Senegal funded "Food Security Project" managed by Michigan State University and conducted in collaboration with ISRA. The data were collected in Southeastern Senegal (the regions Tambacounda and Kolda) beginning November 1986 and ending August 1987. The sample is drawn from 15 villages and totals about 215 rural households. This study contains a great deal of information about farmer attitudes and behavior - only part of which is summarized here.

Goetz found that about 32 percent of the farmers were net cereal buyers, 29 percent net cereal sellers and 40 percent neither buyers or sellers. Overall, only five percent of total coarse grain production was marketed, with the majority of sales concentrated in the "net seller" category". A part of the distinction between these categories was availability of land, labor, and farming equipment.

Farmers in these regions place a high priority on cash income to purchase food. Goetz asked how they would spend an additional 15,000 FCFA and over 70 percent selected food purchases as either the first or second priority. Kelly asked a similar question of farmers in the Groundnut Basin in 1986 and obtained approximately the same priority ordering[22], which suggests that rice price increases would adversely affect these farmers. Goetz measured the possibility by analyzing the factors influencing marketed surplus of cereal grains for surplus, equilibrium, and deficit producers.

In his dissertation research, Goetz used a "probit and truncated regression" methodology to estimate the impact of prices (and other variables) on farmers' participation in cereal grains markets. He reported a refined analysis in 1992[23]. The information reported below is from the new analysis.

Table II-19

Impact of Rice and Coarse Grain Prices on Farmer Participation in the Coarse Grains Market: Quantities Sold (net Sellers) or Purchased (net Buyers)

Effect of a one FCFA change in:	Net Sellers (kg sold)	Net Buyers (kg bought)
Coarse Grain Price	8.05	1.04**
Rice Price	-9.46	13.24**

Source: Goetz(2), Table 3.
** not significant at the 10% level.

[22]While it is not relevant to this note, only 2% indicated that they would buy fertilizer as a first priority. None of Kelly's respondents selected fertilizer purchasing as a first priority.

[23]See Goetz(2).

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According to the "Net Sellers" column, a one FCFA increase in rice prices would reduce cereal marketing by 9.5 kg/household(HH) and a one FCFA increase in coarse grain prices would increase cereal sales by 8 kg per grain selling household. The "Net Buyers" column shows that a one FCFA increase in the rice price would push net buyers to purchase an additional 13.2 kg. However, none of the "Net Buyer" coefficients were significantly different from zero (10% level). Two factors should be kept in mind: these are conditional responses, that is the response after a family has decided to sell or buy; and the price of rice was very high (160 FCFA/kg vs the current 135 FCFA/kg) and there were "official" cereals prices when this research was done.

While the environment may have changed so much that these results cannot be used to quantify the effects of a price change on marketed surplus, they do provide solid evidence that the price of rice does influence farmer decisions about how much they will market. These results also indicate that factors other than prices may be more important determinants about how much rural families will purchase. Goetz's hypothesis was that transaction costs (availability of information, cart ownership, etc) would be important determinants of farmer participation in the grain markets. His results show that these factors may influence the probability that a family will buy or sell grain, but that they have little influence on how much will actually be traded. The number of people in the family was most often a significant variable. A obvious conclusion is that there is something fundamentally different about farmers who are net grain sellers and farmers who net grain buyers. This difference may be as simple as primary activity; a large portion of net buyers may have been herders, for example or they may have been severely resource constrained, or they may have concentrated on cash crop production.

The IFPRI/ISRA Senegal Price Policy Study

This is a USAID financed study being implemented by IFPRI in collaboration with ISRA. The study has collected expenditure (and other - i.e. production, sales) data from rural families in six agro-ecologic zones (Figure II-5 at the end of this section shows where the study zones are located.) About 30 rural households were surveyed in each zone. The data were collected each 15 days and cover a two year period (1988/89 and 1989/90). The study also includes one year of data collected from two urban centers (Kaolack and Tambacounda) in 1990/91. Analysis has not been completed, but when it is the study will provide some badly needed information about rural consumption patterns, as well as price and income responses.

Some of preliminary information for three representative rural zones and for the cities of Kaolack and Tambacounda are shown in Tables II-20 to II-22. Table II-20 shows 1990 data for the proportion of meals which are based on selected cereals for the two cities, and Table II-21 shows 1988/89 data on the source of calories, by cereal for three rural zones.

The results for Kaolack and Tambacounda are similar to what Ross found for Dakar, but suggest that if the Dakar data were updated it would show an even higher proportion of rice in the diet. Rice dominates lunch-time meals in both cities; 98-99 percent of the meals consumed at lunch were rice based. As in the Ross data for Dakar, evening meals in these two cities were more evenly distributed between rice and local cereals. The evening meals are much more diverse than the noon meal, and the diversity increases from Kaolack to Tambacounda. A good part of the difference between Kaolack and Tambacounda will be because of diversity in local production.

Table II-20

Cities of Kaolack and Tambacounda: Percentage of Meals Based on Cereal and Non-Cereal Commodities (July-December, 1990)

Commodity	Kaolack			Tambacounda		
	B'fast	Lunch	Diner	B'fast	Lunch	Diner
Rice	5.0	97.7	49.5	21.0	99.5	45.0
Millet	45.0	1.7	47.0	7.0	0.3	8.5
Sorghum	-	-	-	9.0	-	11.5
Maize	-	-	1.0	20.0	-	27
Fish/Meat/ Bread	-	0.3	2.5	-	0.3	6.5
Other	50.0	0.3	-	43.0	-	1.5
Total	100	100	100	100	100	100

Source: IFPRI/ISRA Senegal Agricultural Price Policy Project, Summary paper by Diagana, April 1991.
The results are based on 35 randomly selected families in Kaolack (452 visits) and 35 families in and in Tambacounda (413 visits). Each family was visited every 15 days during July-December, 1990.

Convenience can be cited as a major factor influencing the choice of noon-time meals, while diet variety may be cited as a major factor influencing the choice of cereals in evening meals. The data suggest that pricing policies may have a more immediate impact on the commodity mix in evening meals than on mid-day meals. It remains for formal analysis of the data to indicate if, and to what degree, relative prices and income influence substitution between the cereals. However, when aggregated across all meals the analysis will probably show that there is a relatively low rate of substitution between rice and local cereals. One of the important questions is the shape of this "substitution" relationship, because it has been a GOS policy to increase the availability of local cereals in a form more comparable to "ready-to-eat" rice, and to some degree to change the shape of consumer preferences. Pricing policy for rice has a direct impact because the price of rice sets a limit on the price of the transformed commodity. That is, the difference between rice prices and the processed equivalent for local cereals is susceptible to manipulation via rice pricing policy[24]. In the longer term, the margin may also be influenced by farm productivity (i.e. lower farm prices made possible by reduced unit production costs). In fact, a part of the reason why observed rates of substitution between rice and local cereals is low may be linked to availability. An environment under which (so far as an individual consumer is concerned) there is an unlimited supply of all cereals would probably exhibit a much higher rate of substitution. Senegal is structurally cereal deficit, which restricts the range over which this substitution can be observed.

The situation may be different for rural consumers, because they will have a greater range of choices (produce or purchase). But, in some regions of Senegal, even this flexibility is restricted. The data in Table II-21 indicate some of how this is reflected in terms of rural consumption patterns.

The consumption data for the Sagatta Zone (Northern Groundnut Basin) are precisely what would be expected in an environment where climatic conditions limit food production capabilities: over 80 percent of calories consumed (per adult equivalent) are purchased; 65 percent of purchased calories are obtained in the form of imported rice; and, rice accounts for almost 54 percent of all calories. It is important to note that 1988/89 was a relatively bad rainfall year for this zone, so the data may exaggerate the importance of rice.

The consumption data for the zone in the Central Groundnut Basin show a vastly different picture: local food crops account for 85 percent of calories; only about 20 percent of calories are purchased; but, a high portion (65%) of purchased calories are still obtained from imported rice.

The zone in the south and east of Senegal (Missirah) has a consumption pattern which is considerable more diverse than either of the other two zones: about 80 percent of calories are from local foods; 20 percent of calories are purchased; and, about 36 percent of the purchased calories are from imported rice. The relatively more favorable climate in this zone is reflected by the large shares of corn and sorghum in the diets, and a better overall calory intake. Naturally, a similar pattern is shown by the share of expenditures allocated to the

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[24]See the Senegal Agricultural Sector Analysis, Chapter IV.

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purchase of crops for home consumption (Table II-22). Imported rice accounts for the majority of expenditures in the Northern, Central and Southwestern "zones", ranging between 91% (Southwest) and 64% (Colobane).

Table II-21

Rural Senegal: Percent of Calories Consumed per Adult Equivalent by Source
(Three Socio-Ecologic Zones, December 1988-September 1989)

Commodity	North Groundnut Basin (Sagatta)	Central Groundnut Basin (Niakhar)	Eastern Senegal (Missirah)
Rice	53.8	15.4	9.0
Millet	23.8	70.1	14.0
Sorghum	-	0.2	16.0
Marze	3.5	0.1	42.0
Cowpeas	10.4	2.5	1.0
Groundnuts	8.5	10.7	18.0
Other Cereal/Legumes	-	-	-
Calories/Adult Equivalent/Day	1324	1897	2070
Percent of Calories by Source			
Cereal/Legumes	64	67	71
Veg. Oil	26	17	(all
Bread	8	-	others
Milk	2	15	29%)
Roots/Tubers		1	
Purchased	82	26	19.7
(rice as % of calories purchased)	(65)	(65)	(36)
Produced	18	74	80.3

Source: IFPRI/ISRA Senegal Price Policy Study, Summary report by Kelly, Diagana and Fall, July, 1991, updated from other preliminary reports.

Table II-22

Expenditures Shares for Crops Purchased for Home Consumption (1989/90 Cropyear)

Zone	Millet/ Sorghum	Maize	Imported Rice	Cowpeas	Peanuts
Northern Basin[1]	23%	4%	67%	3%	3%
Central Basin-Niakhar	23%	1%	71%	-	5%
Central Basin-Colobane	29%	1%	64%	1%	6%
Southwest Basin	7%	-	91%	-	1%
Southeast Basin	46%	-	47%	-	6%
Senegal Oriental	22%	36%	34%	-	1%

Source: ISRA/IFPRI September 1993, page 105.
[1]Data for the Northern Basin are for 1988/89; this zone was not included in the 1989/90 survey. Note that 1988/89 was also an especially poor production year in most of the northern and central zones - 1989/90 was a more "normal" year.

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Allocation of expenditures for rice was much more evenly distributed in the Southeast (47%) and Eastern zones (34%). Purchase of groundnuts was small, generally between 1% and 6% of expenditures for crops. However, this should not be taken as indicative of total consumption, because vegetable oil is a major ingredient in the Senegalese diet.

Sources of Revenue

Crop based agriculture was the main source of net revenue for the all of the rural zones in the study (Table II-24). Crop based agriculture and livestock production together accounted for between 60 and 80% of net revenue in 1989/90. Net income from crops and livestock was only about 59% of the total in rural Tambacounda (the zone labeled Senegal Oriental), but this zone also received about 22% of its net income from migration income as well as 6% from remittances, the highest of any of the rural zones.

Table II-23

Gross Revenue, Net Revenue and Aggregate Production Costs
(FCFA per Adult Equivalent, 1989/90 Crop)

Crop	Northern Basin	Central Basin Niakhar	Central Basin Colobane	Southwest Basin	Southeast Basin	Senegal Oriental
Hectares/Adult Equivalent	0.31	0.53	1.40	0.75	1.56	0.48
Peanuts						
Gross	11,900	14,890	42,630	20,210	39,700	11,900
Net	8,590	9,320	31,070	14,960	31,690	9,111
Production Cost	3,310	5,570	11,560	5,250	8,010	2,789
Cost % of Gross	28	37	27	26	20	23
Cereals						
Gross	4,150	14,660	16,750	20,130	14,060	7,425
Net	3,940	14,480	16,600	19,890	13,440	7,024
Production Cost	210	180	150	240	620	401
Cost % of Gross	5	1	1	1	4	5
Other Crops						
Gross	710		370	320	1,560	1,478
Net	630		360	170	1,270	1,305
Production Cost	80		10	150	290	173
Cost % of Gross	11		3	47	19	12
Total Input Cost as % of Gross Crop Revenue	21%	20%	20%	14%	15%	16%

Source: ISRA/IFPPI September 1993, page 88 and Annex Table A5.2, page 14.
These data are presented per adult equivalent. The first row showing land cultivated per adult equivalent has been added to provide information so a more common measure of relative cost and revenue per land unit can be available to the reader.

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Groundnuts were the major source of gross revenue from crops sales, accounting for between 86% and 91% of the total, depending on the "zone". With the exception of Colobane in the Central Basin, cereals generally accounted for about 8% of gross sales revenue. Cereals accounted for 12% of gross sales revenue in Colobane[25].

Overall, production costs (cash and imputed costs) account for around 20% of gross revenue from crops in the North and Central Groundnut Basin and for about 15% of gross revenue in the Southern parts of the Senegal, all calculated for adult equivalents.

Urban incomes, as represented by incomes in the cities of Kaloack and Tambacounda, were much higher than they were in the rural zones (105,810 FCFA/adult equivalent in Kaloack and 104,800 FCFA/adult equivalent in Tambacounda as compared to between 32 and 72 thousand in the rural zones). As would be expected, the majority of the urban incomes was from commerce and services (Table II-24).

[25] ISRA/IFPRI, September 1993, page 103.

Table II-24

Net Income FCFA per Adult Equivalent (Rural - 1989/90, Urban - 1990/91)

Item	Rural Villages					Urban Cities	
	Central Basin		Southwest Basin	Southeast Basin	Senegal Oriental	Kaolack	Tamba-counda
	Niakhar	Colobane					
Sample Households	31	35	27	36	29	35	35
FCFA per Adult Equivalent							
Own Crops	25,931	42,624	33,426	51,003	15,673	660	485
Livestock	1,125	2,615	2,380	12,865	9,326	300	0
Ag. Labor	44	169	1,257	126	656		
Commerce	2,260	864	16,746	5,652	967	24,085	11,875
Services	1,086	2,716	9,117	2,827	1,536	49,380	77,115
Transport	0	2,521	1,176	414	7	0	175
Food Preparation	40	1,192	833	189	(92)	14,570	5,285
Gathering	0	61	593	155	20	0	0
Cottage Industry	987	1,469	1,772	1,216	2,258	4,570	5,910
Transfers/gifts	(20)	52	1,234	(1,343)	2,670	8,740	2,785
Borrowing	119	180	(1,474)	(1,436)	(39)	640	575
Migration	929	1,782	140	2	9,504	2,865	(400)
Unknown	195	0	7	380	0		
Total	32,696	56,245	67,207	72,050	42,486	105,810	103,805
Percent of Total							
Own Crops	79.3%	75.8%	49.7%	70.8%	36.9%	0.6%	0.5%
Livestock	3.4%	4.6%	3.5%	17.9%	22.0%	0.3%	0.0%
Ag. Labor	0.1%	0.3%	1.9%	0.2%	1.5%	0.0%	0.0%
Commerce	6.9%	1.5%	24.9%	7.8%	2.3%	22.8%	11.4%
Services	3.3%	4.8%	13.6%	3.9%	3.6%	46.7%	74.3%
Transport	0.0%	4.5%	1.7%	0.6%	0.0%	0.0%	0.2%
Food Preparation	0.1%	2.1%	1.2%	0.3%	-0.2%	13.8%	5.1%
Gathering	0.0%	0.1%	0.9%	0.2%	0.0%	0.0%	0.0%
Cottage Industry	3.0%	2.6%	2.6%	1.7%	5.3%	4.3%	5.7%
Transfers/gifts	-0.1%	0.1%	1.8%	-1.9%	6.3%	8.3%	2.7%
Borrowing	0.4%	0.3%	-2.2%	-2.0%	-0.1%	0.6%	0.6%
Migration	2.8%	3.2%	0.2%	0.0%	22.4%	2.7%	-0.4%
Unknown	0.6%	0.0%	0.0%	0.5%	0.0%	0.0%	0.0%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: IFPRI/ISRA, September 1993, page 67. Note: Each "zone" consists of one "market village" and two "non-market" villages. There are substantial differences between the two village-types. The revenues reported above are weighted by population. Negative numbers: for borrowing = net loans made, for gifts = net gifts given, etc.

