PD-AAP-499

AGENCY FOR INTERNATIONAL DEVELOPMENT

WASHINGTON, D.C. 20523

PROJECT PAPER

PAKISTAN

FOOD SECURITY MANAGEMENT (391-0491)

February 1984

PROJECT AUTHORIZATION

PAKISTAN

Food Security Management
Project No. 391-0491

1. Pursuant to Section 531 of the Foreign Assistance Act of 1961, as amended the (FAA), I hereby authorize the Food Security Management Project for the Islamic Republic of Pakistan (Cooperating Country), involving planned obligations of not to exceed Thirty-Five Million United States Dollars ($35,000,000), in grant funds over a five (5) year period from the date of authorization, subject to the availability of funds in accordance with the A.I.D. OYB/allotment process, to help in financing foreign exchange and local currency costs for the project. The planned life of the project is through June 30, 1989.

2. The project will assist the Cooperating Country to achieve its food security objectives in a manner consistent with the rational and efficient use of national resources, the overall economic development of the country, and an improved standard of living for farm families and the population at large. The purpose of the project is to improve the analytical and policy formulation framework, the managerial capabilities and the physical capacity of the Cooperating Country to manage the national Food Security system effectively and efficiently. The project will (a) assist the GOP to establish, institutionalize and strengthen the capacity of an economic analysis network (EAN) composed of public and private institutions in Pakistan that produce or utilize agricultural economic analysis, to conduct relevant and timely economic and policy research; (b) finance a special studies program of policy analysis on selected topics; (c) assist the Cooperating Country to implement an improved system for the collection of basic agricultural data by the provincial departments of agriculture, based on the area sampling frame methodology; and (d) improve the provincial public sector grain storage network by introducing improved management systems, rehabilitating grain storage facilities, and strengthening the system for transfer of technologies for storage design, grain quality maintenance, and pest control.

3. The Project Agreement(s) which may be negotiated and executed by the officers to whom such authority is delegated in accordance with A.I.D. 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 A.I.D. may deem appropriate.

A. Source and Origin of Commodities, Nationality of Services

Commodities financed by A.I.D. under this project shall have their source and origin in the Cooperating Country or in the United States except as A.I.D. may otherwise agree in writing. Except for ocean shipping, the suppliers of commodities or services shall have the Cooperating Country or the United States as their place of nationality, except as A.I.D. may otherwise agree in writing. Ocean shipping financed by A.I.D. under the project shall, except as A.I.D. may otherwise agree in writing, be financed only on flag vessels of the United States or the Cooperating Country.

B. Condition Precedent to Disbursement for Rehabilitation of Grain Storage Facilities

Except as A.I.D. may otherwise agree in writing, prior to any disbursement of funds under this project for any engineering or construction services related to the rehabilitation of grain storage facilities, or to the issuance by A.I.D. of documentation pursuant to which such disbursement will be made, the Cooperating Country shall furnish to A.I.D., in form and substance satisfactory to A.I.D., a long-term plan for meeting the operation and maintenance (O & M) recurrent costs for all existing and planned public sector grain storage facilities, including policy measures to be implemented and performance targets to be achieved in meeting O & M recurrent costs over the life of this project, which takes into account the findings and recommendations of the comprehensive study, to be financed by A.I.D., to, amongst other things, analyze O & M recurrent cost and management issues in the sector and identify specific policy options and recommendations to address such problems in the sector.

C. Covenant as to Operation and Maintenance Recurrent Costs Reporting

Except as A.I.D. may otherwise agree in writing, the Cooperating Country agrees to furnish to A.I.D., no less frequently than every twelve (12) months from the date of the signing of the Project Agreement, a report in form and substance satisfactory to A.I.D., setting forth how O & M recurrent costs are being met by the Cooperating Country for all existing and newly-built grain storage facilities. All such reports submitted subsequent to A.I.D. having made a determination that the condition precedent requiring a long-term plan for meeting O & M recurrent costs has been satisfied shall include documentation that O & M recurrent costs for the period subsequent to satisfaction of the condition precedent are being met in accordance with said plan.

D. Based on the justification set forth in Annex F of the Project Paper, I hereby approve a waiver of the requirements of Section 636(i) of the FAA and approve a waiver of source, origin, and nationality from Code 000 (U.S. only) to Code 935 (Free World) to permit the procurement of 140 motorbikes, 2 right-hand drive 5 passenger vans, 2 right-hand drive 2-ton capacity mobile training cargo vans, 13 9-passenger carryalls, and spare parts.

Approved Signature
Signed by Frank B. Kimball May 16, 1984

AGENCY FOR INTERNATIONAL DEVELOPMENT

PROJECT DATA SHEET

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

DOCUMENT CODE: 3

2. COUNTRY/ENTITY: Pakistan

3. PROJECT NUMBER: 391-0491

4. BUREAU/OFFICE: Asia — 04

5. PROJECT TITLE (maximum 40 characters): Food Security Management

6. PROJECT ASSISTANCE COMPLETION DATE (PACD): MM 06 DD 30 YY 89

7. ESTIMATED DATE OF OBLIGATION (Under 'B.' below, enter 1, 2, 3, or 4)
A. Initial FY 84 B. Quarter 3 C. Final FY 87

8. COSTS ($000 OR EQUIVALENT $1 = Rs 13.50)

A. FUNDING SOURCE	FIRST FY 84 B. FX	C. L/C	D. Total	LIFE OF PROJECT E. FX	F. L/C	G. Total
AID Appropriated Total	3,500	1,500	5,000	12,907	22,093	35,000
(Grant)	(3,500)	(1,500)	(5,000)	(12,907)	(22,093)	(35,000)
(Loan)	(-)	(-)	(-)	(-)	(-)	(-)
Other U.S. 1.						
Other U.S. 2.						
Host Country	-	19	19	-	4,460	4,460
Other Donor(s)	-	-	-	-	-	-
TOTALS	3,500	1,519	5,019	12,907	26,553	39,460

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) ESF	189	052	-	-	-	35,000	-	35,000	-
(2)									
(3)									
(4)									
TOTALS				-	-	35,000	-	35,000	-

10. SECONDARY TECHNICAL CODES (maximum 6 codes of 3 positions each): 013 | 053 | 063

11. SECONDARY PURPOSE CODE: 150

12. SPECIAL CONCERNS CODES (maximum 7 codes of 4 positions each)

A. Code	RGEN	NUTR	TECH	TNG		
B. Amount						

13. PROJECT PURPOSE (maximum 480 characters)

To improve the analytical and policy formulation framework, the managerial capabilities, and the physical capacity of the GOP to manage the national food security system effectively and efficiently.

14. SCHEDULED EVALUATIONS
Interim MM 04 YY 86 MM 10 YY 87 Final MM 04 YY 89

15. SOURCE/ORIGIN OF GOODS AND SERVICES
[X] 000 [ ] 941 [X] Local [ ] Other (Specify) _____

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

Cleared by: FM - Leon Vaughn

17. APPROVED BY
Signature: Jimmie M. Stone
Title: Acting Director, USAID/Pakistan
Date Signed: MM DD YY

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

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LIST OF ABBREVIATIONS, TERMS, AND ACRONYMS

ADB	Asian Development Bank
ADC	Agricultural Data Collection
AID	Agency for International Development
ACEP	Agricultural Commodities and Equipment Program
AERC	Applied Economic Research Center, Karachi
ADP	Annual Development Program or Automated Data Processing, depending on context
ARD	Agriculture and Rural Development Office of USAID
ASF	Area Sampling Frame
C&W	Provincial Department of Communications and Works
DFA	Provincial Department of Food and Agriculture
EAN	Economic Analysis Network
EANG	Economic Analysis Network Group
EPA	Economic and Policy Analysis
ERS	Economic Reporting Service of the USDA
ERR	Economic Rate of Return
ESF	Economic Support Fund
FY	Fiscal Year (US: October-September; GOP: July-June)
FAA	Foreign Assistance Act
FBS	Federal Bureau of Statistics
FSMP	Food Security Management Project
godown	Storage facility
GOP	Government of Pakistan
IBRD	International Bank for Reconstruction and Development (World Bank)

IDA	International Development Association
IFPRI	International Food Policy Research Institute
LOP	Life of Project
LT	Long term
MFAR	Modified Fixed Amount Reimbursement
MMT	Million metric tons
MOFA	Ministry of Food, Agriculture, and Cooperatives
MT	Metric ton
NFDC	National Fertilizer Development Center
NLC	National Logistics Cell
NWFP	Northwest Frontier Province
PACD	Project Assistance Completion Date
PARC	Pakistan Agricultural Research Council
PASSCO	Pakistan Agricultural Storage and Services Corporation
patwari	Local data collection official of the Revenue Department
PC-1	Basic authorizing document for a project within GOP
PCU	Project Coordination Unit
PFY	Pakistan Fiscal Year
PHM	Post Harvest Management
PID	Project Identification Document
PIL	Project Implementation Letter
PU	Planning Unit in MOFA
RFP	Request for Proposals
rupee	Pakistani monetary unit (Rs 13.50 = US $1.00)
SRS	Statistical Reporting Service of the USDA
ST	Short term
TA	Technical Assistance

USAID	AID Mission in Pakistan
USDA	United States Department of Agriculture
USG	United States Government
VPCC	Vertebrate Pest Control Center (Karachi)

I. SUMMARY AND RECOMMENDATIONS

A. Recommendations

1. Funding

USAID/Pakistan recommends that an ESF grant of $35.0 million be authorized, of which $5.0 million is proposed for obligation in FY 1984, for the Food Security Management Project (FSMP), which has a PACD of June 30, 1989. The GOP's contribution to the project will be the equivalent of about $4.5 million over a five-year period.

2. Geographic Code

The project authorization should specify that, except as AID may otherwise agree in writing:

a. Goods and services financed by AID under this project shall have their source and origin in countries included in AID Geographic Code 000 or Pakistan; and,

b. Ocean Shipping financed by A.I.D. under this Project shall be only on flag vessels of the United States or Pakistan. A SER/COM policy clarification concerning eligibility of cooperating country flag bottoms in projects specifying 000 plus cooperating country source indicates host country bottoms may be authorized if a programmatic reason exists for doing so. A key concern in the negotiation of the Pakistan economic assistance program was the threat to Pakistan's economic stability posed by a deteriorating balance of payments. The use of Pakistani flag bottoms supports the intent of the overall assistance program by augmenting Pakistan's balance of payments receipts. Moreover, a precedent has been established by the use of Pakistani bottoms for projects authorized in FY 1982 and 1983; excluding them from this project would unnecessarily strain the understanding and cooperation that has been established between our two countries.

3. Waivers

a. USAID/Pakistan recommends that a source/origin and nationality waiver from A.I.D. Geographic Code 000 to Code 935 and a waiver of FAA Section 636(i) be approved to permit the procurement of seventeen(17) right-hand, four-wheel drive vehicles and one hundred forty (140) motorbikes. A copy of the waiver request is included as Annex F.

b. Pursuant to AIDPR 7-3.107-50(D), USAID/Pakistan recommends that the Assistant Administrator for Asia approve a justification for noncompetitive procurement to permit USAID/Pakistan to negotiate and execute a contract with the International Food Policy Research Institute (IFPRI), an international agricultural research center, to provide the necessary technical and other services as described under the Economic and Policy Analysis component in this Project Paper, on the grounds that ". . . procurement from any other source would impair foreign assistance objectives, and would be inconsistent with fulfillment of the foreign assistance program." Justification is provided at Annex O.

not approved
5.16.84

B. Summary Project Description

The Food Security Management Project is designed to achieve the food security objectives of the Government of Pakistan in a manner consistent with the rational and efficient use of national resources, the overall economic development of the country, and an improved standard of living for farm families and the population at large. The project complements parallel initiatives in economic policy analysis and grain storage financed by the IBRD, ADB and FAO.

The project will improve the analytical and policy formulation framework, the managerial capabilities and the physical capacity of the GOP to manage the national food security system efficiently and effectively through three related components: (1) Economic and Policy Analysis (EPA); (2) Agricultural Data Collection (ADC); and (3) Post-Harvest Management (PHM).

1. Economic and Policy Analysis

The EPA component will assist the GOP to establish and institutionalize an Economic Analysis Network (EAN) composed of public and private institutions in Pakistan that produce or utilize agricultural analysis. An expansion of analytic activities and capabilities within the network will be coordinated by a group of Pakistani analysts under the leadership of the Planning Unit of the Ministry of Food, Agriculture, and Cooperatives (PU/MOFA). This group (the EANG) will be directed by a Steering Committee composed of senior decision-makers who will identify priority issues to be addressed. The EANG will translate these priorities into an operational agenda for research and analysis and coordinate efforts to address these issues, carried out by analysts in member institutions of the EAN. The Steering Committee will then evaluate research findings and recommendations and translate these into policy measures.

Under the EPA component, the analytic capacity of the participating institutions will be strengthened through training, technical assistance, and other inputs. The institutional development subcomponent which will focus on developing the institutional capacity of the PU/MOFA and the members of the EANG, will be implemented with the assistance of a U.S. contractor. The other related sub-component will involve the implementation of a Special Studies Program of policy analysis on selected topics to be carried out by the International Food Policy Research Institute (IFPRI) in collaboration with Pakistani researchers.

2. Agricultural Data Collection

Under the ADC component, an improved system for the collection of basic agricultural data will be implemented by the Provincial Departments of Food and Agriculture (DFAs) in cooperation with the PU/MOFA, to produce National, Provincial and selected District level data. This system, based on the Area Sampling Frame (ASF) methodology developed by the USDA Statistical Reporting Service (SRS), will provide more reliable data on a more timely basis and at reduced cost than is currently available. As the basic system becomes established, a broader range of data will be made available to the federal and provincial governments through expanded data collection carried out under this component. The technical assistance team under this subcomponent will report to the PU/MOFA Project Director and the Deputy Director of the PU/MOFA Agricultural Economics and Statistics Section. Implementation of the ASF system will be assisted by USDA/SRS.

3. Post-Harvest Management

Under the Post-Harvest Management component, management of the provincial grain storage network will be improved by: the introduction of better management systems and training; rehabilitation of approximately 750,000 MT of grain storage capacity, or 75 percent of existing GOP grain storage facilities over five years old; and strengthening the system for transfer of technologies for storage design, grain quality maintenance, and pest control technologies to these facilities through Pakistani research institutions, including universities. This component will be implemented by the Provincial Food and Agriculture Departments in collaboration with the MOFA, Pakistani research institutions, and the Provincial Communications and Works Departments (C&Ws). The facilities to be rehabilitated with FSMP assistance constitute about 24 percent of the total public sector storage capacity in the country.

The major inputs under this component will include construction, commodities, and training, in addition to both long-term and short-term technical assistance. The PHM component will complement an ongoing IBRD-financed program and a recently approved ADB-financed project, both of which focus on the construction of new public sector grain storage facilities.

A summary of the proposed A.I.D. contribution to the Project is shown in Table 1.

C. Summary Findings

This project is ready for implementation and is judged to be socially, financially, and economically sound, and technically and administratively feasible.

D. Project Checklists and Mission Director's Certifications

1. The project meets all applicable statutory criteria. Appropriate checklists are included as Annex B.

2. Two certifications signed by the USAID/Pakistan Mission Director are included as Annex C:

a. an FAA 611 (e) certification, which certifies that the GOP has the capability to implement and maintain the project; and

b. an FAA 612 (b) certification to permit the disbursement of dollars in lieu of US-owned rupees to finance local costs.

Table 1

Summary of AID Contribution to the Project by Expense Category and Project Component (US$ '000)

	Project Component				
Expense Category	-EPA-	-ADC-	-PHM-	-PCU-*/	Total
Technical assistance	3050	1776	2429	1477	8732
Training	1294	1072	1052	-	3418
Rehabilitation	-	-	7546	-	7546
Commodities	105	1172	350	51	1678
Studies	5643	-	-	-	5643
Local Staffing	-	2327	-	362	2689
Evaluation	-	-	-	289	289
Other	280	1703	990	238	3211
Sub-total	10372	8050	12367	2417	33206
Contingency	548	455	653	138	1794
TOTAL	10920	8505	13020	2555	35000

*/PCU = Project Coordination Unit

E. APAC Concerns and Design Issues

Several concerns and design issues were raised at the APAC review of the PID for the former Agricultural Production, Distribution and Storage Project (see Annex A.), which was subsequently divided into separate projects, of which this project is one. The specific concerns and issues and where they are addressed in the Project Paper are as follows:

1. On-farm versus Collection Center Storage

On the basis of an examination of the relative impact of improvements in on-farm storage facilities as opposed to improvements in public sector collection center storage facilities, the Mission has determined that support of improvements in the latter is of higher priority and a sound investment of AID resources. (See Sections II.B.4., III.D.3. and V.D.)

2. Private Sector Role in Storage Management

At present, GOP policy strongly favors public sector storage of basic grains over private storage. This policy is motivated by a desire to maintain control over a sector of the economy that is perceived to have a very high political and economic importance. There are long-term cultural and historical reasons for public sector involvement in this sector which are related to food shortages and the critical importance politically to avoid food crises in the country.