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Production Marketed and Production "Sufficiency"

The data from this survey suggest that cereals marketing may have increased in importance as a source of revenue in recent years. As shown in Table II-25, the Southern parts of the survey area (essentially the regions of Fatick and Kaolack, which are also generally surplus producers) marketed over 20% of production. Further evidence for an increasing role of cereals in marketing is given by the 15% of production that was marketed in Senegal Oriental (in the region of Tambacounda). This can be contrasted with the Goetz's data for this general area, which indicates that only about 5% of coarse grain production was marketed in 1987. Goetz's analysis indicates a negative relationship between cereal marketing and the rice price, and since the official price has dropped from 160 FCFA/kg in 1987 to about 135 FCFA/kg now, the observed change is certainly consistent with available behavioral information.

Table II-25

Share of Crop Production Marketed and Cereal Sufficiency Ratios (1989/90 Cropyear)

Zone	Share of Production Marketed		Cereal Sufficiency Ratio[1]
	Cereals	Groundnuts	
Northern Basin[2]	3%	62%	14%
Central Basin-Niakhar	4%	16%	76%
Central Basin-Colobane	12%	72%	98%
Southwest Basin	23%	49%	103%
Southeast Basin	28%	68%	102%
Senegal Oriental	15%	39%	69%

Source: ISRA/IFPRI September 1993, page 94 and 124.
[1]Cereal produced per adult equivalent divided by quantity required to provide 1900 kcal.
[2]Data for the Northern Basin are for 1988/89; this zone was not included in the 1989/90 survey. Note that 1988/89 was also an especially poor production year in most of the northern and central zones - 1989/90 was a much better year.

This study also found that the portion of households engaged in cereal marketing may have increased in recent years. For example, Goetz found that about one-third of the producers were not in the cereals markets, while this research found that only about 7% did not market cereals[26]. The inclusion of Fatick and Kaolack in this study probably accounts for much of the difference, since these regions tend to be surplus producers (as demonstrated by the cereal sufficiency rations above one in the Southeast and Southwest Basins in Table II-25).

[26]ISRA/IFPRI September 1993, page 126.

Analysis

The authors of the study conclude the report with an analysis of the likely impact of a devaluation of 50% on real incomes in the rural zones covered by the study. The analysis is based on several assumptions about substitutability between rice and local cereals and the degree to which a devaluation would "pass through" in terms of changes in local prices. The basic assumption is that local cereal prices would change 20% for a 50% devaluation and that percentage changes in rice, groundnut, and vegetable oil prices would follow the devaluation. The analysis also attempts to account for the effects of a devaluation on the cost of imported inputs, which is extremely low because very low levels of "imported" inputs are used by Senegalese farmers - generally none to less than one percent of gross production cost [27].

The analysis maintains that consumption shares would not change, i.e. that the share of rice and other cereals in diets would remain unchanged, following a price change. Similarly, the analysis maintains that the relative mix of cereals and groundnuts would remain constant following a devaluation, and that the only change would be through the value of output and the cost of consumed goods. Given these assumptions, the report concludes:

- if the full price effect of a devaluation is passed to rural rice consumers and groundnut producers, then real incomes would increase between 1% and 18%, depending on whether or not a zone is a high groundnut producer/low rice consumer or not;

- if one-half of the price effect of a devaluation is passed through to rural consumers and producers, then real incomes would generally decrease by 3% (but ranging between +5% to -8%, depending on the zone).

This analysis provides an upper bound, perhaps an extreme one, on the impact of a devaluation. As low as it they might be, the analysis does not account for any substitution effects in either consumption or production. Given that the "impacts" obtained are relatively small, the likelihood is that even relatively low rates of substitution in production and consumption would act to further reduce the impact on real incomes. The authors also point out that urban consumers would loose between 20% and 25% in real income, because of the change in rice and vegetable oil prices.

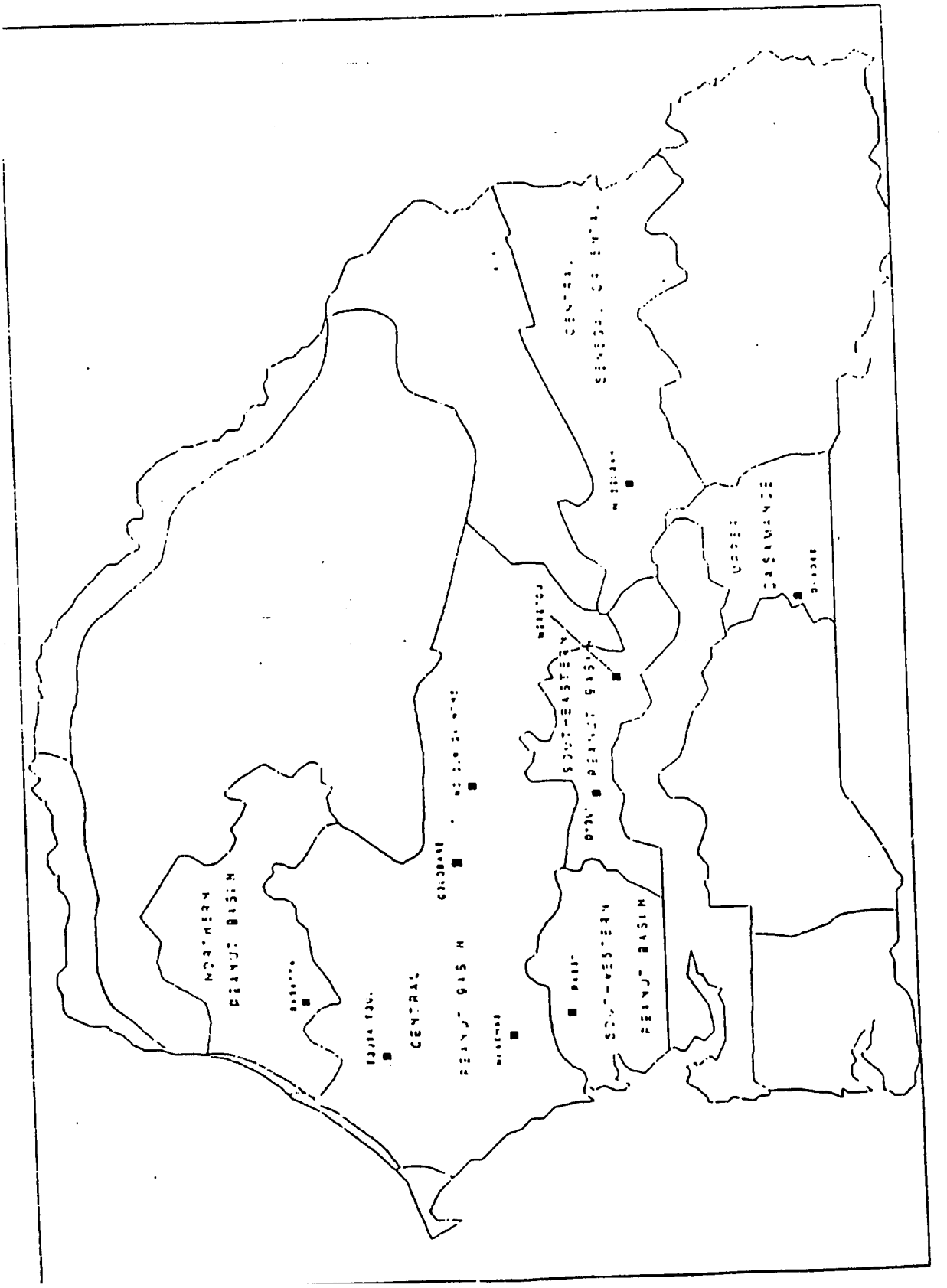
In drawing these conclusions about the impact of "structural adjustment through devaluation" the authors have ignored two critical factors: 1) current domestic rice prices are about twice the world market or border price; and 2) current domestic groundnut and vegetable oil prices are both well above world market prices. It would be politically impossible for the government to add 50% to rice prices, and the same is true for vegetable oil prices. Likewise, the groundnut sector in structurally deficit because farm prices are so much higher than world prices, so it would be financial lunacy to pass much of a devaluation gain on to farmers. A much more reasonable conclusion is that the government would reduce the import taxes on rice

[27] ISRA/IFPRI September 1993, page 109.

and vegetable oil so that domestic prices remained about constant, and that it would likely absorb most gains on the groundnut export side to pay past and current deficits in the groundnut sector. Current pricing policy in Senegal, deliberate or not, approaches a second-best answer to the currency overvaluation problem: tax imports and subsidize exports. Thus, if the government would eliminate these taxes and subsidies following a devaluation, then the final impact on agriculture would likely be minimal. The major "loser" would be the state, via lost tax revenue, with numerous implications for a country which already has a serious budget problem. This kind of a policy reaction to a devaluation would also eliminate much of the money now available to subsidize rice production in the River Valley.

Figure II-5

Study Zones for the ISRA/IFPRI Price Policy Study



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The IDA Senegal River Valley Monitoring Project

This is a USAID financed study of three villages in the Senegal River Valley. Data from 45 households were collected on a bi-weekly basis from December 1988 to December 1989 (one family was eliminated from the analysis because it had exceptionally high income and it was felt that it would bias the results). A summary of average household expenditure shares for 1989 are shown in Table II-26.

The share of food in total purchases in the three villages is not unlike that from the Northern Groundnut Basin[28]: expenditures on food accounting for between 50 and 82 percent of the total (depending on village); expenditures on imported food accounted for between 50 and 76 percent of total expenditures; and, purchased food accounted for between 74 and 82 percent of the total value of all food consumed (including imported, purchased local produce, and home grown food).

Table II-26

Three Villages in the Senegal River Valley: Expenditure Shares per Household
(December 1988-December 1989)

Expenditure	Doumga Rindiaw	Boyenadji Roumde	Thiemping
Agricultural (livestock, inputs, fishing equipment)	3.0	1.4	6.0
Non-Agricultural (labor, credit, health/social, business, transport)	19.4	47.5	12.0
Food Purchases	77.6	51.1	82.0
Imported Foods	(51.2)	(44.8)	(76.0)
Local Produce	(26.4)	(6.3)	(6.0)
Percent of Total Value of Food Consumed by Source			
Purchased Imported Foods	48.6	67.4	76.2
Purchased Local Foods	25.1	9.5	6.0
Home Grown Foods	26.3	23.1	17.8
Total Expenditures and Value of Food (FCFA/Household)			
Total Expenditures	4,712,500	18,828,701	9,563,225
Total Value of Food (purchased + home),	4,962,425	12,515,040	9,549,317
Average Household Size			

Source: IDA, "Senegal River Basin Monitoring Activity: Final Report", May 1991. page 264-265.

[28]The IDA and IFPRI data are not strictly comparable because one is expressed in terms of money spent and the other in terms of calories. Both, however, indicate the relative importance of purchased vs home grown food.

The area of coverage of the IDA project was expanded in 1990. It now to includes total of 32 villages in the Matam/Podor region (the middle-Valley). Income, consumption an expenditure data are being collected each month. The analysis of these data has not bee completed, but a very preliminary look at data covering the last four months of 1991 indicate that consumption of local and imported food grains is very responsive to food costs and incomes And, the preliminary analysis of this data produced income and prices elasticities which wer similar in magnitude to those reported by Niane (see page 13)[29], despite the vast difference i methodology (time-series vs cross-sectional data). The preliminary analysis also showed tha one of the biggest impacts of a change in imported rice prices would be to force consumers ou of the market. This is consistent with the GOS policy to stimulate local grains for imported rice But, since this region is food grain deficit, the ultimate result could be a reduction in overa nutritional well being.

[29]See Kite, "Preliminary Results: Senegal River Valley Monitoring Project Food Consumption Data", USAID/Dakar, ANRO working Paper, April 1992.

The Ross Study of Dakar Consumers (1977)

Ross conducted his study in Dakar in 1977. He collected data from 75 households more or less randomly distributed throughout the city. The survey was conducted between June 1977 and March 1978. Three months of data were used to obtain the estimates of the elasticities, but the reference document does not say which months (61 observations were finally usable for analysis). Ross used the data to obtain estimates of direct-price, cross-price and income elasticities (monthly average, per capita) for rice and millet. The relationship was quantity demanded as a function of prices, income, and family size (number, number of children and number of adults). These functions were fit to the data in linear and double-log form using standard regression techniques.

Ross's results were, to say the least, inconclusive. He found that millet price and family size influenced millet consumption, but not income or rice prices. He found that income and family size influenced rice consumption but not rice or millet prices. However, these results should not be taken as "final": (1) it is unlikely that a sample this small could adequately represent the population of Dakar; (2) the sample time frame of three months leaves too much of the consumption year unexplained; (3) rice prices were controlled (as he mentions) so there was not enough price variation to estimate the relationships; (4) the functional forms he used, although classic, are not defensible as an explanation of consumer behavior; (5) he does not indicate whether or not there is a correlation between family size and family income -- i.e. if so, including both in a single function will confound the results; and (6) the short time period and restricted geographic area means that he should only have expected to obtain income elasticities in the first place. Keeping these factors in mind, he concludes:

- the income elasticity of demand for rice is 0.12;

- the income elasticity of demand for millet is not significantly different from zero and the direct price elasticity, though not especially statistically significant, is high at -1.1.

- family size is the major determinant of per capita demand for both grains.

Ross also collected information about rice and millet consumption attitudes and practices which is relevant to the substitution issue. Information was: the form in which millet is purchased, the frequency of purchase, and the time of day at which millet and rice were consumed.

- 92% of the 75 households purchased millet regularly.

- 81% of the millet purchases were in whole grain form.

- 2.08 millet based meals were consumed per week, nearly all (2.06) in the evening.

- 8.68 rice based meals were consumed per week, most (6.71) at noon.

- 10.8 grain based meals were consumed per week (8.7 rice and 2.1 millet, 6.73 at noon and 4.03 in the evening).

In short, 80% of all grain based meals were rice and 62% of all grain based meals were consumed as rice, at noon (weekly average over a three week period, based on 44 observations, with most households reporting that there was little seasonal variation).

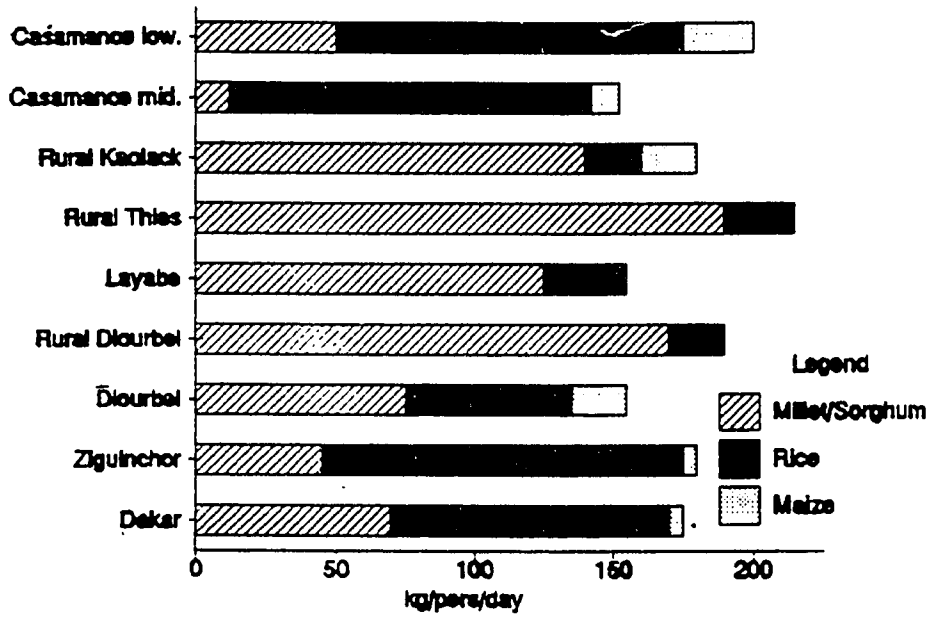
The fact that such a large portion of the grain based meals were rice would suggest that there would be a possibility for considerable substitution, but the fact that most of this is consumed at noon when convenience is a major issue, is clearly a limiting factor. These kinds of information, have led researchers to conclude that the price effect on local-cereal/rice substitution is low and are used to explain the "statistical non-significance" of cross-price effects.

The Bricas/Sauvinet Review of Consumption Studies

This survey covers a number of studies in the Sahel, only the portions relevant to Senegal are included in this note. The authors did not believe that the consumption data were reliable enough for other than a graphic presentation. Figure II-6 shows their findings for Senegal.

Figure II-6

Per Capita Cereal Consumption in Senegal
(Source: Adopted from Bricas and Sauvinet)



The information provided by this survey helps to emphasize the importance of disaggregated analyses of consumption behavior in Senegal. In rural Casamance, for example, rice accounts for a large portion of the diet, while in the Groundnut basin millet/sorghum are the dominant commodities - some rice is still consumed, and there is evidence that this is increasing. Rice is, as known and expected, a major part of the diet in urban areas, especially in Dakar and Ziguinchor.

While this data cannot be used directly to establish substitution rates, it can help to understand where attempts to manipulate consumption via pricing policy may or may not succeed. In rural Casamance, for example, rice is produced for and home consumption, and the population has a long tradition of not selling any surplus production. The tradition, however, of having a large amount of rice in the diet means that the deteriorating "carrying capacity" in

this region is likely to shift rural consumers to a dependence on imported rice[30]. That is, production policy may be more important for improving welfare than rice pricing policy. The situation for the urban areas is apparent. It will be discussed in more detail below.

One of the critical, and sometimes ignored, pieces of information provided by this review is the mix of various cereals dishes and consumer attitudes about them. Even though this information comes from a variety of sources and was collected at different times, it gives some useful indications about likely consumer response to pricing policy. For example, they report that 49 percent of rural consumers wanted more rice based dishes (and even that 25 percent of Dakar consumers wanted more rice based dishes). As will be discussed later, much of the rice based diet is for the noon meal. What is especially interesting is the conclusion that consumers would like more non-cereal based dishes (remembering that a sauce containing meat or fish and vegetable goes along with the rice dishes). This means that a pricing policy to discourage rice consumption may shift consumers to other, non-cereal, dishes. Naturally, much depends on income and status, but some of the econometric results seem to reflect this "desire".

Another relevant factor is that rice and local cereals are consumed at about the same proportions for all income and status categories. It is the sauce that changes. Since rice (and local cereal) in a meal may only account for 30 percent of the total cost of ingredients, price may play less of a role than might be expected. One rough conclusion, at least for the urban sector, is that rice pricing policy meant to favor local cereals may not shift consumption from rice to local cereals, or even away from rice.

[30]See the Senegal Agricultural Sector Analysis for further discussion.

Miscellaneous Consumption and Demand Elasticity Estimates for Senegal

Per capita cereal consumption estimates by grain and by region for urban and rural consumers are shown in Tables II-31 and II-32 at the end of this section. These data are summarized below, in Tables II-27 and II-28. According to these data, (averages for 1977/79 and 1987/90) consumption has shifted from millet/sorghum and wheat to rice and maize. The local cereals share has decreased from 58% of the total in 1977 to about 55% now. Rice now accounts for 35% of the total, 5% more than in 1977.

Table II-27

Senegal: National Grain Consumption (kg/person)

Grain	1977/79	1982/84	1991*
Millet/Sorghum	107	106	91
Rice	60	72	70
Maize	9	11	18
Wheat	25	22	20
Total	201	211	199

Source: 1977/79 and 1982/84 - Table II-31 and II-32.
*USAID Food Needs Assessment (1987-1990 average), The assessment converts paddy to rice at 67%, 70% is used here to maintain consistency.

Differences between urban and rural per capita grain consumption in 1977/79 and 1982/84 are shown in Table II-31. While the data for 1982/84 may be somewhat suspect because total urban and total rural consumption is constant and equal in all regions, the data do demonstrate the relative importance of the various grains. In per capita terms:

- the rural population consumers about 5 times as much millet/sorghum as the urban population;
- the rural population consumes about twice as much maize as the urban population;
- the urban population consumes about twice as much rice as the rural population;
- the urban population consumes about 10 times as much wheat as the rural population;
- urban consumption of rice has increased by about 1.5% per year and rural rice consumption has increased about 2.1% per year; and,
- given an urban and rural population growth rates of 3.8% and 2.0%, respectively, then rural total rice consumption has been increasing at about 5.3% per year and total urban rice consumption has been increasing at 4.1% per year.

Table II-28

Senegal: National Urban/Rural Grain Consumption (kg/person)

Grain	1977/79		1982/84	
	Urban	Rural	Urban	Rural
Millet/Sorghum	32	149	33	147
Rice	96	42	110	51
Maize	5	11	7	13
Wheat	59	6	54	4
Total	192	205	204	215

Source: Table II-31 and II-32.

Table II-29, below shows a complete set of consumption quantities (1980) along with their income elasticities. The source did not indicate the original source of the data, so it is difficult to judge its quality. A comparison of the per capita consumption estimates with those in Table II-31 suggest that both are from the same source.

Table II-29

Per Capita Food Consumption and Income Elasticity Estimates for Senegal (1980)

ALIMENT	Consommation (1980 - tons)	Per Capita* (kg/year)	Coef. Elast. (1)
Riz **	508 500	64	+ 0,4
Blé	109 900	20	+ 0,7
Mais	65 700	11	+ 0,3
Mil	556 100	100	- 0,2
Pomme de Terre	14 700	2.6	+ 0,1
Patate Douce	6 200	1.1	+ 0,1
Manioc	18 100	3.3	- 0,2
Sucre	85 500	15.4	+ 1,3
Niébé - Béref	21 000	3.8	+ 0,4
Arachide	77 600	14.0	+ 0,3
Tomate fraiche	18 700	3.4	+ 0,6
Tomate cc	9 100	1.6	+ 0,6
Oignons	38 500	6.9	+ 0,6
Autres légumes frais	26 000	4.7	+ 0,6
Bananes	6 200	1.1	+ 0,7
Oranges	19 800	3.6	+ 0,7
Mangues	25 500	4.6	+ 0,3
Viande bovins	37 900	6.8	+ 0,8
Viande ovins	6 800	1.2	+ 1,0
Viande caprins	3 400	0.6	+ 1,0
Viande porcins	5 700	1.0	+ 1,0
Viande volaille	11 900	2.1	+ 1,0
Viande abats	9 600	1.7	+ 0,6
Oeufs	5 100	0.9	+ 0,9
Poissons frais cont.	15 900	2.9	+ 0,5
Poissons frais mar.	97 400	17.5	+ 0,5
Poissons transformés	32 800	5.9	+ 0,4
Huile arachide	47 600	8.6	+ 0,7
Laitages	110 000	19.8	+ 0,4

Source: GOS/Ministry of Interior/DAT (1984).
* Using total population = 5,560,395.
** Originally paddy, converted to rice using a conversion rate of 70%.

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Table II-30 shows the weights used to construct the Dakar Consumer price Index The table contains weights for medium/low income families and for high income families. A straight comparison of these data is not appropriate, because the medium/low income family data includes housing rental and home repair, while the high income family data do not include housing costs. Thus, the difference in the proportion of income spent on food is greater than the 10% indicated by the weights.

Table II-30

Weights for the Dakar Consumer Price Index

Medium and Low Income Families		High Income Families	
Commodity	(1967=100) (%)	Commodity	(1961=100) (%)
All Food	56.0	All Food	45.0
Cereal based	15.4	Cereal based	4.0
Legumes-fresh	3.2	Legumes (all)	4.4
Legumes - dry	1.5		
Preserves	2.0		
Fruit	1.2	Fruit	3.9
Milk, Eggs, Oil	10.4	Milk, Eggs, Oil	7.4
Sugar % Sweets	2.3		
Condiments	1.8		
Drinks	1.8	Drinks	9.0
Meat	7.9	Meat	5.3
		Pork	5.8
Fish	8.5	Fish	2.2
		Other foods	3.0
Non-Food	44.0	Non-Food	55.0
Clothing	11.9		
Household materials	1.7	Household materials	15.6
Medicine & Hygiene	4.0	Medicine & Hygiene	8.9
Fuel, Water, Elec.	5.8	Gas, Elect.,Tel.	2.3
Rent and Home Repair	8.7		
Leisure	6.5	Leisure	11.7
Transport	5.4	Transport	7.9
		Domestic Services	4.6
		Other	4.0

Source:Monthly Report, Direction de la Prevision et de la Statistique
Ministere de l'Economie des Finances et du Plan.
Medium and low income families are designated "type african".
High income families are designated "type european".

Table II-31

Senegal: Urban/Rural Per Capita Consumption by Region (1977/79)

Region	Millet and Sorghum (kg)		Rice (kg)		Maize (kg)		Wheat (kg)		Total (kg)		Consumable Equivalent* (kg)	
	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural
Dakar	16	52	104	120	4	2	69	30	193	204	168	183
Ziguinchor/Kolda	15	114	130	70	8	19	79	2	232	205	203	175
Diourbel	63	161	77	31	5	2	48	11	193	205	164	166
Louga	63	161	77	31	5	2	48	11	193	205	164	166
St. Louis	30	133	82	50	5	16	76	6	193	205	163	170
Tambacounda	50	164	100	24	6	15	38	3	194	206	170	166
Fatick/Kaolack	50	164	100	24	6	15	38	3	194	206	170	166
Thies	63	161	77	31	5	2	48	11	193	205	164	166
Total	32	146	96	42	5	11	59	6	192	205	166	169
National Total	107		60		9		25		201		168	
Conversion factor	78.0%		100.0%		78.0%		70.0%					

Conversion factor used to convert rough kilograms to consumable equivalent
Source:SONED/ORANA quoted in Dieye (1987)

Table II-32

Senegal: Urban/Rural Per Capita Consumption by Region (1982/84)

Region	Millet and Sorghum (kg)		Rice (kg)		Maize (kg)		Wheat (kg)		Total (kg)		Consumable Equivalent* (kg)	
	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural
Dakar	16	53	119	135	6	2	63	25	204	215	180	195
Ziguinchor/Kolda	15	114	142	73	12	26	35	2	204	215	188	184
Diourbel	65	162	90	44	5	2	44	7	204	215	175	177
Louga	65	162	90	44	5	2	44	7	204	215	175	177
St. Louis	31	133	99	62	5	16	69	4	204	215	175	181
Tambacounda	52	165	109	26	9	22	34	2	204	215	180	173
Fatick/Kaolack	52	165	109	26	9	22	34	2	204	215	180	173
Thies	65	162	90	44	5	2	44	7	204	215	175	177
Total	33	147	110	51	7	13	54	4	204	215	179	179
National Total	106		72		11		22		211		179	
Conversion factor	78.0%		100.0%		78.0%		70.0%					

Conversion factor used to convert rough kilograms to consumable equivalent
Source:SONED/ORANA quoted in Dieye (1987).

Enquete Sur Les Priorites (1991/92)[31]

This is the most recent and most complete income/expenditure survey conducted in Senegal. This nationwide survey was conducted between October 1991 and June 1992, with a sample of approximately 100,000 households divided into two broad, strata (urban and rural). The sampling methodology was based on census districts, with each drawn with probability according to the number of households in the census district. A total of 498 districts were sampled and 20 randomly selected households were enumerated in each (the census districts were actually subdivided into several homogenous sub-strata, based on agro-climatic considerations, with the sample for each sub-strata drawn independently). Data were collected on household characteristics such as household equipment, type of housing, age, sex, education, primary economic activity, etc.. Data were collected on expenditures (recall) for the month preceding the survey and for sources and levels of income (recall) for the year preceding the survey. Thus, the expenditure data are generally representative of the survey period (1991/92) while the income data are generally representative of the preceding year (1990/1991). Since prices were reasonably stable over the two years, income/expenditure relationships can still be made with reasonable confidence. This survey has generated a great deal of information, much of which will be available in the near future. This summary is based on the preliminary report and will cover only the information specific to economic activity, income and income sources, and expenditures according to commodities purchased. All of the income and expenditure data should be understood to cover cash revenue and cash expenditures only -- the value of home produced and consumed goods are not included in either incomes or expenditures.

Primary Economic Activity

The survey produced an estimate of the total population at 7.3 million people, with a total of 4.7 million above the age of 10 years (potential active workers but including students, etc.) and a total of 2.7 million actively employed persons (1.5 million male and 1.2 million female). Nineteen percent of the population above 10 years old were students. Almost 48% of the total population was below 15 years of age.

The top three economic activities (agriculture, commerce, and public service) account for almost 90% of the total active population. Agriculture was the primary economic activity of all Senegalese people, with 65.3% of the active population, about 63% of active males, and 68% of active females listing agriculture as their principal economic activity. The second most important activity was commerce (13.8% of the total, 8.6% of active males, and nearly 20% of active females) and the third most important was public service (about 9.6% of the active population, total and by gender)[32]. The relative importance of individual occupations drops off rapidly, so that the fourth, fifth, and sixth most mentioned occupations (mechanic, transport, public works) each accounted for only about 2% of the total. (See Table II-33, Figure II-7).

[31]Ministry of Economy, Finance and Plan, Direction of Forecasts and Statistics, February 1993.

[32]Public Serevice includes the civil service as well as doctors, lawyers, etc.

Table II-33

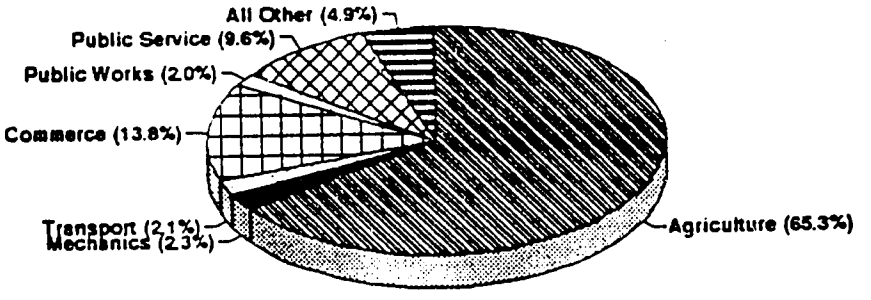
Economic Activity: Total, Male, and Female Occupations
(1991/92)

	Active Population			Percent of Total		
Economic Activity	Male	Female	Total	Total	Male	Female
Agriculture	935,970	853,497	1,789,467	65.3%	62.9%	68.1%
Commerce	128,421	249,820	378,241	13.8%	8.6%	19.9%
Public Service	142,608	119,713	262,321	9.6%	9.6%	9.5%
Mechanics	62,796	1,377	64,173	2.3%	4.2%	0.1%
Transport	56,182	1,899	58,081	2.1%	3.8%	0.2%
Public Works	53,176	1,223	54,399	2.0%	3.6%	0.1%
Wood and Lumber	37,160	1,985	39,145	1.4%	2.5%	0.2%
Food Preparation	27,295	7,530	34,825	1.3%	1.8%	0.6%
Textile	12,899	4,522	17,421	0.6%	0.9%	0.4%
Undefined	10,553	5,732	16,285	0.6%	0.7%	0.5%
Construction	4,149	2,387	6,536	0.2%	0.3%	0.2%
Banking	3,148	1,475	4,623	0.2%	0.2%	0.1%
Chemicals	3,774	366	4,140	0.2%	0.3%	0.0%
ONG and Politics	2,088	1,272	3,360	0.1%	0.1%	0.1%
Diplomatic	2,384	656	3,040	0.1%	0.2%	0.1%
Printing	1,822	175	1,997	0.1%	0.1%	0.0%
Mining	1,903	93	1,996	0.1%	0.1%	0.0%
Tobacco and Drinks	1,425		1,425	0.1%	0.1%	0.0%
Total	1,487,753	1,253,722	2,741,475	100%	100%	100%

Source: "Enquete Sur Les Priorites", MEFP/DPS, page 29.

Figure II-7

Primary Occupations of the Active Senegalese Population
(Percent of Active Persons, by Occupation)



Sources of Household Revenue

Since this survey did not account for home produced and consumed goods, it is not appropriate to compare household revenue between the urban and rural populations or between agricultural and non-agricultural sources. However, it is possible to extrapolate a somewhat more complete estimate of rural income using the share of crop production marketed (as shown by the ISRA/IFPRI study). For example, according to the data in Table II-34, rural per capita cash revenue from groundnuts was 5,760 FCFA. If we take 50% as the share of groundnut production marketed, then the total value would be about 11,520 FCFA/capita. Likewise, if we take 10% as the national average for the portion of cereal production marketed, then the per capita value of millet, rice and maize production would be 8,230 (rather than 823). About 30% of vegetable production tends to marketed, so on a per capita basis this would be 4,636 (compared to a cash revenue of 1,391). All of this would change the agricultural based, rural, per capita revenue shown in Table II-34 from 9,656 FCFA to 20,305 FCFA and the total from 43,517 FCFA/capita to 54,257 FCFA per capita, which is in the range reported in Table II-24. No attempt will be made to adjust for the substantial value of gathered-home consumed forest products, but it is worth noting that 94% of the rural population used wood as its source of cooking energy, most of which would be gathered.