Until recently, there was a ban prohibiting private sector off-farm storage of wheat, except for small amounts held for limited periods, which effectively prevented the gathering of reliable information on off-farm, private sector storage. Private sector off-farm facilities for long-term storage of grains (over three months) are believed to account for less than 10 percent of the total. Moreover, grain is rarely held by the private sector for periods exceeding a few months, which limits the losses suffered.

There is increasing evidence that the GOP is becoming more receptive to private sector involvement in basic grain storage, paralleling developments of increased private sector participation in other parts of the agricultural system. The lifting of limitations on off-farm storage, mentioned above, and the recent rescinding of the ban on inter-provincial trucking of wheat are two indications of such a trend with regard to privately-held stocks. There are also signs that the Government is moving toward greater privatization of storage for its own stocks. For example, the Government has recently inaugurated a program whereby private investors can construct facilities for rental to the provincial storage authorities, financed in part by loans from the Government.

The FSMP will assist the GOP to review policies aimed at increased private involvement in grain storage as part of the ongoing analytic activities of the Economic Analysis Network under the Economic and Policy Analysis component. This issue, which is being addressed at length in a forthcoming study financed by the World Bank Grain Storage Project, will also receive attention as part of the study of bulk storage under the FSMP, which is designed to supplement the findings of the Bank study. (See Sections II.B.4. and III.D.3.)

3. The Role of Other Donors

The FSMP builds on and supports the work of other major donors in Pakistan, complementing their efforts in the areas of both economic and policy analysis and post-harvest management. The only donors currently providing assistance in the former sub-system are the IBRD and FAO and in the latter area, the IBRD, FAO, and the ADB. The Mission has held numerous discussions with representatives of these three donor agencies throughout the design of this project, and there is mutual agreement and complementarity not only with the nature of the project component activities but also with the policy issues which will be addressed under the FSMP. (See Section II.E.)

4. Impact on and Role of Women

Although a significant involvement of farm women has been reduced by the decision not to finance improvements in on-farm storage, the project will nevertheless benefit women, both directly and indirectly, by virtue of their roles in the agricultural sector as farmers, processors, marketers, analysts, and Government employees. (See Section V.C.)

5. Project Complexity

All three components of the project will be implemented through the Federal Ministry of Food, Agriculture and Cooperatives. Within this Ministry, the Planning Unit will be responsible for the EPA and ADC components and the Food Division will be responsible for the PHM component. At the provincial level, the counterpart agencies will be the Provincial Departments of Food and Agriculture for all three components.

Other agencies such as PARC, PIDE, APC, universities, research entities, and private sector firms will be involved in the economic and policy analysis research program and the post-harvest management technology research program. In addition, the Provincial C&W Departments will play a major role in the implementation of the grain facility rehabilitation program. Nevertheless, responsibility for overall coordination and management of these project components involving other agencies will lie with the Ministry of Food, Agriculture and Cooperatives at the

Federal level and the Provincial Departments of Food and Agriculture. Furthermore, as discussed in Section IV., work plans will be developed and approved for both research programs mentioned above as well as the rehabilitation program which clearly delineate roles, responsibilities, and relationships among all participating agencies. In addition, a Project Coordinating Unit (PCU) will be established in the Mission's Office of Agriculture and Rural Development to assist AID to carry out its administrative and monitoring responsibilities for this project. (See Section IV.)

6. Relevant Science and Technology (S&T) Bureau Projects

Both Kansas State University and the Denver Wildlife Research Center have been closely involved in the design of this project. As discussed in Section III.F.4., the Mission plans to draw upon the services of several existing S&T Bureau projects during implementation in the areas of post-harvest management, agricultural policy analysis, and remote sensing.

F. Contributors to the Project Paper

(See Annex M.)

II. BACKGROUND

A. USG-GOP Negotiations

The United States Government and the Government of Pakistan are into the third year of a renewed and strengthened effort to increase their economic and development cooperation. High level USG-GOP consultations in 1981 culminated in the negotiation of a $3.2 billion package of military and economic assistance, which the U.S. agreed to provide to Pakistan between FY 1982 and FY 1987. This assistance package is an indispensable contribution to the shaping and implementation of a new U.S.-Pakistan relationship and to the critical role that Pakistan plays in the region.

The economic assistance component was designed to achieve the maximum development impact while providing as much support as possible to Pakistan's balance of payments. The economic assistance program, which continues a tradition of cooperation between the two countries, seeks to help Pakistan to fulfill the basic human needs of its people. At the same time, it is designed to address the country's foreign exchange needs through quick-disbursing activities that lay the foundation for economic growth and stability in the future.

The program agreed upon will:

1. reactivate a long-term development assistance relationship, which is important because of Pakistan's size, levels of poverty, strategic location, and other multifaceted US interests;

2. provide balance of payments support to help address short and medium-term foreign exchange shortfalls, thereby reducing development constraints and strengthening the economy;

3. address key economic problems, which will help Pakistan to achieve self-sustaining growth and manage its debt burden;

4. complement and support IMF, IBRD, and other donor initiatives and program assistance and accentuate their overall impact; and

5. expand resource availability for local cost financing.

The Food Security Management Project has been developed in the context of the ESF program in Pakistan. It supports the objectives outlined above, particularly with respect to the need to address key economic problems and to complement multilateral initiatives. It also supports the Government of Pakistan's efforts to ensure food security for its people and to improve the

management of the country's economy, thereby promoting political and economic stability.

B. Country Setting

1. The Agricultural Sector

Agriculture is the largest sector in the Pakistani economy, accounting for nearly one-third of the gross domestic product, employing over half of the labor force, and contributing approximately 50 percent of export earnings. In part through the impact of the "Green Revolution" on domestic production of wheat and rice, Pakistan has now achieved self-sufficiency in both crops, with a small exportable surplus in some years. Wheat production totalled nearly 12.2 million metric tons in the 1982/83 crop year, while rice production surpassed 3 million metric tons.

Pakistan's agricultural production is concentrated in the irrigated areas of Sind and Punjab provinces, with both yields and total production lagging behind in the rainfed areas of these provinces, as well as in Baluchistan and the NWFP. The grain production that provides the basis for Pakistan's self-sufficiency has its principal source in the former two provinces, where 10 of the nation's 69 districts account for over half of national wheat surplus production. The rest of the country supplements its output with grain imported from these 10 districts. Even in the grain belt of the largely irrigated Indus River Valley, crop yields are estimated to be only half of the current potential. Only one crop is grown each year in irrigated areas, which is well below the 130-150 percent cropping intensity achievable there. Thus the potential exists to substantially increase Pakistan's production of basic grains, if the appropriate mix of policies, institutional support, and infrastructure can be put in place.

Agricultural production is almost entirely within the private sector, and provision of inputs is increasingly being transferred to private merchants and manufacturers. In marketing and storage, however, the picture is mixed, with the private sector handling fresh produce almost exclusively, and both public and private sector agents heavily involved in procuring and storing basic grains. The government is particularly active in purchasing and storing wheat for distribution through the subsidized ration shop system and in ensuring an adequate price for producers.

2. The Economic and Policy Analysis Sub-System

Over the last few years, the GOP has moved progressively to implement a set of policies designed to promote more rapid development of the agricultural sector. These include policies to promote the availability of production inputs on a

broader and more timely basis; rational input-output price relationships, including higher producer prices for basic food crops; and improved output marketing. These policies have contributed to the steady rise in the production of the strategic crops of wheat, rice, and sugarcane.

As the agricultural system productivity expands to produce a surplus for the export market, policies based on improved economic analysis will continue to play a critical role in ensuring the efficient and productive use of the nation's resources. The transition to a partial export orientation raises a range of important policy issues that must be addressed if the economy is to continue to grow in the future.

To develop the information and policy guidance needed to address these and other policy issues, Pakistan relies on analytic resources from a range of institutions. These include the analytic staff of the Ministry of Food, Agriculture and Cooperatives, housed primarily in the Planning Unit (PU), as well as a number of public and private sector institutions. The economic analysis work performed by these institutions can be categorized into three types:

a. Primary analysis, completed quickly with available data or small-scale surveys, designed to provide near-term guidance to policy-makers on issues of immediate concern.

b. Secondary analysis, completed in a longer time frame (generally two to six months), based on available data and small- to medium-scale data collection efforts, performed in response to a specific request for information from an agency or policy-maker facing a policy decision in the near future.

c. Tertiary analysis, including studies undertaken over a period of six months or more based on original data collection or in-depth analysis of available data, designed to provide long-term guidance to policy-makers, focused on issues that may or may not be recognized currently as of high priority.

Although the type and level of analysis vary distinctly from one category to another, a single analytic effort may combine aspects of each category. For example, an institution may perform a piece of primary economic analysis, providing immediate guidance on request, as the first part of a larger effort of secondary or tertiary analysis.

Nearly all of the analysis of agricultural issues performed in Pakistan is primary analysis. There is some tertiary analysis, but it tends to be academically-oriented, with little relevance to issues of importance to decision-makers. There is almost no

secondary analysis, which should be the heart of the analytic system.

The principal institutions involved in economic analysis of agricultural issues, whether as producers or consumers, include the following:

a. The Agricultural and Food Section within the Federal Ministry of Planning and Development: is involved primarily in the preparation of planning documents, drawing on analytic works provided by others, and conducting some primary policy analysis based on available data.

b. Planning Unit of MOFA: performs primary analysis almost entirely, but may commission or participate in secondary and, rarely, tertiary analyses.

c. Pakistan Institute of Development Economics (PIDE): a major national research institute performing secondary and tertiary analyses, with a research staff of 90 professionals and a current workload of approximately 100 projects, roughly one-third of which are in the agricultural sector.

d. Applied Economic Research Center (AERC), Karachi University: a small but active institute with a well-qualified staff that has completed a range of secondary and tertiary economic analyses on agricultural policy issues.

e. Pakistan Agricultural Research Council (PARC): undertakes only a limited amount of economic and policy research through its Social Sciences Division, but has been somewhat more active in planning and coordinating such research.

f. Agricultural Prices Commission (APC): a major user of analyses with a limited capacity in primary analysis.

g. Punjab Economic Research Institute (PERI): a 45-person institute within the Punjab Provincial Government, focusing primarily on project design, investment planning, and other research with little involvement to date in economic and policy analysis.

h. NWFP Economic Research Institute (NERI): a small institute that undertakes relatively little analysis at present.

In addition to these public sector institutions, there are a number of private sector consulting firms and non-profit organizations that are increasingly active in agricultural economic analysis. The quality of their work varies greatly.

In general, the analytical research by these institutions relies heavily on basic summarization of existing data, with relatively little in-depth analysis, statistical or otherwise, and only sporadic efforts to collect original data. The principal constraints to more and higher quality analysis directed at priority issues are:

a. The lack of trained personnel: The limited number of highly trained analysts is spread across several institutions which have neither the support staff needed to do efficient policy analysis, nor the organization to mount an effective graduate program to expand the human resource base.

b. Inadequate data: Basic agricultural data on cropped areas, yields, price response estimates and other more specific data needed for analysis are unreliable and inadequate.

c. Inadequate data processing capability: Although there are nearly 50 large main-frame computers in-country, the analytic institutions listed above do not have ready access to them, nor have they been able to take advantage of the tremendous advances made recently in the development of small, inexpensive, but powerful mini- and micro-computers. The suitability of these smaller machines for economic analysis has rendered administratively and technically cumbersome time-sharing arrangements on larger machines virtually obsolete.

d. Inadequate support and guidance from the policy level: No structure exists to set analytic priorities or to channel resources in accordance with such priorities. As a consequence, analytic efforts have tended to be performed in isolation from each other and from the policy-makers. This, in addition to the frequent poor quality of the research/analysis, contributes to policy-makers placing little reliance on formal analysis to aid them in decision-making.

3. The Agricultural Data Collection Sub-System

In the current system, the responsibilities for collection of basic agricultural data are divided as follows:

a. The Provincial Departments of Food and Agriculture (DFAs) have the primary responsibility for collecting agricultural data, which they undertake through a network of crop reporters on the basis of a sample of villages in each province.

b. The PU/MOFA has little involvement in and responsibility for coordinating data collection. It is currently primarily a user of the available data at the federal level, provided by the Provincial Departments of Food and Agriculture and/or the Federal Bureau of Statistics.

c. The Federal Bureau of Statistics is responsible for approving the methodology used in agricultural data collection activities and the data as collected, and for coordinating data collection activities across agencies.

d. The Provincial Revenue Departments collect agricultural data at the level of the individual farmer through the network of patwaris, to provide information on agricultural income as part of their continuous monitoring of economic activities. This data provides the final check on early planting estimates and is the sole source of annual livestock data.

Information flows within and between these organizations on both a formal and an informal basis, eventually emerging in published form for broader application. The principal problems with the operation of this system are essentially three:

a. Reliability. The basic agricultural data are widely acknowledged to contain numerous inaccuracies, generally created by non-sampling errors. Pressures to meet production goals of five year development plans can possibly distort data, but technical problems created by lack of transportation, ADP facilities, and training plus the obvious bias generated by linking revenue and taxation with the collection of basic raw data are also likely and important sources of inaccuracies.

b. Timeliness. Agricultural data are not available on a schedule as needed, which not only impedes analysis, but also makes it difficult for the GOP to make critical planning and economic decisions. Inaccurate and untimely estimates of the wheat and rice crops, in particular, force the GOP to attempt to make last-minute arrangements for the sale or purchase and/or movement and storage of basic grains, often at a significant cost. Lack of ADP facilities for the efficient handling of data is also a significant problem. Often, however, even after data are summarized, they are not released because of administrative or political reasons.

c. Efficiency. The current system tends to be inefficient. Because it requires a very large sample, no data have been collected on variables of interest,

e.g., minor crops. It is a stratified sample of villages within the province based on the total cropland of the previous year. The new Master Sample, which is a listing of all villages and crops, is the basis for establishing the sample used to collect data. Increasing the sample size will introduce more non-sampling error and create increased logistic and supervision problems. The proposed system, to be introduced under this project, using the Area Sampling Frame is based on land use and can therefore provide more accurate results with a much reduced sample size and a consequent reduction in non-sampling error. A sampling frame based on land use provides homogeneity to data collection and greater accuracy from a small sample.

Progress has been made in improving data collection efforts in the Punjab and Sind, and the infrastructure exists to do an excellent job of meeting data needs in Pakistan with improvements in the sampling frame. However, in Baluchistan and the NWFP, data collection is just beginning and the needed infrastructure does not exist. The current system nationwide has evolved over the past three decades, with donor support beginning with assistance from FAO and the World Bank in the 1960s. An earlier attempt was made to implement an Area Sampling Frame, but it foundered for lack of mapping materials and because of the strong orientation toward the village as a unit of measure plus the ease of obtaining data through the revenue system. During the 1970s, USDA/SRS provided technical assistance in sampling and other methodologies to improve the reliability of data in the Punjab and, to a lesser degree, in Sind. Assistance focused primarily on wheat data, in response to governmental concern with the lack of a reliable basis for projecting import needs.

The following were identified by the USDA/SRS design team as the principal constraints to the greater availability of reliable agricultural data on a timely and cost-effective basis:

a. Accessibility of mapping materials, aerial photography Landsat imagery and topographical maps for development of the area frame, plus availability of same for the Tribal Areas.

b. Unclear and overlapping responsibilities for data collection within the provincial and federal governments.

c. Shortage and inefficient use of existing automated data processing facilities.

d. Creation of cumbersome administrative procedures by the Statistics Act of 1975.

e. Difficulty in obtaining information in politically sensitive tribal and border areas.

f. Political pressures to meet production targets, and the need to arrive at a "final" set of estimates agreeable to all agencies.

4. The Post-Harvest Management Sub-Sector

Growth in Pakistan's wheat and rice production over the last five years has led to increased surpluses in the major production districts of the Punjab and Sind as well as a slight surplus on a national basis. Between PFY 1975/76 and PFY 1980/81 crop years, wheat yields rose 16 percent and rice yields increased by 5 percent. Total wheat production increased by about 75 percent from 6.9 MMT in PFY 1971/72 to 12.2 MMT in PFY 1982/83.

As domestic wheat production has displaced imports, the pattern of crop disposal has altered. On-farm consumption has increased by over 50 percent over the last decade, but the marketable surplus has nonetheless grown from 3.8 MMT in PFY 1971/72 (55 percent of production) to 7.4 MMT in PFY 1982/83 (61 percent of production). Government procurement has grown far more rapidly than open-market sales to absorb increased production. While government procurement accounted for only 18 percent of off-farm sales in PFY 1971/72, by PFY 1980/81, it had reached 3 MMT per year, absorbing roughly 42 percent of the off-farm surplus and 25 percent of total production. Unofficial estimates for the PFY 1983/84 crop indicate a total procurement of 3.8 MMT.

The GOP operates a voluntary procurement system whereby farmers may choose to sell to either private agents at the open market price or to government procurement centers at the official price. The government procures at a fixed price until it achieves its desired quota. It may continue to procure to support the official floor price if necessary, as long as it has adequate storage space. Thus the failure of private sector merchants to take up a larger share of the increased production is due to limited private demand for wheat, rather than restricted access to supply. Private sector demand, in turn, is held down by subsidized public sale of wheat, which is viewed by the GOP as the keystone of the social support system and an area where political and equity considerations outweigh the potential efficiency gains from greater private sector involvement.

As a result of these policies, the majority of off-farm storage facilities are public sector. Public sector storage facilities provide a total of approximately 3.5 million metric tons of storage, spread across the entire country but concentrated in the major grain producing regions of Sind and the Punjab. Most of this storage capacity is in smaller warehouses or godowns of 500 to 16,000 MT capacity. There are a few larger facilities of 40,000-50,000 MT capacity. With the addition of facilities constructed with assistance from the World Bank and ADB, total public sector storage will rise to 4.9 MMT. Of this,

approximately 300,000 MT will be owned by the quasi-governmental Pakistan Agricultural Storage and Service Corporation (PASSCO). Private sector capacity is estimated at only 300,000 MT, exclusive of the facilities to be constructed under the lend-lease program described below. The remainder belongs to the provincial DFAs and is used for their own storage or, in part of the Punjab, is leased to PASSCO.

The actual storage capacity is greater than the official rated capacity by a factor of approximately 1.5, because the amount stored in a given facility can be increased by raising the depth of grain stored or by forming bulkheads out of bagged grain to permit partial bulk storage. Using these means as well as short-term rentals from the private sector and open storage, the GOP was able to raise the amount actually stored to over 5 MMT in mid-1982. These practices are generally undesirable, since they increase both the cost of storage and the percentage of losses.

It is difficult to assess whether existing storage capacity is sufficient, since public sector storage requirements are a function of future procurement levels, production, private storage, and desired reserves. GOP officials indicate that they would prefer to maintain a grain carry-over on the order of 2 MMT, including a permanent reserve of 350,000 MT, but current facilities permit a carry-over of only 1.0-1.5 MMT. (The FAO-recommended carry-over is 1.3 MMT.) An additional consideration supports the view that current storage may be insufficient; the GOP was forced to store over 1.2 MMT of the grain procured from the 1982 crop in the open, on railway platforms, brick plinths, and bare ground.

The GOP is currently moving toward providing the private sector with a larger role in grain marketing. This has been prompted in part by the perception that the risk of a serious shortfall in procurement has been greatly reduced by the achievement of self-sufficiency in wheat. This commitment is indicated by the lend-lease program referred to above, whereby the goverment will provide partial financing for private construction of storage facilities to be rented to the public sector storage authorities.

Based on private sector involvement in the past, there seems to be little optimism among Provincial Food and Agriculture Department officials that this program will produce any significant amount of warehouse space because monetary incentives are few under the fixed price system currently in operation. In any case, the policies encouraging increased private sector involvement in grain storage--both on its own account and as a provider of public storage--are too recent to have affected the total storage sub-sector appreciably. The public sector thus retains the responsibility for long-term storage and is likely to continue to do so for several years to come.

The principal institutions involved in the grain storage sub-sector are the Provincial Food and Agriculture Departments and PASSCO, with more limited involvement by the Federal Food

Division of the MOFA and the National Logistics Cell (NLC), which is involved in silo construction. At present, the Provincial Departments play the lead role, procuring and storing grain primarily to meet the needs of the provincially-operated ration shop system. PASSCO, which is the implementing organization for both the IBRD-financed and recently approved ADB grain storage facility construction projects, owns less than ten percent of the total storage capacity and acts as an agent for the provincial government in both storage and procurement. PASSCO procurement is limited to several of the major grain-producing districts in the Punjab and amounts to roughly 30 percent of total government procurement.

Several universities and other research organizations conduct research on grain storage technologies, including pest control, but the volume of research is low, and very little of the work is directed toward application of known technologies to Pakistani conditions. These institutions provide almost no support to the actual operation of grain storage facilities in Pakistan, whether public or private sector.

Although there clearly are areas for improvement in on-farm and private sector storage, quality control and losses are believed to pose more severe problems in the provincial storage system, in terms of both the rate of loss and the absolute amounts of grain lost or damaged in the system. The major problems in the public sector post-harvest management sub-system may be summarized as follows:

a. Grain losses in storage are high. Public sector storage losses are estimated to be 5.1 percent for wheat and 3.8 percent for rice, both figures well above acceptable industry standards of 1.0 to 1.5 percent.

b. The deterioration of storage facilities makes proper management difficult. Leaking roofs, cracked and poorly surfaced walls that are difficult to clean or seal, and inadequate handling equipment inhibit efforts by facility managers to improve their performance.

c. Management systems do not encourage minimization of losses nor provide adequate information on which to base management decisions. The actual rates of loss in provincial facilities are not known with any degree of certainty, making it difficult to structure incentives at the managerial or operational level to raise grain management standards, reduce physical losses, and improve efficiency.

d. Quality control measures are inadequate, endangering the health of the employees as well as increasing losses. While the basic procedures are sound (cleaning, spraying, fumigation, and inspection), these practices are not applied, timed, and coordinated in a

manner that leads to maximum effectiveness, efficient use of chemicals, or employee safety and consumer protection. A lack of adequate training for employees at both the managerial and operational levels contributes to this situation.

e. Integrated pest management practices are not followed. The heavy reliance on a few chemical pesticides to control insects (primarily malathion and phosphine) increases the cost of pest control and raises the danger that pests will become resistant to these chemicals, requiring heavier applications or use of more powerful and costly chemicals, with increased risk to humans.

f. Little technology application work is done either to adapt technologies to Pakistani conditions or to transfer improved quality maintenance techniques to operational personnel. Current programs in these areas are both extremely small and limited to laboratory and survey research, with virtually no adaptive or applied field research and little if any involvement of researchers in training storage personnel or solving problems in the field.

C. Policy Options and Dialogue Opportunities

As described in the recently submitted Country Development Strategy Statement (CDSS) for Pakistan for the period FY 1986-FY 1990, USAID/Pakistan is currently engaged in a meaningful dialogue with the Government of Pakistan on key agricultural policy issues under the Agricultural Commodities and Equipment Program (391-0468), the PL 480 Program, and the Irrigation Systems Management Project (391-0467), as well as the proposed Management of Agricultural Research and Technology (391-0489) and the Reform of the Agricultural Technology Transfer Network in the NWFP (391-0488) Projects. The Food Security Management Project, which is focused primarily on improving the analytical and policy formulation framework of the agricultural sector in Pakistan, provides an opportunity for AID and the GOP both to strengthen their on-going dialogue and to expand it to include additional priority agricultural policy issues.

The Economic and Policy Analysis (EPA) component of the project seeks to build local capacity for economic and policy analysis, including both the analytical ability to undertake such analysis and the willingness of policy-makers to use these analyses for policy decision-making. Under the project, the priority areas for policy studies will be established by a high level GOP steering committee, the priorities translated into researchable activities by an Economic Analysis Group, and the research undertaken by Pakistani member institutions of the Economic Analysis Network. AID will participate throughout this process, which will provide an organized forum for undertaking a meaningful

dialogue with the GOP on priority agricultural policy issues.

The following topics are likely areas for constructive participation by AID in an expanded policy dialogue with the GOP:

1. Food security strategy, including the determination of optimal buffer stock levels, balance between competing grain storage aims (price support, price fluctuations, strategic reserve), and trade policy for the basic grains.

2. Price policy, especially the procurement price for basic grains and the prices of major inputs to grain production.

3. Public versus private sector involvement in storage and marketing, including the role of the ration shops in the food security system, as well as private participation in storing grains. The latter includes private sector participation in storing privately-owned grain, in owning and managing storage facilities for public or private grain, and in managing and maintaining privately or publicly owned facilities.

4. Impact on nutrition of food security policies, with particular reference to alternative strategies for assuring food security for low-income groups.

5. Availability of agricultural data to non-government and government sources to facilitate informed decision-making.

6. Division of responsibility between the public and private sectors, particularly the increased use of private sector institutions to carry out functions on behalf of the public sector (e.g., performance of economic or agronomic research by private groups on contract rather than directly by the GOP).

This project also provides the vehicle by which AID will join the IBRD and ADB in a meaningful dialogue with the GOP on major policy issues in the post-harvest management sub-sector. As described in Sections III. and VI., a major study of O&M recurrent costs of all public sector grain storage facilities and a management audit are planned early on in the project, which will provide the information needed to assist the GOP to develop a long-range plan for meeting O&M recurrent costs and to address major policy issues in the sector.

Finally, given the nature and implementation schedule of the activities proposed for financing under this project, the FSMP is likely to have a significant impact on the formulation of the agricultural goals, policies, and priorities of the GOP's Seventh Five-Year Plan for the period PFY 1988-1992.

D. Lessons Learned

The design of the FSMP is based on AID's broad experience in supporting the agricultural development of Pakistan, as well as on the experience of AID and other donors in economic and policy analysis, agricultural data collection, and grain storage. The following lessons, drawn from experiences in Pakistan and other countries, influenced the design of this project:

1. Governments, particularly in the developing world, have great difficulty in building sustainable capacity for economic and policy analysis, due to politicization of the process and structural barriers to the retention of skilled personnel. A promising alternative to attempts to build such capacity "internally" is to focus on building "process" capacity, that is, the ability to draw on a range of public and private sources to conduct economic and policy analysis, with the government policy unit focusing primarily on the definition, coordination, and interpretation of analysis done by others. This approach requires broadening the institution-building concept to include the "peripheral" (often private sector) institutions as well as the "core" public sector units.

2. A productive policy dialogue requires both analytical excellence and sensitivity to cultural and political conditions.

3. Coordinating research activities is most effective when accompanied by funding areas where more research is desired and when coordination is separated from an effort to control the research agenda of participating institutions. Previous attempts to coordinate research, both AID-funded and otherwise, have failed when they were not linked to the availability of funds but depended entirely on good will and "jawboning" to achieve the desired results.

4. Centralized computer facilities rarely work as planned when designed for use by several institutions. The economies of scale offered by large, centralized facilities have been found to be outweighed by the delays, poor service, and cumbersome procedures imposed on users from outside the parent organization. Particularly as computer facilities become less expensive and easier for the non-specialist to operate, the benefits of such centralized facilities have diminished. The presence of a readily accessible facility (in terms of physical proximity and ease of operation) has been shown to increase the use of automated data processing by analysts and managers alike.

5. Construction, conversely, is most effectively performed by a centralized agency, unless a decentralized capacity already exists. Parallel to the logic discussed above

with reference to economic and policy analysis capacity, it has been found that organizations without engineering and construction cells can complete construction tasks most efficiently by contracting the work out to an organization that already has this capacity, whether in the public or private sector. Creation of an internal construction cell is duplicative and a poor use of resources, especially if it serves no apparent purpose after the project is over.

6. "More data" is not equivalent to "more information." Plans for data collection--either short-term or continuing--should be made in a cost-benefit framework, where the costs of data collection are interpreted to include the actual cost of collecting the data, as well as the cost of analyzing and interpreting it. Experience suggests that governments tend to err on the side of collecting too much data, sacrificing the quality of the data collected and the ability to process and interpret the data in a timely fashion. Examples abound of data collected but never tabulated or compiled too late to be of use. In calculating the benefits of collecting additional data, the actual use to which the data will be put must be defined, to determine whether the level of detail and disaggregation sought is actually necessary for the decision or only "nice to have." Equally important, experience indicates that statistical systems too often rely on the size of the sample to correct for deficiencies in the definition of the sample frame and the quality of the data collected.

E. Other Donor Assistance

The FSMP builds on and supports the work of the other major donors in Pakistan, complementing their efforts in the areas of both policy analysis and post-harvest management. The proposed data collection activities continue U.S. assistance to an area where the other donors have traditionally not been active in Pakistan. The major activities of the other donors may be summarized as follows:

1. EPA

The IBRD (including IDA) and FAO are currently supporting improved policy analysis and increased coordination of research through the following activities:

a. The IBRD's Agricultural Research Project will promote the development of agricultural economic research capacity at the provincial and federal levels and reinforce PARC's capacity to coordinate social science research, while supporting bio-technical research in the country.

b. The IBRD's Technical Assistance Project will, *inter alia*, improve the economic and policy analysis capacity

within the Agricultural Prices Commission.

c. The FAO will provide an advisor to the PU/MOFA for a one-year period (not expected to overlap with the advisors provided by the FSMP) and will finance training and commodities for this unit, which should lay the groundwork for the more intensive effort planned under this project.

2. Post-Harvest Management

Major activities are underway or about to begin by the IBRD and the ADB, respectively, both focused on construction of new grain storage facilities, and a smaller FAO program in on-farm losses is planned. These activities may be summarized as follows:

a. The IBRD is providing $32 million for the construction of 540,000 MT of new storage by PASSCO and a range of studies, commodities,training, technical assistance and research to improve the management of stored grains. The proposed PHM program has been reviewed and discussed with Bank officials on a number of occasions to ensure that the activities proposed in this project complement rather than duplicate the Bank's initiatives. The Bank's representatives in Pakistan support the AID project and regard it as reinforcing their negotiations with the GOP.

b. A recently approved ADB project ($41.0 million) will finance construction of approximately 500,000 MT of new storage capacity, also to be executed by PASSCO, as well as the establishment of a Federal wheat quality testing and inspection laboratory, training, and technical assistance in construction and operation of silo complexes.

c. The FAO is funding a survey of post-harvest on-farm losses as part of an effort to improve on-farm technologies. The results of this study are expected to be available in the latter part of 1984.

F. Relationship to GOP and AID Policy, and Other AID Projects

1. Relationship to GOP Policy

The growth strategy for Pakistan's economy in the Sixth Five-Year Plan (1983-1988) contains five major policy objectives, of which three are specific to the agricultural sector. Paraphrased, these three objectives include: increased agricultural yields through more efficient use of primary inputs

and technology; an expansion of export markets for wheat, rice and other agricultural commodities; and increased self-sufficiency in oilseeds. In this regard, the overall agricultural development goal of the GOP is to maintain the steady sector growth rate of the last five years (over four percent per annum).

The term "food security management" is not used or referred to explicitly in GOP development plans. However, the agricultural development goals, objectives and policies described in the Sixth Five-Year Plan are inherently linked with improving the nation's overall food security. The need for a more timely and efficient information system combined with an enhanced framework for policy analysis and formulation has been explicitly identified. In this regard, the elements of the agricultural sector that will receive priority attention during the next five years include: pricing, procurement, transport, storage, and processing. Furthermore, improvements in management of the existing storage system are explicitly recognized as being crucial to a more effective cereal grain marketing system.

The project will have a direct, positive impact on these priority concerns and will improve the capacity of domestic research firms, agencies and institutions to develop and analyze alternative strategies for implementing policies to attain the stated goals and objectives of the GOP. The FSMP is therefore consistent with and supportive of Pakistan's overall development goals in agriculture.

2. Relationship to AID Policy

a. Policy Dialogue. The EPA component is specifically designed to support policy analysis and to strengthen and expand the policy dialogue with the GOP on a range of agricultural policy issues. The PHM component will also provide an opportunity for AID and the GOP to engage in a dialogue on key policy issues in the grain storage sub-sector. The ADC component supports the policy dialogue indirectly by providing improved and more timely data to policy-makers.

b. Technology Transfer. While all three components embody aspects of technology transfer, the ADC component is most explicitly focused on the transfer of technology, in this case, the application in Pakistan of a data collection technology originally developed for U.S. agriculture and since applied successfully in at least ten countries around the world.

c. Institution-Building. The EPA component is intended to promote the development of Pakistan's institutions in economic and policy analysis. This will be accomplished through training, technical assistance, and other direct support to individual resource institutions. More importantly, this development will be sustained through the creation of an innovative institution, the EAN, that will lead to greater coordination and encourage a multiplier effect in institutional development by

promoting the transfer of technology from one institution to another within the network. The ADC component will provide institution-building assistance to increase capacity in data collection of both provincial and federal agencies. The PHM will promote institution-building within the Provincial Food Departments, to be achieved primarily through short-term, in-country management and technical training, degree level training at agricultural universities in Pakistan and in the U.S., short-term, non-degree training in the U.S. and technical assistance.

d. Private Sector. The Pakistani private sector will play a major role in implementing this project and will benefit directly from the institution-building and technology transfer elements of the project. Private sector institutions will participate, as members of the EANG under the EPA component, in the local economic and policy analysis research program and also in the local grain storage research and technology program to be implemented under the PHM component. Private engineering firms will assist the provincial DFAs develop grain storage facility rehabilitation plans and priorities and prepare the final designs and cost estimates. It is also anticipated that most of the rehabilitation work will be done by local private contractors. Interested private sector management and operational personnel are also targets for the in-country training programs focusing on storage facility repair and management under the PHM component. Finally, and perhaps most importantly, the role of the private sector will be a major factor in most of the economic and policy studies financed under this project, including the comprehensive study of O&M recurrent costs in the grain storage sub-sector. It is anticipated that these studies and the on-going policy dialogue will result in increased private sector participation in the food security sector in Pakistan.

e. Asia Bureau Strategy. The Asia Strategic Plan notes that:

> "Asia-wide we will sharpen and intensify the current focus on analysis and reform of economic policies, the design of science and technology elements in the program, and the strengthening of institutions critical to the development process.
>
> ". . . technical assistance will be a large part of the program.
>
> "Increased emphasis will be placed on developing the institutional and manpower resources necessary for countries to plan and implement their own development efforts. . . . We will do this by providing high payoff scientific and technical assistance and by continuing our commitment to training. . . . Improved economic analysis capacity to deal with policy issues . . . will also characterize our agriculture and rural devlopment efforts."