Table II-34 contains one, very large, income item which is labeled "Non-Agricultural Family Enterprises", or purely non-agricultural business activities. The report does not indicate how many families were involved, as it does for the other income categories, so it is difficult to determine if the 16,955 FCFA/capita shown is indeed "representative". In the absence of better information on how this particular item is distributed across the sample, it is probably wise to exercise some caution in drawing conclusions. However, as the data stand and on a cash revenue basis, it would appear that approximately 80% of rural revenue is from non-agricultural sources. This is consistent with an observed tendency of the rural population to diversify its economic activities. However, this revenue is certainly skewed toward a few families. The data in Table II-34 show, for example, that many more rural families reported revenue from groundnuts and from gifts (remittances) than from any other source:

- over 45% of all rural households had groundnuts as a source of cash revenue;
- over 40% reported gifts/remittances as a source of revenue;
- just over 10% of the households had revenue from private salaries, from vegetables, and from "other" agricultural income.

Subsequent summary publications and analyses of this dataset will have to provide a more complete picture of how income is distributed within and across sources and occupations, and within and across the rural and urban populations.

Table II-34

Sources of CASH Revenue: Total Population, Rural Population, Urban Population (1990)

Source of Revenue	Total Population 7,303			Households 837,400		Rural Population 4,555			Households 482,500		Urban Population 2,951			Households 354,900	
	Revenue (Million FCFA)	Percent Total Revenu	Per capita Revenue (FCFA)	Number of Households	Percent of all Households	Revenue (Million FCFA)	Percent Total Revenu	Per capita Revenue (FCFA)	Number of Households	Percent of all Households	Revenue (Million FCFA)	Percent Total Revenu	Per capita Revenue (FCFA)	Number of Households	Percent of all Households
Groundnuts	25,930	3.9%	3,550	236,485	28.2%	25,087	13.2%	5,760	226,076	46.9%	842	0.2%	285	10,409	2.9%
Cotton	3,045	0.5%	417	32,034	3.8%	2,959	1.6%	679	30,721	6.4%	87	0.0%	30	1,313	0.4%
Millet	1,428	0.2%	196	32,952	3.9%	1,353	0.7%	311	41,783	8.7%	76	0.0%	26	1,170	0.3%
Rice	1,913	0.3%	262	9,369	1.1%	1,818	1.0%	418	8,573	1.8%	95	0.0%	32	796	0.2%
Maize	447	0.1%	61	8,403	1.0%	407	0.2%	94	7,967	1.7%	40	0.0%	13	437	0.1%
Vegetables	7,232	1.1%	990	58,752	7.0%	6,056	3.2%	1,391	53,679	11.1%	1,176	0.2%	398	5,056	1.4%
Mango	547	0.1%	75	20,164	2.4%	493	0.3%	113	18,841	3.9%	53	0.0%	18	1,323	0.4%
Oranges	207	0.0%	28	8,046	1.0%	206	0.1%	47	7,846	1.6%	1	0.0%	0	200	0.1%
Banana	77	0.0%	11	2,566	0.3%	58	0.0%	13	2,352	0.5%	19	0.0%	6	214	0.1%
Other Fruits	806	0.1%	110	7,880	0.9%	770	0.4%	177	7,455	1.5%	36	0.0%	12	426	0.1%
Gathered Products	652	0.1%	89	22,261	2.7%	581	0.3%	133	21,505	4.5%	71	0.0%	24	756	0.2%
Other Agric. Revenue	2,589	0.4%	354	54,829	6.5%	1,868	1.0%	429	50,854	10.5%	721	0.2%	244	3,975	1.1%
Source Agric. CASH ONLY	44,872	6.8%	6,144			41,657	22.0%	9,565			3,216	0.7%	1,090		
Non-Agric. Family Enterprises	217,202	32.9%	29,740			73,840	39.0%	16,955			143,364	30.4%	48,576		
Public Sector Salary	113,730	17.2%	15,572	71,787	8.6%	8,230	4.3%	1,890	8,015	1.7%	105,500	22.4%	35,747	63,771	18.0%
Private Sector Salary	141,800	21.5%	19,416	176,616	21.1%	16,404	8.7%	3,767	53,794	11.1%	125,400	26.6%	42,490	122,823	34.6%
Other Non-Agric Revenue	8,858	1.3%	1,213	48,436	5.8%	3,152	1.7%	724	28,880	6.0%	5,706	1.2%	1,933	19,556	5.5%
Rent	14,717	2.2%	2,015	68,743	8.2%	1,605	0.8%	368	26,504	5.5%	13,112	2.8%	4,443	40,239	11.3%
Gifts, etc.	70,081	10.6%	9,596	331,960	39.6%	34,918	18.4%	8,018	206,305	42.8%	35,164	7.5%	11,918	125,656	35.4%
Pensions, etc	41,151	6.2%	5,634	124,159	14.8%	6,362	3.4%	1,461	31,614	6.6%	34,789	7.4%	11,788	92,545	26.1%
Other, Non-specified	8,643	1.3%	1,183	70,137	8.4%	3,352	1.8%	770	43,033	8.9%	5,290	1.1%	1,793	27,104	7.6%
Total	661,055	100%	90,513			189,520	100%	43,517			471,541	100%	106,273		

Source "Enquete Sur Les Priorites", MEFP/DPS, Feb 1993, page 83

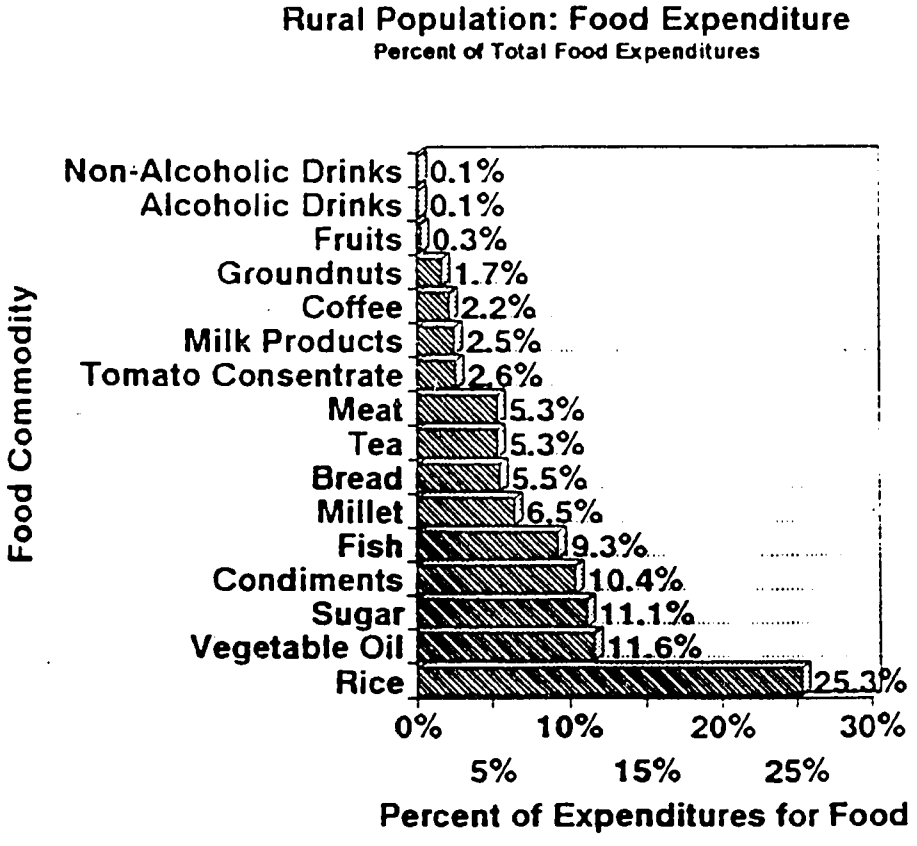
Household Expenditures

As with the revenue data, the expenditure data do not include the value of products produced and consumed at home. Table II-35 contains a summary of the monthly expenditure data for the total, urban and rural population.

In terms of cash expenditures, the rural population allocated approximately 59% of total expenditures to food and drinks, compared to the 41% which was allocated by the urban population. The largest single cash expenditure, on a per capita basis and for both the rural and urban populations, was for rice.

The rural population allocated over 25% of all expenditures for food to purchase rice, with the next highest shares going to vegetable oil and sugar (around 11% each)[33]. See Figure II-8.

Figure II-8



[33]High per capita spending on commodities such as sugar does not necessairly mean that consumption is especially high - because sugar may be purchased in very small quantities at a very high unit cost.

Table II-35

Monthly Expenditures: Total, Rural and Urban Populations

Monthly Expenditure	Total Population		7,303	Households	847,300
	Expended (Million FCFA)	Percent Total Expend	Per capita Spending (FCFA)	Number of Households	Percent of all Households
Rice	5,732	20.9%	785	664,441	79.3%
Fish	3,114	11.4%	426	678,481	81.0%
Condiments	3,068	11.2%	420	692,260	82.7%
Vegetable Oil	2,922	10.7%	400	667,338	79.7%
Sugar	2,351	8.6%	322	763,113	91.1%
Bread	2,267	8.3%	310	523,236	62.5%
Meat	2,126	7.8%	291	413,596	49.4%
Millet	1,276	4.7%	175	289,351	34.6%
Tea	1,089	4.0%	149	519,311	62.0%
Milk Products	987	3.6%	135	411,892	49.2%
Tomato Consentrate	946	3.4%	130	517,560	61.8%
Coffee	563	2.1%	77	406,048	48.5%
Groundnuts	455	1.7%	62	323,306	38.6%
Fruits	258	0.9%	35	105,989	12.7%
Non-Alcoholic Drinks	176	0.6%	24	90,861	10.9%
Alcoholic Drinks	97	0.4%	13	23,870	2.9%
Total Food	27,428	100%	3,756		
Soap	1,469	4.9%	201	804,392	96.1%
Charcoal	733	2.4%	100	337,556	40.3%
Wood (fuel)	259	0.9%	35	125,470	15.0%
Cooking Gas	400	1.3%	55	247,911	29.6%
Water	774	2.6%	106	327,927	39.2%
Electricity	1,183	3.9%	162	198,766	23.7%
Rent	2,587	8.5%	354	147,981	17.7%
Lighting	500	1.7%	68	595,202	71.1%
Hygine	409	1.3%	56	307,764	36.8%
Cola	489	1.6%	67	427,816	51.1%
Cigarette	684	2.3%	94	222,381	27.1%
Leasure	246	0.8%	34	56,738	6.8%
Domestic	1,015	3.4%	139	101,272	12.1%
Equipment	461	1.5%	63	138,815	16.6%
Clothinng	3,611	11.9%	494	364,097	43.5%
Cosmetic	689	2.3%	94	345,963	41.2%
Vehicles	1,920	6.3%	263	42,331	5.1%
Gifts	2,996	9.9%	410	134,854	16.1%
Telephone	398	1.3%	55	44,850	5.4%
Transport	1,753	5.8%	240	385,362	46.0%
Health	2,874	9.5%	394	464,371	55.5%
Ceremonies	2,252	7.4%	308	303,185	36.2%
Entertainment	1,452	4.8%	199	19,800	2.4%
Other	1,119	3.7%	153	104,025	12.4%
Total Non-Food	30,272	100%	4,145		
Total	57,701		7,901		

Monthly Expenditure	Rural Population		4,765	Households	462,500
	Expended (Million FCFA)	Percent Total Expend	Per capita Spending (FCFA)	Number of Households	Percent of all Households
Rice	2,802	25.3%	643	366,524	79.0%
Fish	1,031	9.3%	237	407,548	87.8%
Condiments	1,149	10.4%	264	416,981	89.8%
Vegetable Oil	1,282	11.6%	294	375,392	80.8%
Sugar	1,231	11.1%	283	410,332	88.7%
Bread	609	5.5%	140	226,408	48.9%
Meat	585	5.3%	134	190,788	41.2%
Millet	721	6.5%	166	111,446	24.1%
Tea	587	5.3%	135	306,565	66.3%
Milk Products	239	2.2%	64	169,652	36.7%
Tomato Consentrate	290	2.6%	67	248,255	53.7%
Coffee	243	2.2%	56	200,385	43.3%
Groundnuts	187	1.7%	43	106,301	23.0%
Fruits	32	0.3%	7	23,092	5.0%
Non-Alcoholic Drinks	12	0.1%	3	10,659	2.3%
Alcoholic Drinks	16	0.1%	4	9,070	1.9%
Total Food	11,055	100%	2,538		
Soap	631	9.5%	145	460,168	99.4%
Charcoal	76	1.2%	18	64,622	13.9%
Wood (fuel)	138	2.1%	32	71,612	15.4%
Cooking Gas	42	0.6%	10	43,269	9.3%
Water	71	1.1%	16	75,269	16.3%
Electricity	29	0.4%	7	10,038	2.2%
Rent	44	0.7%	10	9,434	2.0%
Lighting	298	4.5%	68	403,522	87.2%
Hygine	108	1.6%	25	135,000	29.2%
Cola	324	4.9%	75	283,631	61.3%
Cigarette	228	3.4%	52	123,522	26.7%
Leasure	9	0.1%	2	4,155	0.9%
Domestic	25	0.4%	6	5,168	1.1%
Equipment	187	2.8%	43	80,873	17.5%
Clothinng	985	14.9%	208	193,562	41.8%
Cosmetic	179	2.7%	41	164,045	35.4%
Vehicles	242	3.7%	56	9,350	2.0%
Gifts	492	7.4%	113	43,234	9.3%
Telephone	19	0.3%	4	6,798	1.5%
Transport	466	7.0%	107	175,058	37.8%
Health	875	13.2%	201	238,739	51.6%
Ceremonies	743	11.2%	171	177,007	38.3%
Entertainment	130	2.0%	30	8,648	1.9%
Other	355	5.4%	81	55,889	12.1%
Total Non-Food	6,618	100%	1,519		
Total	17,672		4,058		

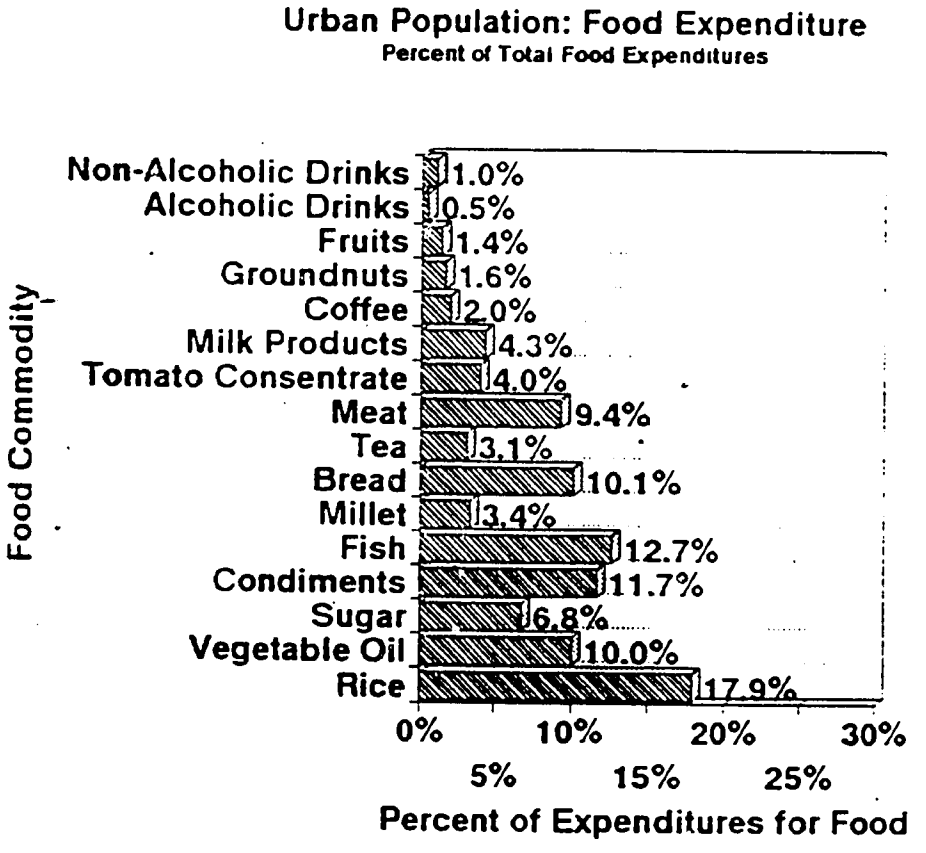
Monthly Expenditure	Urban Population		2,538	Households	384,800
	Expended (Million FCFA)	Percent Total Expend	Per capita Spending (FCFA)	Number of Households	Percent of all Households
Rice	2,930	17.9%	993	297,917	83.9%
Fish	2,083	12.7%	706	270,933	76.3%
Condiments	1,920	11.7%	650	275,279	77.6%
Vegetable Oil	1,640	10.0%	556	291,986	82.3%
Sugar	1,120	6.8%	379	322,811	91.0%
Bread	1,658	10.1%	562	296,828	83.6%
Meat	1,541	9.4%	522	222,608	62.8%
Millet	555	3.4%	188	177,908	50.1%
Tea	503	3.1%	170	212,749	59.9%
Milk Products	709	4.3%	240	242,240	68.3%
Tomato Consentrate	656	4.0%	222	269,305	75.9%
Coffee	320	2.0%	108	205,663	57.9%
Groundnuts	268	1.6%	91	217,005	61.1%
Fruits	226	1.4%	77	82,897	23.4%
Non-Alcoholic Drinks	164	1.0%	56	80,202	22.6%
Alcoholic Drinks	81	0.5%	27	14,800	4.2%
Total Food	16,373	100%	5,548		
Soap	838	3.5%	284	344,224	97.0%
Charcoal	657	2.8%	223	272,934	76.9%
Wood (fuel)	121	0.5%	41	53,858	15.2%
Cooking Gas	358	1.5%	121	204,142	57.5%
Water	703	3.0%	238	252,658	71.2%
Electricity	1,154	4.9%	391	188,658	53.2%
Rent	2,543	10.8%	862	138,547	39.0%
Lighting	204	0.9%	69	191,430	53.9%
Hygine	300	1.3%	102	172,264	48.5%
Cola	164	0.7%	56	144,185	40.6%
Cigarette	456	1.9%	154	98,632	27.8%
Leasure	237	1.0%	80	52,583	14.8%
Domestic	989	4.2%	335	96,104	27.1%
Equipment	271	1.1%	92	57,942	16.3%
Clothinng	2,706	11.4%	917	170,535	48.1%
Cosmetic	510	2.2%	173	181,018	51.0%
Vehicles	1,678	7.1%	569	32,981	9.3%
Gifts	2,504	10.6%	848	91,620	25.8%
Telephone	379	1.6%	129	36,052	10.2%
Transport	1,287	5.4%	436	210,304	59.3%
Health	1,999	8.5%	677	215,632	60.8%
Ceremonies	1,509	6.4%	511	126,178	35.6%
Entertainment	1,321	5.6%	448	11,152	3.1%
Other	765	3.2%	259	48,136	13.6%
Total Non-Food	23,655	100%	8,015		
Total	40,028		13,563		

Source: "Enquete Sur Les Priorites", MEFP DPS, Feb 1993, pages 84-85

Rural monthly expenditures for rice (643 FCFA/capita) implies an annual consumption of 57 kg per person[34], which is consistent with the consumption data shown in Table II-32. This also suggests that rural per capita consumption has continued to increase (i.e. from 51 kg in 1984 to over 57 kg in 1991).

The urban population allocated about 18% of total spending on food to rice (993 FCFA/capita), with the next largest shares going to vegetable oil, fish, condiments and bread (See Figure II-9). This level of spending implies a per capita consumption at home of 88 kg/year. If annual urban consumption is 110 kg/capita, then each urban person consumes approximately 22 kg away from home, which is entirely feasible, given the very high portion of rice based meals consumed at lunch by the urban population (Table II-20).

Figure II-9



[34]Using an average retail price of 135 FCFA/kg.

This data should eventually provide an important source of information about such parameters as income and expenditure elasticities, especially by urban/rural and income categories. As with detailed analyses of income distributions, there is much more analysis to be done.

The Delgado Time Series Study[35]

Delgado used a constructed set of time-series data on prices and disappearance (approximately consumption) and the Almost Ideal Demand System (AIDS) methodology to estimate price elasticities for major cereals. The analysis combines millet/sorghum/maize to a single commodity and treats rice and wheat separately. The income variable is per capita GDP and prices are retail level in Dakar. A composite "non-cereal" commodity is constructed to close the consumption system. The data has been constructed so that it is internally consistent, and the usual restrictions (derived from consumption theory) are imposed. The elasticities are presented as the "compensated elasticities" as needed in order to discuss the substitution issue. The elasticity estimates are shown in Table II-36, below.

Before discussing Delgado's results, several points need to be made. As Delgado mentions, the use of per capita GDP as the income variable may not be appropriate because it is concentrated in the urban sector. That is, the income variable may not adequately represent the income which the "average" consumer must allocate between consumption items. This may not be to serious for rice, which is largely (but not exclusively) an urban good, but it may be for local cereals, which are primarily rural goods, most of which is consumed on the farm. There is no easy way around this problem, except to develop separate urban and rural analyses. This is why the kinds of data being collected by the ISRA/IFPRI Price Policy Project and by the IDA Senegal River Valley Monitoring Project are so relevant.

A second issue is the relative constancy of rice prices over time (the GOS maintained official prices for both cereal and rice prices until 1988 and rice prices are still controlled). While there was still considerable price variation around the official prices, the variation was mostly in local cereal prices, because the GOS was unable to effectively control these prices. Rice prices were more carefully controlled, partially because the State was active in rice distribution (Figure II-10).[36]

Figure II-10 suggests that there may also be a question about serial correlation and "multi-collinearity". Serial correlation (i.e. that the present value of a variable is highly correlated with past values - really the residuals) causes the variances used to test the significance of coefficients to be under-estimated, with a risk that a researcher will accept a hypothesis that a coefficient is non-zero when it is, in fact, not significantly different from zero. The paper does not say if either of these conditions exist or, if so, what measures were taken to adjust for them[37]. Multi-collinearity (i.e. the price and/or income variables are highly correlated with one-another) is a much more serious matter than autocorrelation, because it

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[35] Delgado and Reardon (1992)

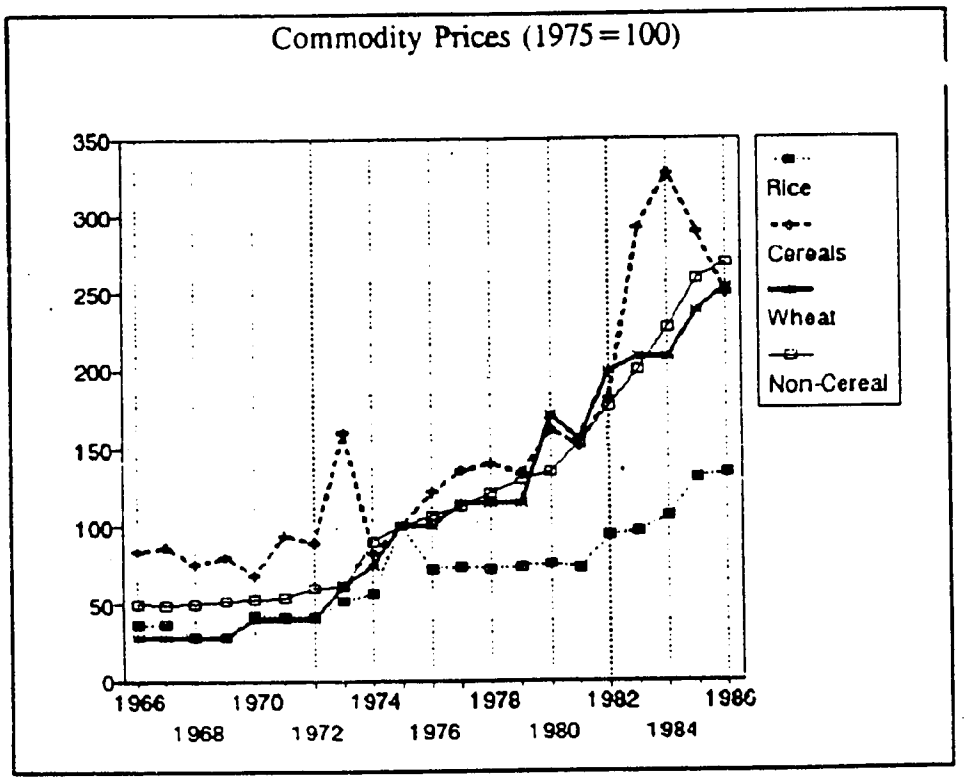
[36] These data were kindly provided by Delgado.

[37] Autocorrelation may indicate that a different "model" is more appropriate. In the context of this analysis, this might be a habit or partial adjustment framework (especially true if the data represent consumers who are not in equilibrium).

means that the parameter estimates will be sensitive to extremes in the data, and that the variances used to test for significance will be large. Cereal prices in 1973 and rice prices in 1975 are an example of such an extreme in the data (Figure II-9)[38].

Figure II-10

Senegal: Wheat, Rice, Local Cereal and Non-Cereal Prices 1966-1986



[38]The existence of multi-collinearity also makes it very difficult to test specific coefficients. In the presence of multi-collinearity it is not unusual for a separate test of two coefficients to indicate that neither is different from zero, while a joint test (that they are both equal to zero) is rejected. Unless the appropriate econometric techniques are used and supporting data presented, these kinds of problem require that conclusions based on tests of significance be questioned - otherwise sound conclusions about "substitution" between commodities cannot be accepted. Delgado does not discuss the statistical character of the data used in the analysis. The question with economic data is not if multi-collinearity exists, but how great it may be. Since this is a sample problem, it should be analyzed and a discussion should be part of the presentation. The question about outliers is warranted, as well, because price data, especially, are collected at discrete times and an oddity which is not representative of the actual data may unduly influence the analysis.

Table II-36 contains the elasticities extracted from the Delgado paper (together with some from other sources). The homogeneity restriction was used to complete the 'Non-Cereals" column, which was not show in the paper[39].

Table II-36

Compensated Price Elasticities From the Delgado Study

Compensated Price Elasticities (Long-term) from Delgado						Other Sources	
Consumption Item	Millet/ Sorghum/ Maize	Rice	Wheat	Non-Cereals	Income (per capita GDP)	Income (Ross-1977 Dakar)	Income (GOS/MI/DAT 1980?)
Non-Cereal Commodity	-0.001	0.038	-0.011	-.025	1.202		
Millet/Sorghum/Maize	-0.106	0.156(n)	-0.034	0.016	-0.120	ns	-0.2 millet 0.3 Maize
Rice	0.157(n)	-0.639	0.009	0.472	-0.162	0.12	0.4
Wheat	-0.071	0.019	0.347	-0.296	0.494		0.7

Source: Delgado, 1992, and supplementary material provided by the author.
(n) Not statistically significant at the 10% level.
Delgado used the AIDS methodology, with homogeneity imposed.
Estimation is for the period 1966-1986. Income is per capita GDP. Prices are retail in Dakar; Consumption is disappearance.

Given Delgado's estimates:

- The compensated direct price elasticity of wheat is positive (+0.35), which would argue for a concave indifference curve - this is not admissible in the standard theory of consumer behavior.

- Local cereals (millet/sorghum/maize) are an inferior good (the income elasticity is less than zero) - but so is rice - and millet consumption is more income responsive than rice consumption. That is, an increase in income will reduce consumption of both types of grain but consumption of local cereals will be affected more than rice.

- There is an indication that rice is a substitute for local cereals, but the coefficient in the equation is judged not significantly different from zero at the 10% level[40].

- Rice is a substitute for wheat, but the rate of substitution is very low.

[39] See Annex II for a summary of the relevant "restrictions".

[40] Even ignoring the "problems" already discussed, it would be interesting to know at what level the parameter would become "significant. There is nothing sacred about 10%, or 15%, or even 40%. It has been argued that relatively wide confidence ranges should be accepted, especially for this kind of analysis.

- The direct price elasticities for local cereals and rice are negative and significant. However, rice consumption is six times more responsive to its own price than local cereals are to their own price.

In view of the concerns about the structure of the data and the implications for parameter estimates and tests of significance, these relationships should be accepted with caution. There is also an additional, mechanical, question about the tests of significance. The AIDS methodology produces a number of parameters which indicate the amount of change in the budget share induced by a change in prices and income. These parameters are then used to derive the elasticities. It is worth noting:

(1) the derived elasticities are a function of nearly all of the individual parameters in a given commodity's equation;

(2) tests of significance are applied to the individual parameters and, in view of (1), conclusions about the significance of derived elasticities are only approximate.

(3) in the presence of high multi-collinearity, tests of individual parameters are suspect. But, a test of the entire functional relationship is still valid. The argument is that as long as the relationship between the explanatory variables can be expected to continue, then the entire function can be accepted as representative of the structure it is meant to explain. The parameter estimates are obtained under fairly sever restrictions (homogeneity, symmetry, etc) which are meant to be the best estimates, given the restrictions and the data. Insisting on a "tight" confidence band for a single parameter may not be warranted.

Delgado kindly provided USAID/Senegal with the price, budget share and income data he used for the preceding analysis, so it has been possible to investigate an alternative formulation. (The data are listed in Tables II-38 and II-39 at the end of this section.)

- First, it is necessary to "normalize" on one of the commodities before the system's parameters can be estimated. Delgado normalized on the wheat commodity. The revised model is normalized on the non-cereal commodity, which permits a direct test of all of the parameters in the grain equations. The results are not invariant with respect to the choice of the excluded variable, so the new parameter estimates will not be exactly the same as those obtained by Delgado.

- From Figure II-9, there is an "outlier" in the local cereal price in 1973 and one for rice in 1975. The "spike" in the rice price was the result of a temporary increase, which was removed in the following year. The cereal price has the appearance of a data error, but it may not be, because total cereal production was 230,000 tons lower in 1972/73 than it was in 1971/72. Imports increased in 1973, but total supply was still down by 140,000 tons. The question is, how have these outliers influenced the parameter estimates? This will be investigated by introducing dummy variables for the two years with "price spikes".

- Wheat is something of a special case: it is not produced in Senegal; it is highly integrated (virtually one individual's monopoly); Senegal receives considerable amounts of wheat as food aid; bread is primarily an urban good; and, the price is fixed by decree (as is the price of broken rice).

  - One option for treating some of the non-price and non-income influences on wheat demand is to introduce the urban percentage of total population into the model. Delgado used this approach, but the "% urban" coefficient was not significantly different from zero in any of the equations. Table II-37(A) shows the coefficients for the "% urban" variable when the system is normalized on the non-cereal commodity - it is significantly different from zero in only the rice equation and the problem with the direct price elasticity still exists.

  - A second option for treating the effects of non-price behavior is to introduce a trend variable in the equation (which is actually not unlike introducing the population variable). The revised model shown in Table II-37(B) uses this approach, but only for the wheat budget share equation (it was not introduced into the other equations to avoid excessive data "mining").

The basic AIDS model for these analyses is:

$$W_i = \alpha_i + \Sigma_{j=1,n-1} \Phi_{i,j} \ln(P_j/P_n) + \beta_i \ln(Y/P^*), \; i = 1, n-1.$$

Where W_i is the budget share; $\ln(P^*) = \Sigma_{i=1,n} W_i \ln(P_i)$ is the usual Stone price index; P_i's are prices for the commodities (price index with 1975=100); and Y is per capita income (per capita GDP). It should be noted that the Stone price index uses current budget shares as weights, which introduces a slight problem because the dependent variables end up being on both sides of the equations. One solution to the problem is to used lagged shares as weights. This was ignored (as it usually is) because either approach produces nearly the same parameter estimates.

To insure that estimated budget shares add to one:

$$\alpha_n = 1-\Sigma_{i=1,n-1} \alpha_i; \; \beta_n = -\Sigma_{i=1,n-1} \beta_i, \; i=1,n-1; \; \Phi_{n,j} = -\Sigma_{i=1,n-1} \Phi_{i,j}, \; j=1,n-1.$$

Homogeneity is imposed by normalizing on commodity "n", so that:

$$\Phi_{i,n} = -\Sigma_{j=1,n-1} \Phi_{i,j}, \; i=1,n-1.$$

The AIDS model requires symmetry ($\Phi_{i,j} = \Phi_{j,i}$), which is imposed during estimation.

The revised model was constructed by introducing a quadratic trend component to the wheat function, and by introducing two dummy variables: one for the local cereal price spike

in 1973; and, one for the rice price spike in 1975[41]. The quadratic trend variable is used so that the non-price effects can dampen through time. This variable was also constructed so that it is zero in 1986, -1 in 1985, -2 in 1984, etc. This was done primarily to simplify the calculation of the elasticities. All estimates were corrected for serial correlation (although only the wheat function exhibited any significant serial correlation). The revised model is constructed by defining:

$$\alpha^*_i = \alpha_i + \Sigma_{j=1,m} \phi_{i,j} Z_{i,j}, \; i=1,n.$$

Where the Z's are time, time squared, and the two dummy variables (the "% urban variable in Delgado's system also falls into this category).

The adding-up criteria is satisfied if the sum of all α's is equal to one and the sum of all ϕ's is equal to zero. This is imposed through the normalized commodity. The constant terms do not enter into calculation of the elasticities, so they can be ignored[42]. The consequences of introducing these variables into the model are shown in Tables II-37 A and B, below.

The basic model (Table II-37 A) has highly significant coefficients on all variables except the income and % urban variables in the wheat equation. The compensated elasticities (calculated at 1986 values) are still questionable, because the compensated direct-price elasticity for wheat is still positive.