The objectives of the EPA component are entirely consistent with the Plan. Technical assistance is a major input in all three project components, and the project also has significant science and technology elements. The strengthening of institutions--through technical and management training, both in-country and abroad--is also a major feature of this project.

f. USAID/Pakistan CDSS

A stated objective in the USAID/Pakistan's FY 1986-FY 1990 CDSS is to enhance production and income generation in Pakistan's agricultural sector. This is to be achieved by working with the GOP to develop, strengthen and maintain the institutions, human skills and knowledge required for generating, managing, and implementing the technologies necessary for the self-sustaining development of Pakistan's agricultural sector. Food security is identified as an area in which AID will concentrate assistance to implement the strategy. The CDSS notes that technical assistance and training will be provided to Pakistani institutions to strengthen their capacity to undertake food policy research and develop strategies for implementing policy. Assistance is to include improvement of the methods and systems for collecting and organizing information and data to effectively perform ongoing analysis, and to increase storage efficiency of the basic agricultural staples. The project is clearly consistent with and logically flows from the Mission's CDSS.

3. Relationship to Other AID Projects

a. USAID/Pakistan Projects/Programs

As mentioned previously, the FSMP will reinforce and complement the on-going policy dialogue between AID and the GOP under the PL 480 Title I and the Agricultural Commodities and Equipment Programs. In addition, the FSMP will contribute to the development of the Pakistan Agricultural Research Council (PARC) as an effective agricultural research institution in Pakistan, which is a major objective of the proposed Management of Agricultural Research and Technology Project. PARC and other agricultural research institutions are expected to be key members of the EAN, and PARC, in particular, will serve as the coordinator and the focus of the local grain storage research and techology transfer program to be financed under the FSMP. Given that the NWFP Agricultural University and Provincial Research Institutes in the NWFP will also be members of the EAN as well as participate in the grain storage research program, the FSMP will also reinforce the objectives of the proposed Reform of the Agricultural Technology Transfer Network in the NWFP Project.

b. Centrally-Funded Projects

During implementation, the Mission is likely to continue to draw on centrally-funded projects in grain storage

technology and pest management. In addition, under the EPA component, support provided by the new centrally-funded Agricultural Policy Analysis Project is expected to be utilized. The centrally funded Remote Sensing for Agriculture Project was the vehicle for introducing the ASF system in many countries and proved the application of this technology in developing countries. Support in obtaining LANDSAT imagery will most likely be requested through this centrally-funded project for the implementation of the Area Sampling Frame.

G. Project Rationale

Food security is a high priority for the country's development and one where U.S. technologies are of particular relevance to Pakistani conditions. Within food security, the project strategy emphasizes improved management of the country's food system and recognizes the following three requirements as critical to food security:

1. The <u>policy set</u> chosen to achieve food security objectives should be based on careful and well-directed analysis of the issues, including clear identification of the costs and benefits associated with alternative courses of action and thorough examination of the objectives themselves.

2. The decisions must be based on reliable <u>information</u> regarding the status of production in each year, the basis of farmers' decisions on production of strategic foods, and the stocks in each part of the system.

3. Once a course of action has been selected, decision-makers must be able to rely on a <u>system</u> for collecting, transporting, storing, and delivering grain to the ultimate users. This system, which includes the physical facilities, the personnel operating them, and the management practices whereby the system is operated, must function efficiently, storing sufficient quantities at a reasonable cost with minimal quantitative and qualitative losses.

The Project's three components parallel these three requirements. In each case, the specific interventions have been chosen to focus on the problems identified as key constraints in Section II.B above. The level of effort and the mix of resources provided by the project have also been selected taking into consideration the sources of the problems identified and the development needs of the agricultural sector as a whole. Thus, for example, the policy analysis component is not limited strictly to food security issues, which conceptually cannot be separated from other agricultural policy questions. This component also addresses the need to establish a sustainable capacity

for policy analysis, rather than simply to complete a single cycle of well-constructed analysis. The ADC component, similarly, focuses on the basic system for generating agricultural data, rather than only the collection of data on wheat and rice, since it is necessary to consider the system as a whole in order to effect a lasting improvement in the data collected.

The PHM component is directed at the physical food security system concerned with the management of the existing off-farm storage facilities. However, this focus excludes both the construction of additional facilities and other physical sub-systems such as on-farm storage, grain collection and transport, and milling. These areas are deemed inappropriate for the PHM component of the FSMP because they are already targeted for assistance by other donors (i.e., milling, on-farm storage, storage construction) and are judged to be a relatively minor source of inefficiency and grain losses.

The activities in each area will complement and reinforce each other and the programs of other donors. In particular, both the ADC and PHM components are intended to support the policy analysis activities of the EPA component. The stronger base of essential production and yield data provided through the ASF methodology will clearly assist analysts to obtain an accurate picture of the current agricultural situation as the basis for sound policy analysis. The information on grain storage management gained through the post-harvest management activities will also support the analysis of critical decisions affecting the operation of the physical system, including relative merits of direct public sector operation and greater private sector participation in managing public as well as private grain stocks.

In summary, the proposed approach to food security management is designed to affect each of the major aspects of the food security system and is judged to offer the best prospects for sustained improvement in the whole system. In addition, the FSMP is supportive of and logically flows from the basic framework of the ESF program in Pakistan which is to promote economic and political stability.

III. DETAILED PROJECT DESCRIPTION

A. Introduction

The three principal components of the Food Security Management Project (FSMP)--Economic and Policy Analysis (EPA), Agricultural Data Collection (ADC), and Post-Harvest Management (PHM)--will be carried out independently. Nonetheless, each activity is linked with the others at key points in its implementation. In the detailed descriptions that follow, these linkages are identified. The closest connections are established between the EPA and ADC components, which are related to each other both through the nature of the activities themselves and through the central role played in the implementation of each by the Planning Unit (PU) within the GOP Ministry of Food and Agriculture (MOFA).

B. Project Goal and Purpose

1. Goal

The goal of the Project is to achieve the food security objectives of the GOP in a manner consistent with the rational and efficient use of national resources, overall economic development of the country, and an improved standard of living for farm families and the population at large.

2. Purpose

The Project purpose is to improve the analytical and policy formulation framework, the managerial capabilities, and the physical capacity of the GOP to manage the national food security system effectively and efficiently. Achievement of the purpose will be demonstrated by the existence of the following conditions upon completion of the Project:

a. A national network of analytic resources is in place addressing priority policy issues in food security management through quality, relevant economic analysis.

b. An improved agricultural data collection system, based on the area sampling frame methodology, is in place and providing reliable data on a systematic and continuous basis.

c. The provincial storage system is operating with reduced grain losses at a lower cost per unit stored due to the enhanced state of godown repair, better trained personnel with access to modern and appropriate storage technology, and improved management practices (including an effective maintenance program with a sufficient budget).

C. Project Outputs

The Project will produce the following outputs:

1. An established Economic Analysis Network Group that is well-organized and fully staffed with qualified personnel.

2. An ongoing agricultural economic and policy analysis program based on an annual research agenda developed by a high-level MOFA steering committee.

3. An established national area sampling frame in place with trained personnel at all levels.

4. Rehabilitation completed on approximately 750,000 MT of storage godowns and responsible implementing agencies staffed with trained personnel utilizing improved management practices.

D. Project Components

1. Economic and Policy Analysis (EPA)

The EPA component will consist of two principal sub-components:

a. The establishment of an Economic Analysis Network to coordinate and implement an increased quantity of policy-relevant analysis by Pakistani institutions and the development of these institutions' capabilities for analysis, research, and training.

b. A Special Studies Program to address key issues in the food security area.

The two EPA activities represent two different approaches to increasing, both quantitatively and qualitatively, economic and policy analysis in Pakistan. The second sub-component takes the more traditional approach to economic and policy analysis: performance of individual studies carried out primarily by expatriate advisors in collaboration with local researchers to answer specific policy questions. The first component represents an approach directed toward the development of local analytic capacity to conduct priority policy analysis. This approach does not rely on the establishment of a self-contained unit in the Ministry of Agriculture (or any other "consumer" of policy analysis such as the Ministry of Planning), but instead on establishing a capacity within the GOP to carry out the economic and policy research process by mobilizing the capacity of other institutions (both private and public) to complete the actual analysis. Despite the contrasting approaches used, the second sub-component may be viewed as an extension of the first, which is a more

flexible and decentralized approach, using an international research institution to carry out analyses that are currently beyond the capacity of local institutions acting alone.

This approach, which may be termed "process capacity-building" to differentiate it from the standard approach of building "internal capacity" within the user ministry, may be better suited to the needs and constraints of Pakistan. As discussed in Section II.D. above, experience with the "internal capacity-building" approach has repeatedly indicated that the challenge is to retain analysts in the system, to direct their skills toward addressing priority economic policy issues, and to establish the capacity to interpret and utilize the results of analysis to achieve actual improvements in agricultural policy. Process capacity-building does not reduce the need to raise the capacity of central government units, but it shifts the focus of this capacity from actually doing the analysis to "getting it done," by mobilizing a broad range of local resource institutions. In order to perform this task effectively, the central unit must have capacity in many areas other than analysis *per se*, including the definition of priorities, mobilization of analysts in the private and public sectors, coordination and monitoring, and utilization of the results.

a. The Economic Analysis Network

The FSMP will assist the GOP to develop its capacity for analysis of agricultural issues through the formation of an Economic Analysis Network (EAN) that brings together public, private, and semi-autonomous institutions in a semi-formal association, the aim of which is to increase the long-term quality and supply of policy-relevant analysis for the agricultural sector. The EAN will increase analysis on three levels. First, it will establish a capacity within the Ministry of Agriculture and other central government "consumers" of analysis to acquire the analytical information needed for improved decision-making. Second, it will increase the capacity of Pakistani institutions to conduct such analysis. Finally, it will lay the groundwork for continuing improvement in the analytic process by indirectly increasing national capacity to train future analysts. To accomplish these aims, the EAN sub-component will consist of the following activities: (i) formation of the EAN; (ii) strengthening of member institutions' capacity; and (iii) analysis of priority issues by EAN members.

i. Formation of the Economic Analysis Network

The EAN will function as a semi-formal association linking the "consumers" and "producers" of analysis. The functions of the EAN will be the following:

- Definition of agricultural economic and policy analysis priorities;

- Mobilization of Pakistani resources and institutions to address these issues;

- Coordination and monitoring of analysis of these issues;

- Exchange of data, information, analytic techniques, and results among member institutions; and

- Improvement of national capacity for economic and policy analysis.

The EAN will not control the budgets nor internal management of member institutions, approve research programs (except those with funds controlled by the EAN), nor decide to accept or act upon the recommendations made as part of the analysis undertaken. The membership of the EAN will include the following:

- Ministry of Agriculture units, including the PU, PARC, and other MOFA units that may undertake primary analysis on their own;

- Ministry of Planning, Agricultural Cell;

- Other "consumers" of analysis, such as the Agricultural Prices Commission and the National Fertilizer Development Centre;

- Agricultural universities; and

- Other resource institutions, both public and private sector, such as the Applied Economic Research Center (AERC) at Karachi University or the Pakistan Economic Research Institute with the provincial government of the Punjab.

Within each member institution, analysts and other professionals will be identified to form a roster of national analytic resources that will provide the human resource base for carrying out the EAN's activities. By the end of the Project, it is expected that most of the Ph.D. and M.S. level economic analysts in Pakistan will be actively involved in EAN activities.

The EAN will undertake analysis to address a range of economic and policy issues. Its work will be guided by a Steering* Committee composed of the Minister of Agriculture and other key

*This Committee may be the GOP's existing Federal Committee on Agriculture.

agricultural decision-makers, plus a representative of the Ministry of Planning. The Steering Committee will determine the priorities for analysis by EAN members and serve as an audience for completed analysis.

The EAN will be managed by a core management committee, the Economic Analysis Network Group (EANG). The membership of this group will be limited to 12 or fewer members, each serving at the discretion of the Minister of Agriculture. The group will include at least one representative from each of the five groups listed above. The chair will rotate annually among the members; the first chairperson will probably be the PU/MOFA's member. Members will be appointed by the Minister of Agriculture in consultation with member institutions and will serve for a period determined by the Steering Committee. The EANG will appoint other individuals to form sub-committees or working groups for specific purposes.

ii. Economic and Policy Analysis

After the EAN is formed and the Steering Committee has identified analytic priorities, the EANG will define a program of analysis to address these issues. On the basis of this program, the EANG will coordinate an expanded analytic effort by member institutions. Project resources will be provided to finance research proposals submitted to and approved by the EANG in line with its analytic program. To the extent possible, the network institutions will provide part of the financing for each project, but the project-provided funds will play a critical "pump-priming" role in bringing institutions into the EAN process.

While the specific research topics will depend on the priorities established by the Steering Committee and the interests and abilities of the EAN members, the following have been identified as probable areas of concentration during the early phases of project implementation:

- Price policy, including production costs, supply response to input prices, and response to output prices;
- Structural changes within public organizations to increase efficiency and policies toward increased privatization of publicly-owned institutions;
- Economically rational cropping patterns;
- Public versus private processing and storage issues;
- Impact of farm and retail prices on other sectors;

- Food consumption needs and demand for food commodities; and

- Import and export policy, trade, and comparative advantage.

The activities undertaken in these areas will include formal economic and policy analysis, data collection, and implementation analysis to explore practical issues connected with the adoption of recommended changes. Analyses will include primary, secondary, and tertiary analyses, with the complexity of the techniques used increasing as the project progresses.

The analytic agenda approved by the EANG is expected to place particular emphasis on analyses geared toward providing guidance on how existing policies can best be implemented, although some will be directed toward reexamining or refining the existing policy set to promote more rapid and equitable development of the agricultural sector. The emphasis on implementation analysis grows out of the perception, shared by the donors as well as GOP decision-makers, that agricultural policies are basically sound, following major changes adopted over the past several years. Major attention is needed, however, on actual implementation of these policies, including the role of the public and private sectors in carrying out initiatives identified as needed.

The analytic activities will include data collection as well as analysis per se. Data collection is expected to decrease gradually as the basic data available are improved through the FSMP-financed activities in the data collection component. However, special data needs for particular analyses will continue to arise throughout the project.

Farm management data collection requires support in order to provide improved information on farm input/output costs and returns as a basis for establishing prices and policies. While the data collection system introduced through the ADC component of this project will ultimately provide considerable information on farm management, data at the provincial or district level cannot serve the same analytic purposes as detailed farm management data collected through frequent visits to a limited number of farmers. After a review of existing farm management data and ongoing programs to collect it, a determination will be made as to whether such a detailed farm management study should be carried out.

If it is decided that the existing system will not provide the data needed for the EAN analysis program, the PU/MOFA or another network member institution will be identified to undertake a farm management study on behalf of the EAN with project support. Depending on the results of the review of existing programs, this study may be implemented as a new effort or by expanding and improving one of the existing programs. In the event that the review determines that such a study is not necessary (whether

because existing programs will provide adequate data or because there is no immediate audience for such data), the funds provided for this purpose will be reprogrammed to finance other analyses.

If the EAN and expanded analysis of agricultural development issues become institutionalized, then the resources available for such analysis must become part of the recurring budget of the GOP. The EAN will not function in the absence of funding. While the FSMP will provide only a temporary source of funds, the Project is intended to demonstrate to decision-makers the value of analysis and of the network itself. If successful, this demonstration should lead to sustained funding. At the same time, due to the perennial shortage of operating funds for all purposes, continued funding for analysis after the Project is only partly dependent on the Project's success in creating a demand and appreciation for such analysis among decision-makers. A major task of the EANG and technical assistance team will be in the fourth and fifth years of the Project when they must identify methods of ensuring sustained funding for analysis.

iii. Support to Member Institutions

The FSMP will provide support to increase member institutions' capacity to conduct analyses of agricultural issues. This support will take the form of short- and long-term technical assistance; short- and long-term training, including degree training in the United States; provision of micro-computers and other analytic equipment needed to complete the analyses efficiently; and other inputs as described below.

The support provided will achieve four aims. First, it will increase the analytic capacity of member institutions in the short-term. Second, it will increase the capacity of the MOFA and other institutions to meet their needs for analysis by mobilizing national resources more effectively. Third, it will promote long-term increases in national analytic capacity, particularly in EAN member institutions, by training their staff and by indirectly improving the training provided to future analysts. The latter will be accomplished by providing data sets that can be used for analysis as well as graduate and undergraduate training and by encouraging graduate student participation in studies. This approach could raise the standard of excellence in graduate and undergraduate education and indirectly raise the standards of faculty skills, training, and experience. Fourth, efforts will be made to focus analytic effort on priority problems and policy issues.

iv. Support Needed for the EAN Activity

To support the development of the EAN and the analytic activities undertaken under its auspices, a long-term team consisting of two agricultural economists will be

provided through a competitively awarded contract. The team leader will advise the PU on issues related to the formation and operation of the EAN and the EANG, while the second advisor will provide technical assistance to EAN members in the implementation of their analytic activities. In both cases, the advisors will function primarily as "facilitators," rather than taking an active or lead role in the analysis itself. From time to time, they may participate in specific studies of particular interest or where their personal backgrounds are especially relevant, but in general, they will concentrate their time and efforts on supporting the coordination and implementation of analysis through EAN member institutions. Approximately 45 months of expatriate short-term technical assistance and 10 months of Pakistani technical assistance will also be provided in the areas of statistical and economic analysis and policy analysis techniques, including up to 10 months for the farm management study if undertaken. Short-term advisors will both participate in analyses and conduct in-country training.

Training, both short-term in-country and long- and short-term training in the U.S., will be provided to personnel from the MOFA and EAN member institutions. The type of training provided will be in keeping with the responsibilities of each individual in the policy analysis process, whether as a producer or consumer of analysis. Thus, in-depth training in analytic techniques will be provided primarily to institution personnel, while training for ministry personnel will instead focus on the design and interpretation of agricultural analysis as well as the coordination, monitoring, and management of research efforts.

The Project will provide long-term degree training totalling approximately 516 months for 15-20 individuals (depending on the mix of M.S. and Ph.D. training). Approximately 30 months of short-term U.S. training will be provided, in addition to 15 months of in-country training courses conducted by the technical assistance team for a total of approximately 200 individuals. Depending on the need, such training might include short sessions in survey design, sampling techniques, data management, statistical/analytical techniques, operation of micro-computers, and the like.

The Project will finance policy analysis activities up to a total of approximately $4.5 million by EAN member institutions, including one or more farm management studies. Within this program, the type and duration of the studies will vary as a function of the topics addressed, the mix of "primary," "secondary," and "tertiary" analysis, and the resources available. Consequently, this figure cannot be translated into a meaningful "quantity" of analyses. It may be interpreted as equivalent to approximately 60 "secondary" analyses (assuming the farm management study proceeds as indicated).

Both the ADC and the EPA components will be implemented through the PU/MOFA. The administrative location of these components in the PU responds to the need to coordinate and centralize the flow

of agricultural statistics where it can be passed on in a timely manner to MOFA policy-makers and analysts. The existing PU administrative and professional staff, however, are limited, and the management responsibilities that these two components would generate require additional personnel devoted specifically to project implementation.

The FSMP Project will provide total budget support for all additional PU staff requirements to implement components 1 and 2 of the project for the first two years of each person's employment with the PU, after which time the GOP will establish positions and absorb the costs of these individuals by increasing the recurrent budget of the PU/MOFA. The PU administrative staff requirements include: project director--1; economics and statistics research officers--2; section officer--2; stenographer--2; and clerk/typists--3. The section officer will fulfill the function of accountant and, along with the stenographers and clerk/typists, will support both Project components.

Since the operation and duties of the EANC will be shared among other MOFA economic analysis agencies, the PU will not have an immediate need for additional professionals beyond the overall project director and economic research officer. The former will assist the head of PU with implementation of both Project components, while the economics research officer will deal solely with the EPA component. The additional staffing requirements for the ADC component at the federal and provincial levels are discussed in Section III.D.2. below

The Project will also finance up to seven micro-computers which are compatible with the equipment provided under the ADC component and, to the extent feasible, with available equipment in the member institutions. Two project vehicles will also be provided for the long-term team members and other project-related uses.

b. Special Studies Program

At least two research activities will be financed under the FSMP and implemented by the International Food Policy Research Institute (IFPRI) in cooperation with Pakistani research institutions. Examples of topics which could be addressed are:

i. Food Grain System Modeling. This study will develop an analytical framework for quantitative evaluation of alternative food supply and price stabilization policies to provide a basis for continuing analysis and decision-making by the GOP.

ii. Ration Shop System and Alternatives. Under this research activity, two studies will be financed, one addressing the impact of the ration shop system on food

distribution and the other exploring the impact of alternative policy sets on food consumption and nutrition in low-income groups.

Each such study will be completed over a 24-month period. In each case, the majority of the work will be completed at IFPRI headquarters following initial field work in Pakistan, supplemented by additional research activities by the collaborating Pakistani researchers in both Pakistan and Washington.

An IFPRI economist will be involved in each study, assisted by an IFPRI research assistant. The two Pakistani collaborators, each aided by a Pakistani research assistant, will be involved full-time in the ration shop study and three-quarters' time in the food grain modeling study, respectively. Three surveys will be conducted in Pakistan, including one farm-level survey, to provide the information needed for the second study. All computer analysis will be completed using IFPRI's existing facilities.

As the Economic Analysis Network develops, IFPRI is expected, whenever and wherever possible, to coordinate and liaise its data collection and analysis activities with those of EANG. In addition, the same Pakistani collaborators that work with IFPRI should eventually become members of the EAN.

i. Food Grain Modeling Study

The study will construct an econometric model of the wheat system in Pakistan, based on historical data for the last 15 to 20 years. The model will be constructed on the basis of econometric estimates of parameters in five interrelated behavior equations covering output, total absorption, concessional sales, procurement, and trade (imports and exports).

The model will identify the important interactions between policy and production variables in the wheat system. It will also provide estimates of the change multipliers in major environmental and policy variables as they affect five dependent variables of critical relevance: wheat production, open market prices, government stocks, trade, and government expenditures. The findings will be used to project values for these five variables over a 10-year planning horizon.

The model will permit the Government of Pakistan to explore the impact of alternative courses of action. For example, the model will estimate the impact on the other variables of a policy set designed to minimize Government expenditures. Private versus public sector involvement in grain storage will be assessed in support of policy issues to be addressed under the PHM component. The model will also be designed so that the actual values for subsequent years can be entered to update the model as a guide to decision-making in each crop year. In addition to predicting the

impact of various policies under "normal" conditions, the model will also provide estimates of the impact on key variables of exogenous shocks including production shortfalls, foreign exchange shortages, and acute limitations in the Government budget.

ii. Ration Shop Study

The ration shop study will provide guidance to policy-makers on food security policy from the perspective of the grain consumption sub-system, thus balancing the information to be provided on the production, marketing, and storage sub-system. The study will have two components. The first will examine the ration shops themselves, measuring their effectiveness in achieving their objectives when compared to alternative strategies. The study will address the following four questions:

- How are the benefits of ration shop activities currently distributed among population groups?
- How cost-effective is the program in generating increased food consumpton and improved nutrition among the poor?
- What are the magnitudes of leakages, waste, and fraud?
- What feasible alternatives are available (i.e., public versus private sector role in the food marketing system) and how do they compare in terms of distributive impact, cost-effectiveness, total cost, impact on demand, consumption, nutrition, and effect on agricultural incomes?

Wherever possible, this study will be based on data currently available (such as the 1979 household income and expenditure survey) and on surveys of urban and rural households and of ration shops.

The second component of the ration shop study will explore the implications of selected policies for food consumption and nutrition of the poor. The Project will increase the availability of information on the impact of key policies through the preparation of a model that can be used to estimate this impact on the basis of current and periodically updated information. The model likely to be used initially to measure the nutritional impact of the following four illustrative policy options:

- Increasing domestic prices for edible oils
- Increasing milk prices

- Reducing open market sugar prices (with or without a termination of subsidized supplies)

- Partial reliance on rice to meet shortfalls in wheat supplies (with and without changes in subsidies and rationing)

The model is also likely to be used to explore the consumption and nutritional impact of two important ongoing changes: the displacement of minor grain and pulse production by increasing wheat acreages and the impact of remittance incomes.

The model will consist of two sub-models, one covering urban consumers and the other covering the rural landless and small farmers. The urban sub-model will include a demand function for each major food commodity, an intra-household distribution function, and, if data permits, a function linking food prices and urban wages. The second sub-model will include, in addition to these functions, a labor demand function for major agricultural commodities. The model will utilize data from the 1979 household survey mentioned above, supplemented by a survey of 1,000 poor farm households nationwide.

The value of the model constructed will be greatly increased if it is updated and used in future years to provide policy-makers with information not now available. The model will therefore be developed in cooperation with a Pakistani research institution (such as the AERC or PARC) and installed in their facility. This will permit it to also be used for teaching and research.

2. Agricultural Data Collection (ADC)

a. Introduction

The Agricultural Data Collection (ADC) component will modify the existing basic agricultural statistics collection system with a more accurate and efficient one designed around the area sampling frame (ASF) concept. This data collection technology has been tested in ten countries and provides the basis for the system used in the United States. As applied in Pakistan, it will include the following elements:

a. The area sampling frame, a statistical method of selecting an agricultural sample based on the objective characteristics of the agricultural system, rather than artificial political boundaries. The ASF permits a high degree of accuracy from a much smaller sample than currently used in Pakistan, thus greatly reducing data collection costs.

b. An objective measurement of yields on major crops using scientific growth models on data from selected samples within the ASF.

c. A quarterly schedule for collection and dissemination of basic agricultural data providing earlier estimates necessary for good economic analysis, planning and policy decisions by the GOP.

d. Automated data processing (ADP) system for compilation and analysis of raw data collected, making agricultural data at national and provincial levels available to decision-makers on a more timely basis, and reducing errors associated with hand processing.

The ASF methodology proposed for this Project constitutes a substantial modification of current sampling techniques. It is proposed that the present agricultural data collection system will continue and operate parallel to the ASF until such time as the ASF is fully operational. The Departments of Food and Agriculture (DFAs) will retain the present responsibility for collection and initial processing of data and will continue to pass estimates to the appropriate federal ministries and other authorities as soon as they are available. The data collection activities of the revenue departments' patwaris will not be affected by the new system.

The ASF component deals primarily with the regular, ongoing collection of basic agricultural data, but the same frame can be used to draw samples to meet the needs of other economic studies. While the ADC component will increase the availability and reliability of official published data on the agricultural sector, it will not eliminate the need for researchers or others with special needs to collect detailed data which go beyond the basic set collected by the DFAs.

b. The Area Sampling Frame

The first and most critical stage in the implementation of the ASF methodology is the construction of the area sampling frame itself. In the case of Pakistan, this will be carried out in the following five steps:

i. A set of land use categories or strata will be defined, based on the pattern of Pakistani agriculture. Five to ten categories of land use will be identified, covering the main levels of intensity (e.g., irrigated single cropped, irrigated double-cropped, rainfed single-cropped, intermittent rainfed, mixed pasture and crops). Land strata may also be established for land uses of special interest, such as forests, grazing land, orchards, urban land, swamps and other barren land.

ii. A mosaic map will be assembled for each of Pakistan's four provinces, using aerial photos, LANDSAT imagery, and other maps of provincial villages available for the present data collection system.

iii. The entire area of the country will be classified according to the land use categories identified, using the mosaic map. To the greatest degree possible, the borders of these strata will be defined so that they are internally homogeneous and as distinct as possible from adjoining strata.

iv. The area of each strata will then be measured from the master map.

v. As the final step, all strata will be divided into segments. Each segment must be of equal size and its borders must be readily identifiable on the ground, e.g., by roads, watercourses, or field boundaries. It is expected that an efficient segment size for Pakistan will be about 200 acres; that is, a unit including perhaps 10-20 farmers that can be covered by a single enumerator in one to two days' work.

Once the ASF is constructed, it will be used to select a random sample of units for actual data collection. While in theory the ASF could then be discarded, in reality it is desirable to select a new sample each year or at least a partial rotation of the sample. Moreover, the ASF itself is an extremely valuable tool, since it can be used to construct special samples for specific purposes, e.g., special economic studies on marketing or costs of production, as well as to expand the data base normally used by the statistical service. It is important to maintain the ASF materials and to update the frame from time-to-time as production practices change, such as the expansion or development of new irrigation.

Because of political and security reasons, aerial photos and maps for certain areas (i.e., Tribal Areas, border areas with India and Afghanistan, and military reservations) may not exist or are not accessible. These cases are not expected to be numerous nor present insurmountable problems. For instance, agricultural land in the Punjab and Sind Provinces, which directly borders India, is fortunately homogeneous with land types and uses in adjacent tracts which can be stratified and surveyed, allowing for simple extrapolation of the results to cover the unsurveyed areas.

Regarding remote Tribal Areas in NWFP and Baluchistan where maps and aerial photos may not exist and/or ground surveys may be resisted by the local populace, the problem is more complicated. However, given that these mountainous areas are very marginal in terms of overall provincial and/or national agricultural production, it may be desirable during project implementation to

postpone or even forego land stratification and survey work in these administrative units. Such an eventuality would not interfere with implementation of the ASF methodology.

In order to ensure that the ASF can be constructed successfully and completed in a timely and efficient manner, the majority of aerial photographs and mapping materials which do exist must be made available to the Project. Oral assurances have been provided by the GOP to A.I.D. in this regard. However, because of the critical importance attached to the availability of these materials, written assurance by the GOP of their provision has been made a Condition Precedent to Disbursement for the ADC component. (See Section VI, Conditions, Covenants and Negotiating Status.)

c. Data Collection Methods

Training will be required in order to successfully adopt the proposed ASF system. The actual data collection technique will not be new to the field staff, but training will be required to prepare them in the procedures and questionnaires used in data collection under the new ASF system. Controlled supervision will raise the accuracy of the crop reporters' data and reduce non-sampling errors. The stratified sample, improved training and supervision, plus controlled logistic support will increase accuracy, improve timeliness and increase credibility of published estimates. In addition to improving accuracy of area estimates, new objective yield measurement technology will be introduced to estimate crop yields while the crop is still in the field.

Timely and efficient collection and primary tabulation of data will also be supported through the provision of office equipment in addition to motorbikes for field statisticians and field vehicles for supervisory and project staff.

d. Quarterly Collection Schedule

Table 2 is an illustrative schedule for data collection and publication in the ASF/Pakistan system. This schedule has been developed by the USDA/SRS design team in consultation with officials of the DFAs and MOFA and is generally suited to Pakistan's two-crop seasonal cycle. Dates for data collection and dissemination will not vary from year to year and will be published a year in advance. As weather patterns change creating drought, and delayed planting and harvest, it may [illegible] necessary to do additional surveys (with a sub-sample) to me[illegible] their impact. In addition to these basic data, which will cover all crops grown in Pakistan, the data collection schedule will provide farmer-estimated yields for all non-major crops and scientific, objective yield estimates for five to six major crops in each season.

Table 2

Illustrative Annual ASF/Pakistan Data Collection Cycle

Date of Survey	Data Collected	Date of Publication
Dec. 15-Jan. 10	Winter crops (sown area)	Feb. 1
	Summer crops (final harvest)	Feb. 10
	Livestock and poultry inventory	Feb. 20
Mar. 15-Apr. 10	Winter crops (production forecast)	May 1
	Summer crops (intended planting)	May 10
June 15-July 10	Summer crops (sown area)	July 25
	Winter crops (final harvest)	July 30
Sept. 15-Oct. 10	Summer crops (production forecast)	November 1
	Winter crops (intended planting)	November 10

These scheduled publication dates would make data available to decision-makers and other users on a regular and predictable basis and should be met in order to establish confidence and credibility in the reporting system. This increased information will translate into potentially very large savings for the Government, resulting from the ability to provide earlier estimates of import needs or export potentials for major crops. "Panic buying" in the past resulted in losses to the GOP amounting to several hundred million dollars, due to the inability to schedule purchases in accordance with price fluctuations on the world market.

e. Automated Data Processing

The widespread availability of reliable, inexpensive automated data processing equipment that does not require highly specialized operators has eliminated the need to depend on costly and inaccurate hand tabulation of basic data. The FSMP will replace hand tabulation--one of the major sources of delay in making basic agricultural data available for decision-making and analysis--with automated compilation and

tabulation using a network of micro- and mini-computers. The Project will finance the following hardware, as well as the software and training needed to operate it:

i. A multi-user micro-computer for each of the four provincial DFA's statistical offices.

ii. A multi-user mini-computer (or micro-equivalent) for the statistical section of the PU/MOFA. As the program progresses and additional analytic capacity is needed at this level, a more powerful micro-computer or a mini-computer will be provided. The first machine will then be used for back-up data entry, programming for use on the provincial equipment, and as a spare.

iii. A mini (or micro-equivalent) for the Meteorological Survey's main office in Lahore. Hand tabulation has proven incapable of coping with the voluminous weather data collected on a national basis, some of which has never been compiled at all. Reliable meteorological data will become increasingly important as the GOP moves toward more sophisticated management of the food security reserve, when temperature and humidity data will be needed for growth modeling, development of objective yield measurements, and prediction of moisture movement.