The revised model (Table II-37 B) has significant coefficients on all price and income variables. The dummy and trend variables are somewhat less significant but there are substantial changes in the parameter values, especially on the income variable in the wheat equation, and:

- the compensated direct-price elasticities are all negative;

- the compensated cross-price elasticities between rice and local cereals are positive, indicating that rice and local cereals <u>are</u> substitutes but the rate of substitution is low (a 10% increase in the price of rice will cause a 2.9% increase in local cereal consumption-after compensating for the income effect);

- the compensated cross-price elasticities between wheat and the other two cereals are negative, indicating that they are compliments (i.e. consumed together, which is not unreasonable);

- all of the compensated price elasticities are low, as suggested by the preceding reviews, especially if one considers this analysis as a weighing of extremely low urban elasticities and more elastic rural price responses; and

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[41] The introduction of these dummy variables is equivalent to eliminating them from the analysis.

[42] Elasticities are calculated according to the procedure developed by Greene and Alston (1990, 1991). Obviously, the constant terms cannot be ignored when forecasting budget shares.

- the income elasticities are all positive (much different than those published by Delgado), but are still in the range of what other researchers have found.

However, the validity of this system is still questionable because some of the compensated direct-price elasticities are still positive when they are calculated at other data points (including the sample means). One problem, as already discussed, is that the income variable is dominated by the urban sector. In fact, the sum of the expenditure shares in 1969 (15.3%) is almost exactly equal to the weight used for cereals in the Dakar consumer p[rice index (15.4%), while rural expenditure share for cereals is much higher (75% in the Senegal River Valley, for example). That is, the results are probably more applicable to the urban sector than they are to total national consumption.

Table II-37 A and B

A. Delgado Data: Base Model Corrected for Serial Correlation

Constrained Estimation

Equation Adj. R-Sq	WHEAT SHARE 93.9 Coef.	Prob.	RICE SHARE 54.5 Coef.	Prob.	CEREAL SHARE 75.8 Coef.	Prob.
Constant	0.038081	(0)	0.124410	(0)	0.083093	(0)
WHEAT	0.045794	(0)	-0.005364	(8)	-0.005144	(4)
RICE	-0.005364	(8)	0.044083	(0)	0.009418	(5)
CEREAL	-0.005144	(4)	0.009418	(5)	0.062856	(0)
INCOME	0.000106	(94)	-0.021464	(0)	-0.015057	(0)

Prob. = level of significance

Uncompensated Elasticities (1986 values)

ITEM	WHEAT	RICE	CEREAL	OTHER	Income
WHEAT	0.14474	-0.13421	-0.12872	-0.88442	1.00261
RICE	-0.05957	-0.39995	0.13986	-0.39871	0.71838
CEREAL	-0.07282	0.16232	0.02593	-0.87644	0.76102
OTHER	-0.04472	-0.06039	-0.08378	-0.85465	1.04354
SHARES	0.040	0.075	0.062	0.823	
MEANS	258.000	133.000	248.000	268.000	581.000

Calculated according to Greene and Alston (1990,1991)

Compensated Elasticities (1986 values)

ITEM	WHEAT	RICE	CEREAL	OTHER	Income
WHEAT	0.18484	-0.05901	-0.06656	-0.05927	1.00261
RICE	-0.03084	-0.34607	0.18440	0.19251	0.71838
CEREAL	-0.04238	0.21939	0.07311	-0.25012	0.76102
OTHER	-0.00298	0.01788	-0.01908	0.00418	1.04354
SHARES	0.040	0.075	0.062	0.823	
MEANS	258.000	133.000	248.000	268.000	581.000

Calculated according to Greene and Alston (1990,1991)

B. Delgado Data: With Trend and Dummies, Corrected for Serial Correlation

Constrained Estimation

Equation Adj. R-Sq	WHEAT SHARE 92.2 Coef.	Prob.	RICE SHARE 62.7 Coef.	Prob.	CEREAL SHARE 84.8 Coef.	Prob.
Constant	-91.856000	(24)	0.134250	(0)	0.085419	(0)
DMMS	0.005338	(13)	-0.018491	(1)	0.031151	(0)
DRICE	0.005806	(11)	-0.009690	(18)	0.000985	(86)
TIME	0.092023	(25)	--		--	
TIME2	-0.000023	(25)	--		--	
WHEAT	0.036955	(0)	-0.005677	(15)	-0.006988	(3)
RICE	-0.005677	(15)	0.055462	(0)	0.014010	(1)
CEREAL	-0.006988	(3)	0.014010	(1)	0.038934	(0)
INCOME	0.006782	(3)	-0.023756	(0)	-0.012955	(0)

Prob. = level of significance

Uncompensated Elasticities (1986 value)

ITEM	WHEAT	RICE	CEREAL	OTHER	Income
WHEAT	-0.08331	-0.14780	-0.18293	-0.75262	1.16665
RICE	-0.06227	-0.24953	0.20219	-0.57906	0.68867
CEREAL	-0.10385	0.23321	-0.36188	-0.56210	0.79462
OTHER	-0.03106	-0.07878	-0.05761	-0.86831	1.03574
SHARES	0.040	0.075	0.062	0.823	
MEANS	258.000	133.000	248.000	268.000	581.000

Calculated according to Greene and Alston (1990,1991)

Compensated Elasticities (1986 values)

ITEM	WHEAT	RICE	CEREAL	OTHER	Income
WHEAT	-0.03664	-0.06030	-0.11059	0.20754	1.16665
RICE	-0.03472	-0.19788	0.24489	-0.01229	0.68867
CEREAL	-0.07206	0.29281	-0.31261	0.09187	0.79462
OTHER	0.01037	-0.00110	0.00661	-0.01589	1.03574
SHARES	0.040	0.075	0.062	0.823	
MEANS	258.000	133.000	248.000	268.000	581.000

Calculated according to Greene and Alston (1990,1991)

Conclusions

In light of the various possible problems with the data and the tests of significance, an argument supporting the existence of "substitutability" between local cereals and rice is not invalid. The substitution effect for consumers in urban centers may be low, as suggested by the meal-time-cereals-mix, and it may be largely income related. The income elasticities for local cereals and rice are low and different analyses show them variously as negative and positive. Delgado's results indicate that both are inferior goods (consumption decreases as income increases), but others based on cross-sectional studies find at least the rice income elasticity to be positive - but inelastic. The revised model discussed above indicates that rice and millet are substitutes and that all income elasticities are positive (and inelastic for local cereals and rice).

Table II-38. Delgado's Budget Share Data for Senegal

TIME	S_WHT	S_RICE	S_MMS	S_NONC	PURB	dmms	drice
1966	0.01058	0.06888	0.07316	0.84737	28.8	0	0
1967	0.01122	0.06642	0.07401	0.84836	29.5	0	0
1968	0.00941	0.04718	0.05820	0.88521	30.2	0	0
1969	0.01585	0.03926	0.06977	0.87511	31.0	0	0
1970	0.02309	0.06122	0.05774	0.85795	31.1	0	0
1971	0.02407	0.06064	0.07261	0.84268	31.2	0	0
1972	0.02415	0.06782	0.05673	0.85130	31.2	0	0
1973	0.03490	0.06299	0.11980	0.78231	31.3	1	0
1974	0.03731	0.06102	0.05975	0.84192	31.4	0	0
1975	0.04012	0.08258	0.06429	0.81300	31.5	0	1
1976	0.03288	0.06152	0.06337	0.84224	31.5	0	0
1977	0.04158	0.08273	0.06634	0.80936	31.5	0	0
1978	0.03818	0.07286	0.06740	0.82156	31.6	0	0
1979	0.03471	0.07119	0.05453	0.83956	31.7	0	0
1980	0.05358	0.07150	0.06228	0.81263	31.7	0	0
1981	0.04387	0.06127	0.04929	0.84557	32.0	0	0
1982	0.04276	0.06592	0.05078	0.84053	32.4	0	0
1983	0.03922	0.07023	0.06944	0.82111	32.7	0	0
1984	0.04058	0.07639	0.07990	0.80313	33.1	0	0
1985	0.03446	0.07080	0.07894	0.81580	34.0	0	0
1986	0.04049	0.07507	0.06201	0.82243	34.4	0	0

Table II-39. Delgado's Price and Income Data for Senegal (natural logs)

TIME	LP_WHT	LP_RICE	LP_MMS	LP_NONC	LP_ALL	L_CAPY	LD_CAPY
1966	3.35995	3.60781	4.43609	3.92185	3.93189	6.58736	2.65547
1967	3.35995	3.60781	4.46207	3.90550	3.92080	6.60162	2.68082
1968	3.35995	3.35650	4.32487	3.92814	3.91892	6.70429	2.78537
1969	3.35995	3.35650	4.38203	3.95245	3.94963	6.64166	2.69203
1970	3.71135	3.77144	4.23249	3.97426	3.97069	6.63216	2.66147
1971	3.71135	3.73297	4.53618	3.97749	3.99682	6.63054	2.63372
1972	3.71135	3.73297	4.48739	4.10556	4.09244	6.56349	2.47105
1973	4.12909	3.96003	5.07517	4.10945	4.46298	6.48368	2.36303
1974	4.30734	4.03526	4.40943	4.50465	4.46296	6.33090	1.86795
1975	4.60517	4.60517	4.60517	4.60517	4.60517	6.38340	1.77823
1976	4.60517	4.27849	4.80584	4.66672	4.64963	6.48358	1.83395
1977	4.74625	4.30096	4.90938	4.72390	4.70214	6.40960	1.70745
1978	4.74625	4.27849	4.94164	4.79462	4.76507	6.39835	1.63328
1979	4.74625	4.30096	4.89285	4.86775	4.82455	6.47143	1.64687
1980	5.14290	4.33375	5.08897	4.90315	4.88685	6.47440	1.58755
1981	5.04538	4.28979	5.01802	5.03693	4.99059	6.45758	1.46699
1982	5.29452	4.53735	5.20523	5.17365	5.13847	6.48076	1.34228
1983	5.33914	4.57183	5.67371	5.29933	5.27580	6.40490	1.12911
1984	5.33914	4.66868	5.78894	5.42614	5.39373	6.29457	0.90084
1985	5.47176	4.87632	5.66604	5.55586	5.51354	6.34249	0.82894
1986	5.53351	4.89490	5.51701	5.59269	5.53322	6.36468	0.83146

Definitions:
WHT = WHEAT; RICE = RICE; MMS = MILLET+MAIZE+SORGHUM; NONC=ALL OTHER; ALL = STONE PRICE INDEX;
L_CAPY = NATURAL LOG OF PER CAPITA INCOME; LD_CAPY = LOG OF PER CAPITA INCOME DIVIDED BY STONE INDEX;
PURB = URBAN PERCENT OF NATIONAL POPULATION.

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ANNEX 10

Non-Project Assistance Benefit-Cost Analysis: The Senegal Rice Sector Reform Program

Subject to assumptions about actual levels of savings from the elimination of subsidies and more efficient processing, and depending on the rate at which resources are reallocated to more sustainable economic uses, the internal rate of return (IRR) for a $30 million Senegal Rice Sector Reform Program varies from 15 percent to over 100 percent, with a conservative, most probable IRR of 33 percent -- over a ten year horizon. This range of IRR's is from separate calculations for four cases, with one for direct benefits (that is subsidy savings, gains in processing efficiency) and one for direct benefits plus gains from reallocation of domestic resources. They are summarized in Table 1.

Table 1. Alternative IRR's for the Senegal Rice Sector Reform Program

Case	Direct Benefits	Direct Plus Resource Reallocation Benefits
Case 1: 100% of subsidy and processing cost savings induced by the Program are true efficiency gains and 5% of 25 billion FCFA in misallocated resources is recovered annually, beginning in year three of the Program.	89%	109%
Case 2: 75% of subsidy and processing cost savings induced by the Program are true efficiency gains and 5% of 25 billion FCFA in misallocated resources is recovered annually, beginning in year three of the Program.	43%	61%
Case 3 (base): Two-thirds of subsidy and processing cost savings induced by the Program are true efficiency gains and 5% of 25 billion FCFA in misallocated resources is recovered annually, beginning in year three of the Program.	33%	51%
Case 4: Case 3 plus a 40% FCFA devaluation - this case is approximate because the calculations do not account for devaluation-induced changes in the value of misallocated resources or processing costs. This case is included to provide an outer bound on the implications of a FCFA devaluation. As would be expected, the results show that a concerted effort should be made to recapture misallocated resources.	15%	29%
Source: Annex 10.1-10.4		

These IRR's are based on information developed in Annex 9, and are calculated under alternative assumptions about the proportion of major costs and benefits which will accrue to various winners and losers.

Winners: Producers (after third year)
Successful Private Millers

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Artisanal Rice Hullers
Wholesale and Retail Marketers of Rice
Transporters (except those tied in to the CPSP)
Consumers (in time when margins are reduced)
"Government" of Senegal via reduced budget pressure

Losers: SAED and CPSP employees dismissed
Producers (in initial years)
Merchants with connections to CPSP
Transporters with connections to CPSP
Consumers (in short term when subsidies are removed)
Other recipients of economic rents through the administered rice distribution system

Explicit costs and benefits have not been included for all of the potential winners and losers -- only the major factors are included (see Tables 10.1-10.4, which follow). The excluded elements are not insignificant, but are expected to net positive to near zero, and, thus would not have a significant influence on the final IRR for the program. The most important variables in the analysis are program cost and the rate at which misallocated resources are reclaimed for economically sustainable uses. Even a modest change in rate of recovery of misallocate resources increases the IRR's enormously, which is why the calculations in the following tables hold this recovery rate at only 5%. That is, the IRR's reported here are truly minimum estimates.

As discussed in Annex 9, it can be expected that farm and consumer prices will vary over the period of this program -- this has not been included in the analysis. It is not expected that these changes will be very large in the initial stages of the program, and, since the eventual outcome will be lower rather than higher consumer prices and possibly slightly higher farm prices (relative to the without program case) the net would be a slightly higher potential gain from reallocated resources, and a slightly higher IRR.

Annex 10.1 Internal Rate of Return Calculations for the Senegal Rice Sector Adjustment Program: Case 1

Assumptions		
Discount rate:.....	15.0%	(a1)
Exchange rate FCFA/$:	280	(a2)
Percent of transport subsidy saved:.....	100.0%	(a3)
Percent of Processing cost saved:.....	100.0%	(a4)
Percent of SAED subsidy saved:	100.0%	(a5)
Misallocated Resource (Mil. FCFA):.....	25,000	(a6)

Internal Rate of Return Direct Benefits		
5 year	IRR	69.9%
6 year	IRR	80.6%
8 year	IRR	87.4%
10 year	IRR	89.1%

Internal Rate of Return Direct Plus Indirect Benefits		
5 year	IRR	92.0%
6 year	IRR	102.0%
8 year	IRR	107.8%
10 year	IRR	109.0%

Year	Direct Program Benefits								Direct Program Benefits ($)	Improved Resource Use			Total Benefits ($)
	Eliminate Transport Subsidy (FCFA)	Reduced Milling Cost (FCFA)	Reduced Subsidy to SAED (FCFA)	Total Gross (FCFA)	Adjusted Total (FCFA)	Adjusted Total ($)	Cost Grant ($)	Cost Project ($)		Resource Recovery (%)	(FCFA)	($)	
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)
1	380	300	1,100	1,780	1,780	6.357	8.0	0.592	-2.235	0.0%	0	0.000	-2.235
2	766	300	1,400	2,466	2,466	8.807	10.0	0.357	-1.550	0.0%	0	0.000	-1.550
3	766	300	1,800	2,866	2,866	10.236	10.0	0.381	-0.145	0.0%	0	0.000	-0.145
4	766	300	1,800	2,866	2,866	10.236	0.0	0.436	9.800	5.0%	1,250	4.464	14.264
5	766	300	1,800	2,866	2,866	10.236	0.0	0.234	10.002	5.0%	1,250	4.464	14.466
6	766	300	1,800	2,866	2,866	10.236	0.0	0	10.236	5.0%	1,250	4.464	14.700
7	766	300	1,800	2,866	2,866	10.236	0.0	0	10.236	5.0%	1,250	4.464	14.700
8	766	300	1,800	2,866	2,866	10.236	0.0	0	10.236	5.0%	1,250	4.464	14.700
9	766	300	1,800	2,866	2,866	10.236	0.0	0	10.236	5.0%	1,250	4.464	14.700
10	766	300	1,800	2,866	2,866	10.236	0.0	0	10.236	5.0%	1,250	4.464	14.700

Notes: A, B and C are taken from Annex 9; D = A + B + C.