All of the equipment to be provided will have full hardware and software compatibility. In addition to the above equipment, a micro-computer will be installed in the contractor's office identical to those provided to the provincial DFAs. Experience in other countries has demonstrated that this approach is extremely valuable, permitting the contractor's staff to develop or refine software as needed, to trouble-shoot problems with software or hardware, and to provide training to project participants on the equipment they are using in-country. At the end of the project, this machine will be transferred to the PU/MOFA to serve as an additional spare or data entry terminal.

f. Expanded Data Collection

The operation of the ASF system to provide provincial level estimates would save about 75 percent of the cost of the current system. However, the more complex system providing district-level data has been requested by the provinces, and provision will be made to produce some district data; even so, savings of up to one-third will be realized. One way of using the savings could be to reduce staff positions and related operating expenses, but a more productive use of the resource savings would be to expand data collected to cover areas now neglected and to include economic data, e.g., prices of

inputs and outputs, labor use, investment behavior, cost of production and market prices. The MOFA and the DFAs must decide if data collection in these and related areas of interest should be incorporated into the new ASF data collection system.

Data collection for economic data using the ASF would not begin until the third year of the new system's operation, when staff have been trained and experienced and understand how the ASF system operates. At that time, the cost savings can be judged more accurately. Prior to that time, gaps in the availability of basic economic data will be filled by the EPA component on the basis of one-time or panel surveys as appropriate to meet the needs of the analytic activities undertaken. As noted above, there will be a continuing need for special studies apart from the regular data collection activities of the DFAs. It would be expected that staff for these one-time surveys will be university graduate students. Assuming that the resources are available, the crop reporting system can also be used to support data collection for special studies. If not, the statisticians and others attached to the statistical services can still provide technical assistance to such efforts from time to time.

g. Transition to the ASF System

Implementation of the ASF in Sind and Punjab Provinces will require only a temporary increase in the level of resources currently devoted to data collection. The Departments of Food and Agriculture in these provinces already have well-established data collection wings with substantial personnel, technical and financial resources. However, in the Provinces of NWFP and Baluchistan where data collection activities are very limited or nonexistent, implementation and operation of the ASF will involve substantial and permanent increases in the budgetary and personnel resources of the respective Provincial Departments of Food and Agriculture.

In the Provinces of Punjab and Sind, the ASF system will require a temporary duplication of resources in addition to the direct costs associated with constructing the ASF and training staff in its use and related techniques. It is proposed to operate the ASF parallel to the existing data collection system until the ASF is fully operational in year three of the project. Therefore, additional staff will be contracted and financed with A.I.D. project funds to operate the existing system while regular staff selected to work on the ASF system are trained and integrated into it. These temporary staff will be phased out along with excess staff as the ASF is phased in and the existing system is phased out.

With the exception of several districts, implementation of the ASF in the NWFP and Baluchistan will not be duplicative because a regularized data collection system is not yet in place. However, provincial funds have been recently earmarked to either expand or establish data collection activities in the respective Provincial

Departments of Food and Agriculture. Consequently, A.I.D. project funds will be used not only to implement the ASF but to accelerate the institutionalization of data collection in these two provinces by temporarily hiring and training personnel who will ultimately be hired by the DFAs in these provinces.

The schedule for implementing the ASF system will depend on how much of the data will be collected on a district basis rather than solely on a provincial basis. The primary use for district data is to provide a guide for setting government procurement targets. District-level estimates do not increase the accuracy of the system. The collection of district data for wheat and rice in all districts would increase the cost of the ASF by approximately 150 percent (although this increase will presumably be limited to only the major production areas, covering part of Sind and Punjab Provinces).

Since, as mentioned above, the provinces have expressed a desire for district-level data, a decision will have to be made in the beginning of the project as to whether the ASF system should provide district-level data for some or all of the districts. In addition, a decision will have to be made after the third year as to the period of overlap between the two systems (one year, one season, or none). Some period of overlap is desirable to permit comparison of data and to determine whether reported changes in levels of estimates reflect actual changes in the agricultural systems or are merely results of the shift to a different system of data collection.

As stated earlier, the ASF system will also require the Federal MOFA, and in particular the PU to play a more active role in coordinating the operation of the system as a whole. While the provincial governments will retain their authority over data collection, the technical support and coordination supplied by the Federal ministry will increase to ensure that the nation's need for accurate agricultural statistics is adequately met. In addition to the training and equipment provided by the FSMP, the professional staff of the PU/MOFA's Agricultural Statistics and Economics Section will be expanded and upgraded to provide greater professional expertise. A.I.D. project funds will be used to finance the total costs of these additional staff for their first two years of employment, after which time the GOP will absorb these additional recurrent costs.

The statistical staff will be increased from five to fourteen and reorganized into the following units which are in addition to the statistical research officer (described in the previous section) and the officer in charge of the section: Sample and Questionnaire Design (four statisticians), Acreage (three statisticians), Yields (three statisticians), Livestock and Permanent Crops (three statisticians), and Publications (one professional). The expected deployment of the additional nine staff professionals to these existing units is: 3, 2, 2, 2 and 0, respectively. The existing and proposed organizations are illustrated in Figure 1.

Figure 1

Comparison of Existing and Proposed
Organization of the PU/MOFA*

```
    EXISTING                    Head, PU
PU/MOFA STRUCTURE                  |
                                   |
          ----------------------------|----------------------
          |                        |                        |
 Deputy  Director for   Deputy Director for   Deputy Director for
   Economic Surveys       Ag. Economics &      Farm Management
    (24 officers &          Statistics          (13 officers &
     other staff)              |                 other staff)
          ----------------------|
          |                        |
   Office for Ag.         Statistical Office
Statistics/Economics    for Crop Forecasting
 (5 investigators &        (investigator &
  6 assistants)            2 assistants)


PROPOSED                       Head, PU
PU/MOFA STRUCTURE             (no change)
                                   |
                  Project Director--Section Officer
                                   |
          ----------------------|----------------------
          |                        |                        |
 Deputy Director for  Deputy Director for  Deputy Director for
 Economic Surveys--     Ag. Economics &      Farm Management
          |                Statistics          (no change)
 Economic's Research              |
       Officer                    |
          ----------------------|----------------------
          |                        |                        |
   Officer for Ag.        Statistical Office     Statistical
Statistics/Economics    for Crop Forecasting     Research
          |                (no change)           Officer
          |
          |--- Sample & Questionnaire Design (4 professionals)
          |
          |--- Acreage (3 professionals)
          |
          |--- Yields (3 professionals)
          |
          |--- Livestock & Permanent Crops (3 professionals)
          |
          |--- Publications (1 professional)
```

*Planning Unit within the GOP Ministry of Food & Agriculture

h. Support Needed for ADC Activities

The project will finance right-hand and 4-wheel drive vehicles, motorbikes, 2 mini-computers, 6 micro-computers, 190 hand/desk calculators and 10 electric typewriters. The hiring of local personnel as temporary replacements (approximately 500-600 persons) for the regular statistical crop reporters who will be undergoing training during the transition from the old to the new system as well as staff for the DFAs in the NWFP and Baluchistan is a major cost which will be borne by A.I.D. and is estimated at $2.35 million over the project life. Budget support will also be provided to cover the costs of the expanded PU/MOFA professional and administrative staff for the first two years of their employment, after which time posts will be permanently established for them in the MCFA's regular recurrent budget. (See Section VI., Conditions, Covenants and Negotiating Status.)

Technical assistance will be provided by USDA's Statistical Reporting Service. Long-term and short-term assistance will be provided, including that used for in-country training. The USDA/SRS will provide one statistician in Project Year One to develop the ASF. Beginning in Project Year Two, it is planned that he will be joined by another statistician, and both will assist all four provinces to implement the system over the next three years. The short-term assistance will focus on data processing, sample frame development, sample selection, and training methodologies. Also, up to 15 months of home office support will be funded to provide backstopping services in programming and trouble-shooting.

Long-term M.Sc. training will be provided for six persons from the federal and provincial statistical services, to provide a core of personnel with the requisite statistical skills to continue to adapt the ASF system to Pakistan's needs. An additional 18 persons will receive six to twelve months of non-degree training in the U.S.

The illustrative training plan developed during Project design also calls for eight individuals to participate in short training courses in the U.S. totalling 26 months, and six individuals to be sent on invitational travel. In addition, the plan calls for approximately 370 individuals to participate in in-country training courses totalling 10 months. This program is expected to be refined during implementation, as specific training needs are more definitively identified.

3. Post-Harvest Management

a. Introduction

The Post-Harvest Management (PHM) Component will assist the GOP to improve the management of its national

grain storage system. Public sector storage has been identified as an area where loss rates are the highest in the total system and where, more importantly, the cost of the loss as well as the potential for reducing it are greatest.

The comparatively high cost of the loss is due to the large quantities stored in the public sector storage system and the relatively long periods that grain is held (up to a year or more). While quantities of equal or greater magnitude are held on-farm or pass through private sector storage facilities, neither sub-system is judged to be an appropriate target for A.I.D. assistance at this time. On-farm loss rates are generally believed to be one-fourth to one-half the rate in public sector storage facilities. The evidence available suggests that private millers and grain dealers experience quality and quantity losses, but the relatively short periods during which grain is held in this sub-system reduce the absolute magnitude considerably.

Reliance on existing public sector facilities will continue for at least a decade. Even if a policy decision were made to increase private sector involvement in storage, the time lag that precedes construction precludes a significant private sector capacity in the short-term. Should existing facilities be transferred to the private sector or to the quasi-governmental Pakistan Agricultural Supplies and Storage Corporation (PASSCO) in the future, the need remains urgent to reduce losses, increase efficiency, and halt physical deterioration in the near-term. All of the activities included in this Project component therefore would be equally valid should such a transfer of responsibility take place. In this context, the public sector storage system, both the physical infrastructure and the management systems for operating it, emerges as a high priority target for improvement.

Initially, the Project will assist the GOP to evaluate the existing public sector management systems, to identify improvements needed in the design and operation of these systems, and to implement these improvements. The subsequent activities undertaken in the PHM component will fall into two categories: those designed to make permanent changes in the operation of the system and those intended as one-time interventions to compensate for the effects of poor management in the past.

The one-time project interventions will arrest the progressive disrepair of cereal grain godowns through rehabilitation and maintenance and improve the short to mid-term storage operations of the GOP through better cost accounting and stock management. These interventions will be implemented as part of a program to effect fundamental GOP policy changes in managing the current PHM system. To facilitate this, a series of technical studies will be completed to insure that the relevant policy problems are identified and addressed.

The investment of A.I.D. resources in storage rehabilitation is explicitly linked to a resolution of the financial issues which underlie the history of rapid deterioration of capital stock in the public storage sector. The broad outlines of the problem are clear:

- R&M (repair and maintenance) is systematically under-funded.

- Facility managers have no incentive to manage their capital plants in ways which optimize the economic life of the facilities.

- The pricing arrangements for storage do not incorporate appropriate R&M costs.

- The fit between storage and marketing policies is poor, and stocks stay too long in public godowns because it pays for the wheat deficit areas to let the Government carry the costs of storage for as long after the harvest as possible.

A.I.D. and the GOP agree that they must first undertake a comprehensive analysis of the recurrent costs and management issues in the sector and develop specific policy recommendations which will correct these endemic problems. Only after the analysis is completed, the policy objectives are defined, and the GOP has agreed in writing (see "Condition Precedent 4" in Section VI) to take measures mutually agreed upon, will A.I.D. project funds be spent on any engineering or construction services related to the storage rehabilitation component.

It is the Mission's intention to contract directly with an experienced U.S. accounting firm which services major U.S. grain storage companies such as ADM, Cargills, Continental and the like to conduct the R&M study. This will not be an academic exercise, but rather a hard financial review and management audit which seeks to identify solutions to the underlying causes of capital stock depletion in the sector.

Not only is the relatively modest A.I.D. investment in storage at issue, but more than $75 million of IBRD and ADB funds are also going into new capital stock for public storage. The aim of the study will be to provide a set of financial management policies which will protect this entire new addition to the system from the fate of early deterioration which has characterized the sector to date. The recurrent cost analysis will be conducted within the terms of the A.I.D. Policy Paper on Recurrent Cost dated May 1982, and applicable U.S. accounting standards for cost recovery in comparable grain storage enterprises.

Once the above study has been undertaken and policy measures have been agreed to, project funds will be used to contract with a local architectural and engineering firm to survey existing godowns over five years old and to develop a rehabilitation plan

including a definition of rehabilitation needs and priorities, for each province. This study and the recurrent costs and management study will be undertaken during the first two years of the project, after which time, if agreement has been reached on the findings and recommendations of the studies, physical construction activities will commence.

Short-term training in pest management and grain quality control, cost accounting and monitoring, improved rehabilitation and maintenance practices, and stock control will address most of the pressing short and mid-term problems in public sector grain storage. However, the longer term needs in human resource development for PHM will be addressed by long-term, academic training financed under this project. These participant trainees will return to Pakistan to find an improved and preserved physical plant and management system in which to apply their skills and provide the basis for further improvements.

b. Component Activities

The PHM component will focus on measures to improve the management of the public storage system in five critical management sub-systems:

i. inventory control and stock management;

ii. financial and cost accounting;

iii. quality control of stored grains, including the use of effective and cost efficient pest control technologies;

iv. rehabilitation and maintenance of physical facilities; and

v. management and development of human resources.

Activities in the first area will necessarily take a "process" rather than a "blueprint" approach, using the Punjab as a laboratory for the development of improved management systems. The first step in this process, as stated earlier, will be an analysis of recurrent cost financing and a complete management audit of the system by a team of expatriate short-term advisors. GOP officials and the long-term team to be provided in storage management will work closely with this team. Following this evaluation of the existing system, the long-term contractor will work with GOP officials in the Federal Food Division and, initially, the Punjab Food Department to develop improvements in each of the five management systems identified above. These changes may range from minor modifications in existing procedures to entirely new systems of monitoring the condition of godowns, for example, or measuring quantity losses in stored grains. As appropriate, management assistance will also be made available to PASSCO.

The U.S. firm will provide nine person-months of technical assistance (three persons for three months each) during year one and eighteen person-weeks (three persons for six weeks each) in each of the following four years. The purpose is to provide an outside assessment of the progress being made and to provide recommendations for remedial actions in lagging areas.

As required improvements are identified and agreed upon, they will be implemented on a pilot basis within the Punjab DFA system, refined as needed, and then applied throughout the Punjab. The Project will provide assistance in the form of equipment and other commodities needed to implement improved maintenance systems, short-term training, short-term technical assistance, and appropriate long-term training in the U.S. or Pakistan. As appropriate, the management program will then be modified and adapted for introduction into the other provinces.

The process of identifying, testing, and applying improved management methodologies will be evolutionary as improvements in one area open up new possibilities in other areas or identify additional parts of the system that require attention. For this reason, it is not possible to specify in detail the precise mix of commodities and other inputs that will be needed during implementation.

The FSMP will finance activities in all provinces in each of the following three areas which have already been identified. This will pave the way for effective application of improved management techniques in the future.

i. Storage Management Training, to provide the human resource base necessary for improvement of the management and operation of storage facilities;

ii. Storage Infrastructure, to rehabilitate approximately 750,000 metric tons of storage capacity and promote improved maintenance of all facilities in the system; and

iii. Storage Technology Transfer, to identify and apply more effective and safer technologies for controlling pests.

The specific activities thus far identified and included in this component have been selected to ensure complementarity with the major IBRD/IDA Grain Storage Project and the recently approved ADB Foodgrain Storage Project. The activities of these three programs are compared in Table 3.