E = a3*A + a4*B + a5*C.

F = E/a2.

G and H are from the logframe.

I = F - (G + H)

K = a6*J

L = L/a2

M = I + L

Annex 10.2

Internal Rate of Return Calculations for the Senegal Rice Sector Adjustment Program: Case 2

Assumptions		
Discount rate:.....	15.0%	(a1)
Exchange rate FCFA/$:	280	(a2)
Percent of transport subsidy saved:.....	75.0%	(a3)
Percent of Processing cost saved:.....	75.0%	(a4)
Percent of SAED subsidy saved:	75.0%	(a5)
Misallocated Resource (Mil. FCFA):.....	25,000	(a6)

Internal Rate of Return Direct Benefits		
5 year	IRR	14.5%
6 year	IRR	28.3%
8 year	IRR	39.4%
10 year	IRR	43.2%

Internal Rate of Return Direct Plus Indirect Benefits		
5 year	IRR	36.6%
6 year	IRR	49.3%
8 year	IRR	58.6%
10 year	IRR	61.4%

Year	Direct Program Benefits								Direct Program Benefits ($)	Improved Resource Use			Total Benefits ($)
	Eliminate Transport Subsidy (FCFA)	Reduced Milling Cost (FCFA)	Reduced Subsidy to SAED (FCFA)	Total Gross (FCFA)	Adjusted Total (FCFA)	Adjusted Total ($)	Cost Grant ($)	Cost Project ($)		Resource Recovery (%)	(FCFA)	($)	
	(A)	(B)	(C)	(D)	(E)		(G)	(H)	(I)	(J)	(K)	(L)	(M)
1	380	300	1,100	1,780	1,335	4.768	8.0	0.592	-3.824	0.0%	0	0.000	-3.824
2	766	300	1,400	2,466	1,850	6.605	10.0	0.357	-3.752	0.0%	0	0.000	-3.752
3	766	300	1,800	2,866	2,150	7.677	10.0	0.381	-2.704	0.0%	0	0.000	-2.704
4	766	300	1,800	2,866	2,150	7.677	0.0	0.436	7.241	5.0%	1,250	4.464	11.705
5	766	300	1,800	2,866	2,150	7.677	0.0	0.234	7.443	5.0%	1,250	4.464	11.907
6	766	300	1,800	2,866	2,150	7.677	0.0	0	7.677	5.0%	1,250	4.464	12.141
7	766	300	1,800	2,866	2,150	7.677	0.0	0	7.677	5.0%	1,250	4.464	12.141
8	766	300	1,800	2,866	2,150	7.677	0.0	0	7.677	5.0%	1,250	4.464	12.141
9	766	300	1,800	2,866	2,150	7.677	0.0	0	7.677	5.0%	1,250	4.464	12.141
10	766	300	1,800	2,866	2,150	7.677	0.0	0	7.677	5.0%	1,250	4.464	12.141

Notes: A, B and C are taken from Annex 9; D = A + B + C.

E = a3*A + a4*B + a5*C.

F = E/a2.

G and H are from the logframe.

I = F - (G + H)

K = a6*J

L = L/a2

M = I + L

Annex 10.3 **Internal Rate of Return Calculations for the Senegal Rice Sector Adjustment Program:** Case 3

Assumptions		
Discount rate:.....	15.0%	(a1)
Exchange rate FCFA/$:	280	(a2)
Percent of transport subsidy saved:.....	66.7%	(a3)
Percent of Processing cost saved:.....	66.7%	(a4)
Percent of SAED subsidy saved:	66.7%	(a5)
Misallocated Resource (Mil. FCFA):.....	25,000	(a6)

Internal Rate of Return Direct Benefits		
5 year	IRR	1.8%
6 year	IRR	16.4%
8 year	IRR	28.7%
10 year	IRR	33.3%

Internal Rate of Return Direct Plus Indirect Benefits		
5 year	IRR	24.4%
6 year	IRR	37.8%
8 year	IRR	48.1%
10 year	IRR	51.5%

Year	Direct Program Benefits								Direct Program Benefits ($)	Improved Resource Use			Total Benefits ($)
	Eliminate Transport Subsidy (FCFA)	Reduced Milling Cost (FCFA)	Reduced Subsidy to SAED (FCFA)	Total Gross (FCFA)	Adjusted Total (FCFA)	Adjusted Total ($)	Cost Grant ($)	Cost Project ($)		Resource Recovery (%)	(FCFA)	($)	
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)
1	380	300	1,100	1,780	1,187	4.238	8.0	0.592	-4.354	0.0%	0	0.000	-4.354
2	766	300	1,400	2,466	1,644	5.871	10.0	0.357	-4.486	0.0%	0	0.000	-4.486
3	766	300	1,800	2,866	1,911	6.824	10.0	0.381	-3.557	0.0%	0	0.000	-3.557
4	766	300	1,800	2,866	1,911	6.824	0.0	0.436	6.388	5.0%	1,250	4.464	10.852
5	766	300	1,800	2,866	1,911	6.824	0.0	0.234	6.590	5.0%	1,250	4.464	11.054
6	766	300	1,800	2,866	1,911	6.824	0.0	0	6.824	5.0%	1,250	4.464	11.288
7	766	300	1,800	2,866	1,911	6.824	0.0	0	6.824	5.0%	1,250	4.464	11.288
8	766	300	1,800	2,866	1,911	6.824	0.0	0	6.824	5.0%	1,250	4.464	11.288
9	766	300	1,800	2,866	1,911	6.824	0.0	0	6.824	5.0%	1,250	4.464	11.288
10	766	300	1,800	2,866	1,911	6.824	0.0	0	6.824	5.0%	1,250	4.464	11.288

Notes: A, B and C are taken from Annex 9; D = A + B + C.

E = a3*A + a4*B + a5*C.

F = E/a2.

G and H are from the logframe.

I = F - (G + H)

K = a6*J

L = L/a2

M = I + L

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Annex 10.4 **Internal Rate of Return Calculations for the Senegal Rice Sector Adjustment Program:** Case 4

Assumptions		
Discount rate:.....	15.0%	(a1)
Exchange rate FCFA/$:	392	(a2)
Percent of transport subsidy saved:.....	66.7%	(a3)
Percent of Processing cost saved:.....	66.7%	(a4)
Percent of SAED subsidy saved:	66.7%	(a5)
Misallocated Resource (Mil. FCFA):.....	25,000	(a6)

Internal Rate of Return Direct Benefits		
5 year	IRR	-22.9%
6 year	IRR	-6.7%
8 year	IRR	8.3%
10 year	IRR	14.7%

Internal Rate of Return Direct Plus Indirect Benefits		
5 year	IRR	-4.3%
6 year	IRR	10.8%
8 year	IRR	23.9%
10 year	IRR	28.9%

Year	Direct Program Benefits								Direct Program Benefits ($)	Improved Resource Use			Total Benefits ($)
	Eliminate Transport Subsidy (FCFA)	Reduced Milling Cost (FCFA)	Reduced Subsidy to SAED (FCFA)	Total Gross (FCFA)	Adjusted Total (FCFA)	Adjusted Total ($)	Cost Grant ($)	Cost Project ($)		Resource Recovery (%)	(FCFA)	($)	
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)
1	380	300	1,100	1,780	1,187	3.027	8.0	0.592	-5.565	0.0%	0	0.000	-5.565
2	766	300	1,400	2,466	1,644	4.194	10.0	0.357	-6.163	0.0%	0	0.000	-6.163
3	766	300	1,800	2,866	1,911	4.874	10.0	0.381	-5.507	0.0%	0	0.000	-5.507
4	766	300	1,800	2,866	1,911	4.874	0.0	0.436	4.438	5.0%	1,250	3.189	7.627
5	766	300	1,800	2,866	1,911	4.874	0.0	0.234	4.640	5.0%	1,250	3.189	7.829
6	766	300	1,800	2,866	1,911	4.874	0.0	0	4.874	5.0%	1,250	3.189	8.063
7	766	300	1,800	2,866	1,911	4.874	0.0	0	4.874	5.0%	1,250	3.189	8.063
8	766	300	1,800	2,866	1,911	4.874	0.0	0	4.874	5.0%	1,250	3.189	8.063
9	766	300	1,800	2,866	1,911	4.874	0.0	0	4.874	5.0%	1,250	3.189	8.063
10	766	300	1,800	2,866	1,911	4.874	0.0	0	4.874	5.0%	1,250	3.189	8.063

Notes: A, B and C are taken from Annex 9; D = A + B + C.

E = a3*A + a4*B + a5*C.

F = E/a2.

G and H are from the logframe.

I = F - (G + H)

K = a6*J

L = L/a2

M = I + L

ANNEX 11(A)

UNCLASSIFIED

OUTGOING TELEGRAM

AGENCY FOR INT'L DEV. TELECOMMUNICATIONS CENTER

ORIGIN AID-00

ORIGIN OFFICE AFSW-06
INFO AFDP-06 AFAR-05 BIFA-01 PPSP-01 PPAR-01 GC-01 GCAF-01
GCCM-01 WID-01 AAG-01 PVC-02 FHAA-01 STRD-01 STAG-02
STFN-02 DRCO-01 SEOP-01 SERP-01 SECS-02 AMAD-01 PPDI-01
LAB-05 FABP-02 AFFW-02 PPCE-01 LAV-01 PPDC-01
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E.O. 12356: N/A
TAGS:
SUBJECT: SENEGAL RICE STRUCTURAL ADJUSTMENT (RSA) PROGRAM (685-0297/0301): PAAD/PP PROJECT COMMITTEE REVIEW

REF: 93 STATE 381882

1. REFTEL REPORTED OUTCOME OF THE DECEMBER 17 PROJECT

COMMITTEE MEETING AND PROVIDED GUIDANCE TO THE MISSION ON THE OUTSTANDING ACTIONS THAT MUST BE COMPLETED PRIOR TO PROGRAM APPROVAL. THE FOLLOWING GIVES A MORE COMPLETE SUMMARY OF THE MAIN ISSUES AND CONCERNS RAISED AT THE MEETING, AND REITERATES THOSE ELEMENTS WHICH MUST BE INCORPORATED IN THE PROGRAM DOCUMENTS BEFORE AFR/SWA CAN FORWARD THEM TO THE AA/AFR FOR AUTHORIZATION.

2. THE RSA PROJECT COMMITTEE MET ON DECEMBER 17 TO REVIEW THE SUBJECT PROGRAM. ATTENDING FROM USAID/W WERE REPRESENTATIVES FROM AFR/ARTS, AFR/DP, AFR/SWA, GC/AFR, R&D/EID, AND R&D/WID. REPRESENTING USAID/DAKAR WERE MISSION DIRECTOR JULIUS COLES AND PROGRAM OFFICER JAN VAN DER VEEN. THANKS IN LARGE PART TO THE MISSION STAFF'S EXCELLENT OVERVIEW AND ABILITY TO ADDRESS KEY QUESTIONS

AND CONCERNS, THE COMMITTEE WAS ABLE TO RESOLVE ALL ISSUES WITHOUT NEED FOR AN ECPR. ON THAT BASIS AFR/SWA IS PREPARED TO RECOMMEND TO THE AA/AFR THAT THE RSA PROGRAM BE APPROVED AT THE REQUESTED DOLS 30 MILLION LEVEL AND 5-YEAR TIMEFRAME, PENDING COMPLETION OF ACTIONS DETAILED IN THE ISSUES GUIDANCE SECTIONS BELOW.

3. ISSUE NO. 1: PEOPLE-LEVEL IMPACT

THE PAAD ANALYSES INDICATE THAT IN THE LONGER-TERM THE RSA PROGRAM WILL LIKELY BENEFIT THE GOS, TRADERS, AND CONSUMERS; IT IS LESS CLEAR HOW THOSE DESIGNATED AS THE PRIMARY BENEFICIARIES, I.E., THE CURRENT PADDY-PRODUCERS, WILL ACTUALLY BENEFIT FROM THE PROGRAM IN THE LONG- AND SHORT-RUN. EQUALLY IMPORTANT ARE THE POTENTIAL NEGATIVE

EFFECTS (E.G., RISING RICE PRICES RESULTING FROM SUBSIDY REMOVAL) ON THE POOR AND OTHER VULNERABLE CONSUMERS, INCLUDING PADDY FARMERS WHO ARE NET-DEFICIT RICE PRODUCERS. THE PAAD IS EQUALLY SILENT ON THE MEANS BY WHICH THE MISSION AND THE GOS COULD IDENTIFY AND REDRESS THE POTENTIALLY NEGATIVE IMPACTS OF THE PROGRAM.

DISCUSSION: THE COMMITTEE COMMENDED THE MISSION'S EFFORTS TO DETERMINE THE IMPACT OF THE PROGRAM ON THE REAL AND POTENTIAL WINNERS AND LOSERS, RECOGNIZING THAT THERE ARE MANY UNKNOWNS AT THIS POINT (E.G. THE ROLE OF THE STATE IN DETERMINING A PEREQUATION OR IMPORT DUTY ON IMPORTED RICE, AND THE IMPACT IT WOULD HAVE ON CONSUMERS; THE EFFECT OF THE COMMITMENT OF THE STATE TO A TRULY MARKET-DRIVEN RICE SUB-SECTOR; THE EXTENT TO WHICH PADDY PRODUCTION WILL BECOME MORE EFFICIENT AND INTENSE; THE ABILITY OF PADDY-FARMERS TO DIVERSIFY INTO OTHER CROPS, SHOULD IT BE NECESSARY TO DO SO). THE BENEFICIARY AND SOCIAL ANALYSES ARE NOT CLEAR ON WHO DOES AND DOES NOT BENEFIT, WHEN AND HOW, ESPECIALLY POOR AND VULNERABLE GROUPS. NOR ARE THE ANALYSES WRITTEN IN A STYLE THAT NON-ECONOMISTS CAN READILY UNDERSTAND. ALSO, THOUGH THERE IS AN EXCELLENT MONITORING PLAN FOR TRACKING IMPACT DURING IMPLEMENTATION, IT DOES NOT ADDRESS MITIGATION STRATEGIES FOR THOSE GROUPS THAT MAY BE SEVERELY IMPACTED BY THE PROGRAM.

GUIDANCE: THE MISSION MUST INCORPORATE IN THE PAAD A DETAILED CLEAR DISCUSSION OF HOW THE PROGRAM WILL WORK, SPECIFICALLY THE POTENTIALLY POSITIVE AND NEGATIVE IMPACTS ON PROJECT BENEFICIARIES (PRODUCERS AND CONSUMERS), AS WELL AS THE POOR MAJORITY AND OTHER VULNERABLE GROUPS.

THE DISCUSSION SHOULD INCLUDE A STRATEGY FOR IDENTIFYING, TRACKING AND MEASURING NEGATIVE IMPACTS, AND WHAT THE RSA PROGRAM WILL DO TO MITIGATE THEM SHOULD THEY BE IDENTIFIED DURING IMPLEMENTATION. (NOTE: THIS LAST POINT IS CRITICAL

IN MEETING REQUIREMENTS UNDER DFA/NPA GUIDANCE.)

4. ISSUE NO. 2: THE PEREQUATION

HOW HIGHLY PROTECTED SHOULD RICE PRODUCTION BE IN SENEGAL? SINCE THE CURRENT PROTECTION LEVEL IS ON THE ORDER OF 30 TO 35 PCT AFTER CORRECTING FOR A CFA FRANC OVERVALUATION OF 50 PCT, SHOULD THE MISSION ALSO ARGUE FOR LESS PROTECTION AT THE SAME TIME IT PURSUES LIBERALIZATION OF MARKETING? AFTER ALL, DOWNWARD PRESSURE ON RICE PRICES WOULD SPEED UP THE REALLOCATION OF RESOURCES AWAY FROM RICE AND TOWARD OTHER CROPS WHICH ARE MORE ECONOMICAL TO PRODUCE.

DISCUSSION: THE CURRENT PEREQUATION OR EVENTUAL IMPORT DUTY ON RICE PLAYS AN IMPORTANT ROLE IN THE SENEGALESE ECONOMY: IT MINIMIZES RICE PRICE FLUCTUATIONS; IT GENERATES REVENUES FOR THE GOS; AND IT HELPS PROTECT INFRASTRUCTURAL INVESTMENTS IN THE RICE-PRODUCING FLEUVE AREA. AT THE SAME TIME, HOWEVER, BY PROTECTING SENEGALESE PADDY FARMERS FROM FOREIGN COMPETITION, PEREQUATION SERVES TO REDUCE THE POTENTIAL BENEFIT TO SENEGALESE RICE CONSUMERS OF LOW WORLD PRICES AND SLOWS DOWN REALLOCATION OF RESOURCES TO COMMODITIES IN WHICH SENEGAL HAS A COMPARATIVE ADVANTAGE TO PRODUCE. HOWEVER, THIS ROLE, VIEWED IN THE CONTEXT OF THE PASA AND POSSIBLE FUTURE IMF

AND WORLD BANK ADJUSTMENT AGREEMENTS, INDICATES THAT DIALOGUE AND EVENTUAL CONDITIONALITY ON THE PEREQUATION AS PART OF THE RSA PROGRAM IS CLEARLY OUTSIDE THE MANAGEABLE INTEREST OF THE MISSION. THAT SAID, THE PAAD NONETHELESS SHOULD CLEARLY LAY OUT THE ACTUAL AND POTENTIAL IMPACT OF THE PEREQUATION ON THE RSA PROGRAM.