Table 3

COMPARISON OF IBRD, ADB AND AID GRAIN STORAGE ACTIVITIES

FIELD OF ACTIVITY	AID	IBRD/IDA	ADB
1. STORAGE INFRASTRUCTURE			
a. Storage construction	None	0.5 MMT wheat 0.04 MMT rice	0.5 MMT wheat
b. Storage rehabilitation	1. Survey existing facilities & develop rehabilitation plan, including design, schedule & costs 2. Rehabilitate 0.75 MMT		
c. Storage maintenance	1. Requires long-range plan with performance targets to meet O&M costs based on a comprehensive recurrent cost study and management audit 2. Assist in design and implementation of improved management systems	Requires increase of government expenditure to 1.5% of replacement cost	
2. STORAGE MANAGEMENT			
a. Management systems	Develop and implement improved systems for DFA storage, including necessary commodities and other inputs	Equipment for existing facilities that lack scales, etc.	Office equipment
b. Training			
Long-term	6 MS, 2 Ph.D.	35 MS	
ST overseas	44 person-months	27 person-months	18 person-months
ST study tours	10 person-months	21 person-months	
ST in-country	130 persons at 2 days 100 persons at 2.5 days 83 persons at 1 week (amount unspecified) 850 persons at 3 days 810 persons at 1 day Additional training to be defined during implementation in pest control, management systems, etc.	16 persons at 3 months 80 persons/yr. at 2 weeks on-the-job training	
Training Capacity	Mobile training cell to support grain lab program	Program conducted by grain tech. lab personnel	

FIELD OF ACTIVITY	AID	IBRD/IDA	ADB
3. STORAGE TECHNOLOGIES			
a. Grain Handling	Assess studies by other donors on design of bulk grain storage, including comparison with bagged storage	1. Pilot handling machinery installed in bulk and bagged facilities (10 sites) 2. Six grain testing laboratories	Establishment of Federal wheat quality testing and inspection laboratory
b. Pest Control	1. Integrated Pest Mgt.--PARC 2. Vertebrate Pests--Vertebrate Pest Control Centers--VPCC. 3. Insect pest resistance--PARC	Pest control and storage design research--PARC	
c. Extension	None	PARC program	
4. POLICY AND OTHER STUDIES	1. IFPRI grain modeling study (45 person-months) under EPA component 2. Comparison of public and private sector storage under both EPA component and as part of O&M recurrent cost study	Grain storage and processing study (30 person-months)	
5. TECHNICAL ASSISTANCE FOR ABOVE ACTIVITIES			
a. Long-term	2 storage management advisors	None	
b. Short-term	65 person-months in rehabilitation, storage management, bulk design, and research	54 person-months in grain transport quality control, mechanized grain handling, research and extension	12 person-months in construction and operation of silo complexes

c. Storage Management Training

The lack of training at all levels was identified during project design as a key barrier to improved performance. Under the project, therefore, a broad-based program will be carried out to provide training for management and operational personnel. This sub-component will also support the decentralized training capacity developed as part of the grain quality laboratory system established by the IBRD/IDA project.

The following categories of individuals will participate in the training activities financed by this project:

- Executives of the national and provincial food departments, PASSCO, PARC and other organizations;
- Operational administrators of the DFAs and PASSCO;
- Assistant Food Controllers at provincial and PASSCO storage centers;
- Operational personnel at storage centers, including food grain inspectors, food grain supervisors, and PASSCO storage inspectors;
- Operational personnel at procurement centers; and
- Interested private sector management and operational personnel.

The training program will include in-country seminars, short-term in-country workshops, and specialized intensive training as summarized in Table 4. This program will complement and support the training activities financed under the IBRD/IDA Grain Storage Project, which includes short-term and long-term overseas training and the establishment of an on-going training program for operational personnel. The latter is based on a series of two-week workshops carried out by the personnel of the six grain quality testing laboratories, who will provide training courses in grain quality measurement and quality maintenance on a quarterly basis timed to coincide with the procurement and storage activities of the major grains. Short-term U.S. training will also be provided for university and other personnel to broaden the availability of expertise for in-country training activities.

d. Storage Rehabilitation

In collaboration with MOFA counterparts, the consultant design team from Kansas State University's Food and Feed Grain Institute estimated that approximately 75 percent of existing GOP cereal grain godowns over five years old, totaling 1.0 MMT, require some amount of rehabilitation. Consequently, the FSMP will finance the rehabilitation of approximately 750,000 MT of storage capacity. This is equivalent to approximately 24 percent of total public sector storage.

Table 4
ILLUSTRATIVE IN-COUNTRY TRAINING PROGRAM IN STORAGE MANAGEMENT

COURSE TOPIC	DURATION	TARGET GROUP	NUMBER OF PARTICIPANTS IN EACH GROUP	NUMBER OF TIMES OFFERED
Conferences				
Executive Seminar on Wheat Quality	2 days	Senior GOP Personnel	35-40	1
Executive Seminar on Quality Maintenance of Stored Grain	2.5 days	Senior DFA & PASSCO Personnel	100	1
Workshops				
Grain Storage and Quality Preservation	7 days	Administrative Personnel (PASSCO & DFAs)	20-30	2
Management and Preservation of Grain in Silos	7 days	Administrative/Operational Personnel at Silos	20	1
Intensive Short Courses				
Grain Inspection and Preservation at Godowns	3 days	Operational Personnel (PASSCO & DFAs)	25 (850 total)	34
Grain Procurement	3 days	Procurement Center Personnel	25 (800 total)	32

The facilities to be repaired and rehabilitated belong almost entirely to the Provincial Food Departments of Pakistan's four provinces, which currently own and operate 91 percent of the total government storage capacity, equivalent to 84 percent of total off-farm storage. This level does not include the facilities to be built under the IBRD/IDA and ADB projects, most of which will also be managed by the provinces.

Under Pakistan's federal system, the provincial governments have the responsibility for the purchase and storage of grain and the operation of the ration shop system. As a result of a recent policy decision, PASSCO will assume the responsibility for storage associated with the national food security reserve (approximately 350,000 MT) and grain exports. For the foreseeable future, however, amounts stored for these two purposes will be minor in comparison to the needs of the ration shop and price stabilization programs.

The federal MOFA will also be involved in the coordination of project activities across provinces and in the implementation of improved management systems nationwide. Its involvement is in accordance with its role in coordinating the management of the system with the provincial governments, in an effort to ensure

that system operations meet national goals with respect to strategic reserves and support of the wheat price. The federal MOFA is also active in coordinating inter-provincial movements of grain.

The third group of institutions to be involved in project activities is composed of the provincial Communications and Works (C&W) Departments. The four C&Ws normally have the responsibility for maintaining the DFA storage facilities, and will be responsible for implementing the proposed rehabilitation program. As described in the Technical Analysis (Section V.A.3.), the rehabilitation work proposed involves relatively simple maintenance and repair work, and the C&Ws can do some of the work directly and/or contract some or all of the work at each site. For each facility, A.I.D. will finance 80 percent of rehabilitation work completed under a Modified Fixed Amount Reimbursement (FAR) Agreement and the GOP will finance the balance. The proposed reimbursement plan, which is based on a percentage of total estimated construction costs and the Modified FAR Agreement, closely follows that successfully utilized under the rehabilitation component of the Mission's on-going Irrigation Systems Management Project (391-0467).

The specific facilities to be rehabilitated will be identified through a FSMP rehabilitation plan for each province. The plans will be completed during the first phase of project implementation. Officials from the respective DFAs will work with the A.I.D. staff to develop the general priorities, work requirements and phasing for the facilities' rehabilitation. A.I.D. will contract a local Architectural and Engineering (A&E) firm to conduct an inspection and survey of the facilities proposed to be rehabilitated and develop plans and cost estimates for the work.

The rehabilitation work will either be contracted out by the C&Ws or some or all of the work at some sites could be done by the C&Ws' maintenance crews. The implementation procedure will be established based on the results and recommendations of the evaluation of storage management procedures and the rehabilitation plans to select the best operating mode. In any case, at least two qualified engineers will be hired with project funds by A.I.D., to be located in the Punjab and Sind DFA headquarters, to assist the DFAs with on-site coordination, scheduling, administration and inspection of maintenance and rehabilitation work, and certification of completed rehabilitation work. The USAID Office of Engineering will inspect completed work on a sample basis before approving A.I.D. reimbursement to the GOP.

The storage infrastructure sub-component will also include two activities designed to improve national capacity to maintain and rehabilitate additional facilities as needed in the future. First, short-term technical assistance and training will be provided to the C&Ws, PASSCO and interested private contractors in the use of epoxy resins to moisture-proof masonry-type structures. The use of this technology on existing and any new structures requiring moisture-proofing would be very valuable.

Second, the A.I.D. Project Agreement will reinforce and support the GOP commitment expressed in the IBRD/IDA loan agreement and the newly approved ADB loan agreement to increase the allocation of resources to regular maintenance and repair of the entire public sector grain storage network. The GOP has substantially increased the allocation for this purpose during the implementation period of the IBRD/IDA project which terminates in 1984/85.

On the basis of the comprehensive O&M recurrent costs and management study to be undertaken during the first year of this project, A.I.D. and the GOP will agree upon a specific set of policies and performance targets to be implemented during the life of the A.I.D. project with respect to R&M financing of public sector storage facilities. The A.I.D. Project Agreement will also contain a covenant under which the GOP agrees to provide to A.I.D. no less than annually, a report on its progress in achieving the agreed upon performance targets.

With regard to maintenance management, the previously mentioned storage management evaluation and assessments will include recommendations for improved maintenance operations and budgeting systems.

e. Storage Technology Development

The PHM component will support the testing of improved storage technologies under Pakistani conditions and their application to existing storage facilities. Three related activities will be financed as part of this sub-component:

- Human Resource Development, through long-term training to increase the availability of personnel trained in applied research techniques for storage technologies.
- Grain Handling Technology Development, through an in-depth study of the design of bulk storage facilities, including preparation of a design for such facilities adapted to Pakistani conditions, if warranted.
- Pest Control Technology Development, through programs of applied research and training in integrated pest management, control of insect pests, vertebrate pest control, and pesticide safety.

i. Human Resource Development

The PHM component will provide long-term graduate degree training for approximately eight Pakistani professionals. It is expected that three entomologists and three storage engineers will be trained to the M.S. level, while two entomologists will be trained to the Ph.D. level. Actual

training levels, however, will depend on the availability of suitable candidates and evolving program needs. Upon completing their training, the M.S.-holders will take up positions at agricultural universities in Pakistan, to conduct courses and to provide the core of a training and research cadre in grain storage in these institutions. Participants trained at the Ph.D. level will be assigned to the Grain Storage Research Laboratory or another agricultural research institute in the Sind or the Punjab and will work in support of developing a sustained grain quality control unit. The training program for these individuals will combine academic course work in the United States with participation in the other technology development activities of the PHM component as the basis for thesis research.

ii. Bulk Storage Technologies

While the majority of storage facilities can now be used only for storage in bags, the GOP's policy is to move increasingly toward bulk storage through the construction of additional bulk facilities and, if possible, conversion of existing "house-type" godowns to multi-use storage. Expert opinion differs as to whether this is a desirable move from an economic viewpoint. Bulk storage appears to be more expensive if grain must be transported to and from the facility in bags, as is now almost universally the case. If bulk transport is also available, the issue becomes more complicated.

The GOP is now making the final arrangements for a World Bank-financed study of major grain storage issues, including the bulk-versus-bag question. The findings of this study are expected within a year. The ADB Grain Storage Project, which was approved in December 1983, will also address this issue. If the studies conclude that additional bulk storage is advisable, then the FSMP will assist the GOP in determining the most efficient storage facility design for Pakistani conditions.

iii. Pest Control Technologies

Pakistan's storage programs are not currently benefiting from the technologies availabile for control of vertebrate and insect pests in stored grains. To address this problem, the FSMP will finance a program of applied research to support Pakistani scientists' efforts to transfer improved and proven pest control technologies to storage facility managers and operational personnel. This program will complement that funded by the IBRD/IDA Grain Storage Project and will focus on research in three areas:

- Integrated Pest Management. A range of pest control protocols will be explored in godowns located in each of the four provinces, with an emphasis on the Sind and the Punjab. Once an improved package of pest control

practices is identified, training and other inputs will be provided to implement the package nationwide.

- Vertebrate Pest Control. The FSMP will provide assistance to the Vertebrate Pest Control Center in Karachi to upgrade its applied research program in the control of birds and rodents in stored grains. Particular attention will be paid to fine tuning basic research findings developed over the years in invertebrate pest control research to the environmental conditions of Pakistan. More emphasis will be placed on developing outreach programs for public and private storage facilities. Research activities will be conducted primarily off-station.

- Insect Pesticide Resistance and Other Areas. The research program will determine levels of insect resistance to the chemicals currently used in Pakistan, identify the residual levels of pesticides in grains consumed by humans to assess whether current levels of pesticide use pose a danger to human health, and educate research personnel on safe pesticide use. As part of this activity, a week-long conference on pesticide safety will be financed, emphasizing alternatives to the pesticides currently used, as well as a range of research activities.

The research and technology transfer program will be implemented under the supervision of the Coordination Unit established in PARC by the IBRD/IDA Project. The specific institutions which will participate in the research will be selected from among the universities and research institutions currently working in pest control by PARC, in consultation with A.I.D. and the A.I.D.-financed long-term contractor.

For these three activities, the project will finance short-term training in the United States for principal researchers, grain testing equipment and other research supplies, vehicles, operating costs for the research and technology transfer program, and technical assistance.

IV. IMPLEMENTATION PLAN

A. Implementation Schedule

Table 5 summarizes major project events by project year. With the signing of the Project Agreement expected to occur in May 1984, each Project Year will run from May through April of the following year, except Project Year Five which will run to the PACD, June 30, 1989.

1. Project Year One (May 1984—April 1985)

This year will be devoted primarily to start-up activities. Once the appropriate Conditions Precedent have been met, AID will procure the services of: the Project Coordinator and local professional and administrative support staff for the PCU; the USDA/SRS under a PASA for the ADC component; IFPRI for the Special Studies Program under the EPA component; the long-term technical assistance teams for both the EAN Program under the EPA component and also the PHM component; an expatriate firm to undertake the O&M recurrent cost and management audit study and to provide continuing monitoring throughout the project; and the additional administrative and professional staff for the PU/MOFA. Procurement of vehicles and household and office furniture and equipment/supplies will also be initiated. ADP equipment needs will be firmed up with the assistance of M/SER/IRM, and procurement will be initiated for the first lot of equipment. The EAN will be organized, and development of a work plan for implementation of the local policy studies will have been started. Development of the area sampling frame will also have been initiated by the end of Project Year One. In addition, several participants will have departed for long-term training in the States, and the processing of candidates for long-term training beginning in September 1985 (Project Year Two) will also have commenced.

2. Project Year Two (May 1985-April 1986)

The overall implementation goal for the EPA component this year will be to set in motion the analytic work program of the EAN. The work plan for implementation of the program will have been approved by AID, and a set of research priorities will have been approved by the Steering Committee. Project-funded survey activities will begin, and the review of farm management data will be completed, permitting a decision on whether to support expanded collection of such data under the EPA component. Toward the end of the year, preliminary results should be available from the first IFPRI study. Progress will be assessed by holding the first EAN conference toward the end of Project Year Two.

Table 5

Schedule of Major Project Events

Project Year	EVENT
One (May 1984-April 1985)	Project Agreement signed Initial CP and CP for ADC component met Procurement of expatriate technical assistance and commodities begins PCU established in O/ARD and staff hired Additional staff hired for PU/MOFA EAN is organized First group of participants selected and sent abroad for training Development of work plan for local policy analysis studies program initiated Development of ASF initiated
Two (May 1985-April 1986)	Work plan for policy analysis studies program approved, CP for EPA component met, and studies begun Preliminary results of first IFPRI study available First EAN conference held PU/MOFA staff expanded for ASF program ASF completed and implementation on a pilot basis initiated Contract for temporary data collection personnel executed ASF in-country training programs conducted Work plan for local grain storage research program approved, CP met, and research studies begun In-country storage management training program underway Results of O&M recurrent cost study and management audit available Long-term plan for meeting O&M recurrent costs and effecting management improvements agreed to CP to storage rehabilitation met Contract with local A&E firm executed

Table 5
(Continued)

Project Year	EVENT
Two (continued)	Supervisory engineers hired for DFAs Preparation of provincial rehabilitation plans initiated Contract with U.S. firm executed to conduct bulk grain storage study Interim evaluation conducted (April 1986)
Three (May 1986-April 1987)	Revised work plan for local policy analysis program completed Analysis and data collection activities expanded At least one IFPRI study fully completed Second EAN conference held Full-scale data collection using ASF underway in at least one province Improved grain storage management systems implemented on pilot basis in Punjab In-country storage management training continues at high level First group of long-term participants returns to Pakistan U.S. grain storage management team returns to Pakistan to assess progress Provincial rehabilitation plans approved, agreements signed between DFAs and DC&Ws, and CP to rehabilitation in provinces met MFAR agreement for rehabilitation program executed Detailed designs and firm cost estimates prepared for majority of facilities Rehabilitation work completed on at least 25% of facilities to be rehabilitated Results of bulk grain storage study available

Table 5
(Continued)

-----Project Year-----	----------EVENT----------
Four (May 1987-April 1988)	ASF data incorporated into economic and policy analysis system Third EAN conference held All IFPRI studies completed Phasing in of ASF in at least one province completed Rehabilitation work on an additional 50% of facilities to be rehabilitated completed First group of PhD recipients and more of the MS recipients return Storage management monitoring team makes third visit to Pakistan to assess progress Interim evaluation conducted (October 1987)
Five (May 1988-June 1989)	Institutionalization of the EAN completed Funding for continuation of EAN secured ASF fully operational and old system completely phased out All participants return from abroad Temporary data collection personnel released Institutionalization of storage management and specialized training programs finalized Rehabilitation program completed Final impact evaluation conducted (April 1989) All expatriate advisors depart

Under the ADC component, the first half of the year will be devoted to completing the area sampling frame and expanding the PU/MOFA staff. ADP equipment will have arrived in-country. Preparations will be completed to permit the DFAs to begin data collection under the ASF on a pilot basis in the second half of the year. In-country training sessions will be conducted throughout the year and a contract with a local private sector firm will be signed to hire temporary data collection personnel.

releasing regular employees to participate in the ASF data collection activities, as well as staff for the DFAs, in the NWFP and Baluchistan.