5. ISSUE NO. 3: AFFORDABILITY

THE MISSION INTENDS TO FINANCE THIS 3-YEAR DOLS 30 MILLION PROGRAM THROUGH FY 94/95/96 DFA AND SDP RESOURCES. AT PRESENT THERE ARE DOLS 7.135 MILLION IN SDP RECOVERIES IN PLACE FOR A FY 1994 OBLIGATION. CAN THE MISSION AFFORD THIS PROGRAM WITHIN THE LIMITS OF ITS STRAIGHTLINED DOLS 20 MILLION ANNUAL OYB, ALLOCATING DOLS 2.865M/DOLS 10M/DOLS 10M OF ITS NEW DFA RESOURCES IN FY94/95/96, RESPECTIVELY? OR WILL THIS PROGRAM REQUIRE ADDITIONAL RESOURCES?

DISCUSSION: MISSION DIRECTOR COLES PRESENTED A SCENARIO WHEREBY THE REMAINING DOLS 22.865 MILLION COULD BE ACCOMMODATED WITHIN THE MISSION'S STRAIGHTLINED OYB DURING THE FY 1994-96 PERIOD. THIS WOULD ENTAIL POSTPONING THE SOCIAL MARKETING AND NEW PVO SUPPORT PROJECTS FROM FY 94 TO FY 95, AND FROM FY 95 TO FY 1996, RESPECTIVELY, AS WELL

AS MAKING SOME OTHER LESS CONSEQUENTIAL SHIFTS IN CURRENTLY PROJECTED ALLOCATIONS. THE PROJECT COMMITTEE FOUND THIS TO BE A REASONABLE SOLUTION FOR FUNDING THE PROGRAM -- KEEPING IN MIND THE DIRECTOR . VIEW THAT AN EXTRA DOLS 5 MILLION EACH IN FYS 95-96 WOULD PROVIDE SOME

BREATHING ROOM TO AN ALREADY STRESSED OYB.

GUIDANCE: GIVEN THAT THE ENTIRE PROGRAM WILL BE FUNDED WITHIN THE CURRENTLY PROJECTED OYB, THE MISSION IS REQUESTED TO SEND USAID/W ITS REVISED FY 94/95/96 OYB SCENARIO AT ITS EARLIEST CONVENIENCE. THE REVISED FY 94 FIGURES IN PARTICULAR WILL BE NEEDED TO PREPARE THE PROPOSED DOLS 2.865 MILLION ALLOTMENT FOR THE JANUARY OBLIGATION.

6. ISSUE NO. 4: BROOKE AMENDMENT SANCTIONS

SINCE OCTOBER 1, 1993, SENEGAL HAS BEEN UNDER BROOKE AMENDMENT SANCTIONS, WHICH PROHIBIT THE PROVISION OF ASSISTANCE TO A COUNTRY WHICH IS MORE THAN ONE YEAR IN ARREARS ON DEBTS DUE THE UNITED STATES. DAKAR 12968 DATED NOV 8, 1993 STATES THAT THE GOS INTENDS TO MAKE ALL OVERDUE PAYMENTS BY MID-JANUARY 1994. ASSUMING THAT THE GOS AND THE MISSION SATISFY ALL OTHER OUTSTANDING ACTIONS FOR AUTHORIZATION, SHOULD THE BUREAU PROCEED WITH APPROVAL OF THIS PROGRAM NOTWITHSTANDING THE ARREARAGE?

DISCUSSION: MISSION DIRECTOR COLES ASSURED THE COMMITTEE THAT THE DATE OF MID-JANUARY WAS A FIRM COMMITMENT ON THE PART OF THE GOS, AND THAT THE GOS COULD LIQUIDATE BROOKE ARREARAGES EVEN SOONER IF NECESSARY. BASED ON THIS ASSURANCE, COMMITTEE MEMBERS AGREED THAT THE BUREAU WOULD NOT PROCEED WITH THE RSA AUTHORIZATION UNTIL THE GOS WAS IN NON-VIOLATION STATUS OF BROOKE AMENDMENT SANCTIONS.

GUIDANCE: THE MISSION SHOULD NOTIFY THE GOS OF THIS

DECISION AND URGE THE MINISTRY OF FINANCE TO SETTLE BROOKE ARREARAGES AS QUICKLY AS POSSIBLE SO THAT THE BUREAU CAN PROCEED WITH PROGRAM AUTHORIZATION.

7. ISSUE NO. 5: THE INITIAL ENVIRONMENTAL EXAMINATION

CAN THE DRAFT OF THE IEE BE ACCEPTED AS IS, OR WILL IT REQUIRE SOME ADDITIONAL ANALYSIS?

DISCUSSION: THE BUREAU ENVIRONMENTAL OFFICER NOTED THAT

THE MISSION DID A GOOD FIRST DRAFT OF AN IEE. IN ADDITION, HE RECOMMENDED THAT IT MAKE REFERENCE TO THE RECENTLY COMPLETED PROGRAMMATIC ENVIRONMENTAL REVIEW FOR

THE SZWM PROJECT, AS WELL AS THE NATIONAL ENVIRONMENTAL ACTION PLAN (NEAP) PROCESS WHICH IS NOW GOING FORWARD. IT SHOULD SHOW HOW THE PROPOSED EMEMP (MONITORING, EVALUATION AND MITIGATION PLAN) TIES INTO THE NEAP AS WELL AS OTHER ONGOING USAID PROJECTS, AND WHICH GOS INSTITUTION(S) WILL BE RESPONSIBLE FOR CARRYING OUT THE EMEMP THERE SHOULD ALSO BE A COVENANT TO ENSURE THAT THE EMEMP WILL INITIATED AND CARRIED OUT. FINALLY, REGARDING THE POSSIBILITY OF ENVIRONMENTAL IMPACT REVIEWS (EIRS), THE FINAL IEE SHOULD SPECIFY WHAT SPECIFIC AREAS OR SECTORS MIGHT NEED THIS KIND OF ANALYSIS. THE COMMITTEE AGREED WITH THESE RECOMMENDATIONS.

GUIDANCE: THE MISSION MUST SUBMIT A REVISED IEE FOR APPROVAL WHICH ADDRESSES THE ABOVE RECOMMENDATIONS. THE

PAAD SHOULD ALSO INCORPORATE A PROGRAM COVENANT WHICH STATES THAT THE GOS WILL PREPARE THE ABOVE EMEMP TO GUIDE THE PROCESS BY WHICH THEY WILL MONITOR AND MITIGATE UNDESIRABLE ENVIRONMENTAL CONSEQUENCES OF THE RSA PROGRAM.

8. OTHER CONCERNS

A. WITHIN THE UNCERTAIN CONTEXT OF WHO GAINS AND WHO LOSES FROM LIBERALIZATION OF THE RICE SUB-SECTOR, CONCERNS MAY BE VOICED THAT MONITORING OF FARM INCOME IMPACTS UNDER THIS PROGRAM EXAMINE NOT ONLY REVENUE CHANGES BUT THE EFFECTS OF SUCH CHANGES ON HOUSEHOLD USE AND ALLOCATION OF LABOR. THIS IS OF PARTICULAR CONCERN FOR CHILDREN AND WOMEN. FOR EXAMPLE, SHOULD THIS PROGRAM RESULT IN INCREASED INCOMES FROM RICE PRODUCTION, FARM HOUSEHOLDS MAY DECIDE TO INCREASE HECTARAGE UNDER RICE CULTIVATION, INCREASING WORKLOADS, AND POSSIBLY INTERFERING WITH SCHOOL ATTENDANCE FOR CHILDREN. SIMILARLY, CROP DIVERSIFICATION, WHICH COULD RESULT FROM EITHER A NET INCREASE OR NET REDUCTION IN RETURNS FROM RICE PRODUCTION, COULD HAVE THE SAME EFFECT ON HOUSEHOLD LABOR USE. ON THE OTHER HAND, A NET REDUCTION IN HOUSEHOLD INCOMES RESULTING, FOR EXAMPLE, FROM HIGHER RETAIL RICE PRICES (I.E., FROM SUBSIDY REMOVAL) MAY ALSO FORCE CONSUMING HOUSEHOLDS, BOTH RURAL AND URBAN, TO ENGAGE IN WAGE LABOR ON- AND OFF-FARM, WITH SIMILAR IMPACTS ON FAMILY WELL-BEING. CARE SHOULD BE TAKEN TO TRACK THE IMPACT OF THE RSA PROGRAM ON THE LARGE NUMBER OF FEMALE-HEADED HOUSEHOLDS, WHICH ARE GENERALLY IN A MORE PRECARIOUS ECONOMIC POSITION.

B. THE MISSION'S MONITORING AND EVALUATION SYSTEM

SHOULD REFLECT DISAGGREGATION OF DATA BY GENDER AND REGION.

9. CONCLUSION

THE PROJECT COMMITTEE COMMENDS THE MISSION IN ITS EFFORTS TO BRING ABOUT REAL REFORM IN SENEGAL'S RICE SUB-SECTOR. WE REALIZE THE DIFFICULTY THE MISSION FACED IN KEEPING THIS DIALOGUE GOING IN THE ABSENCE OF MULTI-DONOR COMMITMENTS AND A SUSPENSION OF THE PASA. YOUR PERSISTENCE IN WORKING OUT SUCH SUBSTANTIVE REFORMS NOT ONLY REFLECTS THE INTEGRITY OF THE MISSION'S PROGRAM STRATEGY, BUT MORE IMPORTANT THE DEDICATION AND PROFESSIONALISM OF YOUR STAFF. THE PROGRAM DOCUMENTS ARE FIRST-RATE, BOTH IN THEIR ANALYTICAL DEPTH AND QUALITY OF PRESENTATION.

UPON RECEIPT OF ABOVE RECOMMENDATIONS AFR/SWA WILL GO

OUTGOING
TELEGRAM

AGENCY FOR INT'L DEV.
TELECOMMUNICATIONS CENTER

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CHRISTOPHER

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FM AMEMBASSY DAKAR
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ANNEX 11(B)

AIDAC

FOR AFR/SWA

E.O. 12356: N/A
SUBJECT: RICE STRUCTURAL ADJUSTMENT PROGRAM: RESPONSE TO PAAD COMMITTEE REVIEW

REF: (A) 93 STATE 381882, (B) 015737

1. THIS CABLE RESPONDS TO THE ISSUES IDENTIFIED IN REF B.

2. ISSUE NO. 1: PEOPLE-LEVEL IMPACT

USAID/DAKAR IS INCORPORATING INTO THE RSA PROGRAM PAAD THIRTEEN PARAGRAPHS ADDRESSING THE POINTS RAISED UNDER ISSUE NO. 1. THE REVISED PAAD DESCRIBES HOW THE PROGRAM WILL WORK AND ARTICULATES THE POTENTIALLY POSITIVE AND NEGATIVE EFFECTS OF THE PROGRAM ON FARMERS CURRENTLY

GROWING PADDY FOR THE SENEGALESE MARKETS, PROVIDING ADDITIONAL INFORMATION ON THE SOCIO-ECONOMIC CHARACTARISTICS OF THESE PROGRAM BENEFICIARIES. THREE POTENTIAL VULNERABLE GROUPS HAVE BEEN IDENTIFIED: FARM HOUSEHOLDS HEADED BY WOMEN WOMEN AS FARM LABORERS, AND SMALLHOLDERS. THE RSA PROGRAM INCLUDES A STRATEGY FOR TRACKING AND MEASURING POTENTIAL NEGATIVE EFFECTS ON THESE AND OTHER VULNERABLE GROUPS, AND FOR DESIGNING AND IMPLEMENTING MITIGATING ACTIONS. IN THE GRANT AGREEMENT, THE GOS WILL COVENANT TO PARTICIPATE IN IDENTIFYING THESE POTENTIAL NEGATIVE EFFECTS AND IN DESIGNING AND IMPLEMENTING THE MITIGATING ACTIONS TO BE UNDERTAKEN.

3. ISSUE NO. 2: THE PEREQUATION

REF. B STATES THAT THE CURRENT PROTECTION LEVEL IS ON THE ORDER OF 30 TO 35 PERCENT AFTER CORRECTING FOR A CFA FRANC DEVALUATION OF 50 PERCENT. THIS IS INCORRECT. A 50 PERCENT DEVALUATION (WHICH ENTAILS A DOUBLING, IN CFA TERMS, OF THE PRICE OF IMPORTS) MORE THAN ELIMINATES THE POSITIVE PEREQUATION. SUCH A 50 PERCENT DEVALUATION RECENTLY OCCURRED. ACCORDING TO THE IMF, THE PEREQUATION NOW IS NEGATIVE. AS EVENTS AND RECENT DISCUSSIONS BETWEEN THE GOS ON THE ONE HAND, AND THE IBRD AND THE IMF ON THE OTHER, HAVE DEMONSTRATED, CONDITIONALITIES ON THE PEREQUATION/IMPORT DUTY ARE OUTSIDE THE MANAGEABLE INTEREST OF USAID/DAKAR. IN CONCERT WITH OTHER DONORS THROUGH THE PASA MECHANISM, USAID/DAKAR SUPPORTS GOS EFFORTS TO INSTITUTE A MODEST DUTY ON IMPORTED RICE, A DUTY COMMENSURABLE WITH THE

GENERAL LEVEL OF TARIFFS IN SENEGAL. THIS WOULD PROVIDE A REASONABLE CONTEXT FOR PROTECTING PADDY FARMERS AND

PROMOTING EFFICIENCY IN PRODUCTION. THE RSA PROGRAM PAAD ARTICULATES THIS STRATEGY IN THE DISCUSSION OF THE RESTRUCTURING OF THE CAISSE DE PEREQUATION ET DE STABILISATION DES PRIX (CPSP).

4. ISSUE NO. 3: AFFORDABILITY

AS REQUESTED, USAID/DAKAR PROVIDES THE PROPOSED FY 94/95/96 OYB SCENARIO:

OYB	FY 94 $18.8	FY 95 $20.0	FY 96 $20.0
0284 PVO/NGO SPT	-	2,325	-
0285 NRBAR	2,000	1,500	1,000
0286 SCS/FP	4,450	1,710	1,500
3057 CONTRACEPTIVES	710	840	900
0294 PD&S	500	300	300
0295 SZWM	1,975	325	-
0297 RSA (NPA)	865	10,000	10,000
0301 RSA (PA)	2,000	-	-
0305 CBNRM	2,000	-	1,000
0306 AIDSCAP	2,800	-	800
0307 SOCIAL MKTG DEV.	-	1,500	1,000
0308 PVO/NGO SPT II	-	-	2,000
0463 HRDA	540	750	750
0475 ATLAS	960	750	750

5. ISSUE NO. 4: THE INITIAL ENVIRIONMENTAL EXAMINATION (IEE)

THE REVISED FINAL IEE WAS CLEARED AND APPROVED BY AFR ON JANUARY 21, 1994.

6. OTHER CONCERNS:

USAID/DAKAR WILL MONITOR THE EFFECTS OF THE RSA PROGRAM ON THE BURDEN OF THE FARM LEVEL AND HOUSEHOLD LABOR WORKLOADS, PARTICULARLY ON WOMEN AND CHILDREN. THIS ISSUE IS ADDRESSED IN THE DISCUSSION IN PARA 2 ABOVE. USAID/DAKAR ALSO WILL EXAMINE THE EFFECTS ON REAL HOUSEHOLD INCOMES RESULTING FROM HIGHER RETAIL RICE PRICES, IF ANY, THAT ARE CAUSED BY THE POLICY REFORMS OF THE RS
A PROGRAM. THESE DATA WILL BE DISAGGREGATED BY THE GENDER OF THE HOUSEHOLD HEAD AND BY REGION.

THE REVISED PAAD WILL BE TRANSMITTED TO USAID/WASHINGTON ON OR ABOUT 2 FEBRUARY 1994. MISSION REQUESTS PROMPT APPROVAL OF AUTHORIZATION PACKAGE. JOHNSON