Under the PHM component, PARC and the participating institutions will have prepared a storage technology research work plan for AID and GOP review by mid-year. Training for principal investigators will be completed by year-end, and the research program will begin. By mid-year, the storage management training program will be underway, proceeding on a gradually increasing scale during this and the succeeding year. The results of the O&M recurrent cost study and management audit should be available by mid-year, following which AID and the GOP will agree in writing to a plan to implement improvements in the public storage management system, including a long-range plan for meeting godown O&M recurrent costs. Once this occurs, AID will contract with a local A&E firm to develop provincial rehabilitation plans and estimated costs for the rehabilitation work. The DFA rehabilitation supervisory engineers will be contracted by AID at the same time the A&E firm is contracted. Toward the end of Project Year Two, AID will also contract with a U.S. firm to undertake the bulk grain storage study.

In April 1986, at the end of Project Year Two, a mid-term external evaluation will be undertaken.

3. Project Year Three (May 1986-April 1987)

The economic and policy analysis research program will continue, with the preparation of a revised work plan based in part on the findings of the mid-term evaluation. The work plan will serve as the basis for an expansion of both analysis and data collection activities. No major surveys will be initiated after this year, as greater reliance is placed on the improved data generated by the ADC component activities. A second EAN conference will be held toward the end of the year, presenting the results of the IFPRI studies, as well as other work completed by EAN members.

Data collection efforts will expand as the ASF is completed and provincial staff trained. Full-scale data collection using the ASF system will be completed and data summarized and released in at least one province, for all four quarters of the year.

Improved management systems will be developed and in place on a pilot basis in the Punjab. Storage management training activities will continue at a relatively high level during this year, including the specialized training under programs for operational personnel. The first long-term participants will return home from training. The research program will continue throughout the year, providing support to the storage management activities. The management monitoring team will make its second trip to Pakistan to assess progress in the management of food grains.

The rehabilitation program will be in operation this year. Provincial rehabilitation plans will have been approved, an MFAR agreement executed, and detailed designs and firm cost estimates prepared for the majority of facilities to be rehabilitated. Rehabilitation work will have been completed on at least 25 percent of the facilities. In addition, results of the bulk grain storage study should be available.

4. Project Year Four (May 1987-April 1988)

By the end of the year, the ASF data will be fully incorporated into the economic and policy analysis system. A third EAN conference will be held, and several smaller, specialized conferences may also be conducted to review the findings of specific studies.

Data will be collected in provinces and published at national and provincial levels for all provinces in each quarter. Comparisons will be made on existing systems, and phasing in of the ASF will begin in at least one province. Collection of economic and other data using the ASF methodology will begin. All ADC long-term participants will be back in country by mid-year and integrated within the ASF program.

During this year, it is expected that work on an additional 50 percent of the facilities to be rehabilitated will be completed. The specialized training program and the PHM research program will continue throughout the year. The first Ph.D. recipients and more of the M.S. recipients will return from training abroad. Implementation of improved storage management systems will continue, and the management monitoring team will make its third trip to Pakistan to assess progress in this regard.

An interim evaluation is planned mid-year in October 1987.

5. Project Year Five (May 1988-June 1989)

While analysis will continue during this year with no reduction in scope or pace, the final project year will emphasize consolidation of the gains made and institutionalization of the EAN. Mechanisms for funding for its continuation will have been identified, and steps will have been taken to ensure that funding is in place once the AID project terminates. The final group of long-term participants will return from training during the year and the technical assistance team will depart at the end of the year. The final evaluation, scheduled for late in the year, will provide an assessment of the impact and effectiveness of the EAN and recommendations for the continued functioning of the research program and the EAN.

This year will be devoted to completing the transition to the ASF system. The system will be fully operational and the existing system will be phased out. By mid-year, the temporary personnel will be released.

The rehabilitation program will be completed, as will actions necessary to institutionalize the program of storage management and specialized training. The final group of trainees will return. Storage technologies tested to date will be assessed and fully incorporated into the activities of PASSCO and the DFAs.

B. Administrative and Monitoring Arrangements

1. A.I.D. Responsibilities

The USAID/Pakistan Office of Agriculture and Rural Development (O/ARD) will have overall responsibility for managing the Project. The Mission Project Officer will be the Agricultural Economist in O/ARD who will be assisted by a Project Coordination Unit (PCU) established in O/ARD specifically for this project and staffed with an expatriate Project Coordinator, hired under a direct A.I.D. Personal Services Contract, and Pakistani administrative and professional staff.

O/ARD will be assisted in contracting and procurement actions by the Mission's Office of Project Development and Monitoring (O/PDM). The PHM rehabilitation activities will be supported by the Office of Engineering (O/ENG); financial and disbursement matters by the Office of Financial Management (O/FM); overseas training activities by the Office of Human Resources and Training (O/HRT); evaluation by the Office of Program (O/PRO); logistical and administrative support activities by the Office of Management (EXO); and legal matters by the Office of the Regional Legal Advisor (O/RLA). The Mission's capacity for project coordination will be supported and enhanced by the establishment of the PCU. Taken together, all of these staff resources are considered adequate to handle USAID/Pakistan's monitoring and administrative responsibilities under this Project.

2. GOP Responsibilities

a. General Overview

The overall financial and implementing responsibility for the FSMP will lie with the Federal MOFA and, specifically, with the Planning Unit (EPA and ADC components) and the Food Division (PHM). The four provincial DFAs will have the direct implementation responsibility for programs in each of their respective provinces, in keeping with the federal/provincial division of authority in Pakistan. Where responsibility is currently defined as lying with the provinces, as is the case with both grain storage and data collection, MOFA's role will be

one of coordination, monitoring, and liaison with the provincial governments and AID.

The three programs undertaken within the FSMP can be implemented independently. Therefore, no single management structure will be established within the MOFA for the project as a whole. However, because the EPA and ADC components are expected to be mutually reinforcing, close coordination of these activities during project implementation will be required by the PU/MOFA. Analysis of the PU's current workload and staff resources indicates that additional administrative and professional staff will be needed at the outset in the statistical and economic sections of the Planning Unit which will be devoted specifically to implementation of the EPA and ADC components.

The additional administrative staff for the PU/MOFA will consist of a Project Director, two research officers (economics and statistics), and a section officer (administration), assisted by the GOP support staff consisting of a stenographer, three typists and messengers. This staff will be added to the PU/MOFA during the first year of project. For further information on the duties of the project staff, see section III.D. Coordination of the PHM activities will be handled within the existing framework for intra-ministerial coordination, with participation, as appropriate, by AID and the expatriate technical advisors.

b. Economic and Policy Analysis

The PU/MOFA Project Director, assisted by the economics research officer, will be the GOP official primarily responsible for implementation of this component. The team leader for the EPA technical assistance team will report directly to the Project Director. The Project Director will most probably serve as the initial EANG chairperson and, assisted by the PU/MOFA staff, will be responsible for establishing the network and securing the participation of the various national resource instititutions. Their membership will be formalized through a Memorandum of Understanding or similar document.

Day-to-day decisions on the implementation of the EPA will be made by the PU/MOFA Project Director. Major decisions affecting the operation of the EAN, such as the allocation of funds according to the agenda of research priorities, will be made by the EANG. The Special Studies Program will be carried out by IFPRI and participating Pakistani research institutions under the supervision and with the guidance of the PU/MOFA Project Director and/or the EANG.

c. Agricultural Data Collection

The PU/MOFA Project Director, assisted by the statistics research officer, will be the GOP official primarily responsible for coordinating implementation of this activity with

the EPA component. However, the day-to-day implementation and coordination of this component with the provincial DFAs and other federal agencies concerned, such as the Federal Bureau of Statistics, will fall to the Agricultural Economics and Statistics (AE&S) Section of the PU/MOFA. The ADC technical assistance team will report to the Deputy Director (DD/AE&S) of this section.

To facilitate coordination among the federal and provincial authorities, an ASF coordinating committee will be set up under the chairmanship of the DD/AE&S. This committee will not have decision-making authority over the internal operations of each of the provincial governments, but instead will assist the GOP to coordinate implementation of the ASF system among the federal and provincial government and other relevant federal agencies which play a major role in ADC type activities.

d. Post-Harvest Management

The Post-Harvest Management component will be implemented under the overall authority of the Food Division of MOFA. Primary responsibility for the component will lie with the Deputy Secretary for Food, while day-to-day coordination will be the responsibility of the Director, Wheat Storage Cell in collaboration with the Technical Officer for Grain Quality.

The IBRD project has proposed the formation of a new Storage Cell within the division, to be headed by a Director for Storage. To date, this unit has not been formed. If such a unit is formed during the life of the AID project, AID and the MOFA will determine the advisability of transferring overall responsibility for the PHM component to it. The expatriate technical advisory team in grain storage management will report to the Director, Wheat Storage Cell.

i. Storage Infrastructure

The Departments of Food and Agriculture (DFAs) in each province will establish facility rehabilitation priorities based on an internal assessment of facility needs and conditions, in collaboration with the Departments of C&W and project-financed local A&E consultants. Provincial rehabilitation plans would then be prepared and include a priority list of facilities proposed to be rehabilitated, a preliminary implementation schedule, a definition of maintenance and rehabilitation needs and priorities for each facility, and estimated costs, and the proposed implementation mode for undertaking the rehabilitation work. Upon approval of the overall rehabilitation plans by AID, the A&E firm would prepare standard and detailed construction plans and specifications for the facility work items, lists, quantities and firm cost estimates for each site. The works would be carried out using the MFAR method. (See Section IV.E.)

Project-funded Pakistani engineers, stationed at the Punjab and Sind DFA headquarters, would have the primary responsibility to coordinate and inspect the civil works and to assist the DFAs carry out the administrative and management requirements in accordance with the MFAR procedure.

ii. Storage Management Training

The storage management training activities funded under the Project will be implemented by the MOFA Food Division with the assistance of the technical assistance team and the AID Project Coordinator and his PCU staff.

iii. Storage Technology Development

The research program will be coordinated by PARC and implemented by Pakistani research institutions, such as the Verterate Pest Control Center in Karachi. To ensure the necessary degree of coordination between the research and the operational elements of the national storage system, PARC will establish a research coordinating committee for research funded under the FSMP, to be chaired by a representative of the Food Division. This committee will bring together researchers and representatives of the federal and provincial agencies concerned in storage (including PASSCO, the DFAs, and others) to discuss storage issues and evaluate the usefulness of research findings. A member of PARC's staff will be appointed to coordinate the research program, acting with the advice of this coordinating committee.

C. Procurement Plan

1. Technical Assistance

Table 6 summarizes the proposed technical assistance plan for this project by component. The majority of technical assistance will be provided by four separate teams. These teams will consist of various combinations of long-term and short-term expatriate and local consultants. While the four teams will work primarily on discrete components of this project as discussed in Section III., each of the teams will also be responsible for working closely with other teams on specific activities under the individual project components. Close coordination among the teams and integration of their work will therefore be critical. To facilitate this, funds will be provided under the project to hire, under a direct AID Personal Services Contract (PSC), a senior and experienced individual to serve as the Project Coordinator. This individual will ensure that the diverse components of this project are successfully integrated and will provide a direct linkage between the AID Mission and field operations.

Table 6

Proposed Technical Assistance Plan

Project Component	Nature of Services Required	Estimated Level of Effort (in PM) ST*/	LT	Contracting Mode
EPA	Assistance to EAN/EANG/PU	60	96	Competitive with U.S. Institution/ Firm
	Special Studies Program	215	-	Non-competitive with IFPRI
ADC	Implementation of ASF	60	84	PASA with USDA/SRS
PHM	Management Improvement & Technology Transfer Program	65	96	Competitive with U.S. Institution/ Firm
	R&M Recurrent Costs and Management Audit Study and Continued Monitoring	30	-	Competitive with U.S. Institution/ Firm
	Rehabilitation Program Planning and Design	25	-	Competitive with Local A&E Firm
	Bulk Design Storage Study	10	-	Competitive with U.S. Institution/ Firm
PCU	Project Coordinator	-	60	Competitively Selected PSC
	Evaluation	18	-	IQCs or Buy-Ins to Centrally-Funded Projects
	TOTAL	483	336	

*/ Includes an estimate for home office staff time where appropriate.

Since the Planning Unit/Ministry of Food and Agriculture (PU/MOFA) has no prior expatriate contracting experience and insufficient staff to prepare and administer contracts, AID will undertake all contracting for this project with the approval of the PU/MOFA. With the exception of the proposed PASA with USDA/SRS for the ADC component and the proposed contract with IFPRI for the Special Studies Program under the EPA component, all other contracts will be competed in accordance with AID regulations for competitive procurement.

The USDA/SRS is recognized as having predominant capability in the operation and development of national level agricultural data collection systems utilizing area sampling frame technology in the U.S. and Third World. The use of ASF methodology was first implemented by the USDA for domestic programs, and a research staff is maintained to constantly improve on this technology. The USDA has implemented micro-computer technology, both hardware and SRS-developed software, for summarizing agricultural data collected from field surveys in Third World environments.

Past experience shows that ASF and micro-computer technology must be tailored to each country's environment and closely monitored over a considerable period after initial implementation. As a result, the technical assistance contractor must have the institutional capacity to field a relatively large number of experts over an extended time frame. This requirement is particularly relevant to Pakistan given the decentralized (provincial) nature of data collection responsibilities. SRS has on its staff 400 agricultural statisticians, 55 mathematical statisticians, and 88 computer systems specialists, of which 259, 25, and 38, respectively, have over 10 years of data collection experience. The USDA/SRS is the only contractor with the institutional capacity and previous extensive experience in developing countries to provide technical assistance in ASF technology to the four separate provinces simultaneously.

IFPRI's function and mandate are to identify and analyze alternative national and international strategies and policies for meeting food needs, particularly in the Third World. The Institute's research program reflects world-wide interaction with policy-makers, administrators and others concerned with increasing food security. In recognition of the quality of its non-aligned work, the Institute receives support as a constituent of the Consultative Group on International Agricultural Research from a large number of donors. As a result and based on on-going discussions between the GOP and IFPRI during the past two years, the Minister of Food, Agriculture and Cooperatives has specifically requested AID's assistance in obtaining IFPRI services to conduct specific policy studies.

Implementation of the Special Studies Program under the EPA component requires expertise from a recognized source not aligned with any particular government or country to analyze issues of a very sensitive nature to the GOP. As no other U.S. based firm, agency or university meets this requirement, the Mission

recommends that the Assistant Administrator for Asia, pursuant to AIDPR 7-3.107-50(D), approve a justification for non-competitive procurement on the grounds that ". . . procurement from any other source would impair foreign assistance objectives, and would be inconsistent with fulfillment of the foreign assistance program." Since the proposed studies were furthermore prepared by IFPRI, they therefore share key characteristics with unsolicited proposals. Finally, it should be noted that IFPRI is an international agricultural research center, a category of institutions which AID has singled out as a priority for assistance.

2. Commodities

An illustrative list of commodities is included as Annex J. With the exception of some of the vehicles, all of the commodities will have their source and origin in the U.S. or Pakistan. In all cases, either AID directly or the long-term contractor under the specific project component will procure the required commodities.

a. Vehicles

The following vehicles will be required for this project:

i. 140 motorbikes (100 to 250 cc twin cylinder, dual purpose road and trail, with capacity for up to two passengers and some limited equipment) for enumerators under the ADC component;

ii. 2 right-hand drive passenger vans (with 15-passenger capacity) for in-country training programs and observation trips under the ADC and PHM components;

iii. 2 right-hand drive mobile training cargo vans under the PHM component (two-ton carrying capacity);

iv. 13 right-hand, four-wheel drive carryalls (with capacity for 8 or 9 passengers) under all three components for the long-term advisors and other project staff, and one each for the provinces in support of the ADC component activities; and

v. 20 right-hand, four-wheel drive jeeps.

Since the vans, carryalls, and motorbikes are not manufactured in the U.S., the Mission requests the AA/Asia to approve a source/origin and nationality waiver from Code 000 to Code 935 and a waiver of FAA Section 636(i) to enable the Mission to procure these vehicles from a Code 935 country (most probably Japan). (See Vehicle Waiver Request in Annex F.) The jeeps will most likely be procured from the American Motors Corporation

which is the only U.S. manufacturer of right-hand drive jeeps. A justification for non-competitive procurement will have to be approved by the USAID/Pakistan Non-competitive Review Board before the Mission is authorized to procure these jeeps from AMC.

b. ADP Equipment

A total of 13 micro (including 7 portables) and 2 mini-computers will be purchased to support ADC and EPA component activities, together with appropriate peripherals, software, and an inventory of expendable supplies (diskettes, and the like). To facilitate service and to ensure that all are fully compatible, all of the equipment to be purchased in the first year will be tendered as a single lot. The ability to provide in-country service and technical support will be a key consideration in making the award. The larger mini or micro-computer to be purchased midway through the project for the PU/MOFA will be separately tendered, but will be restricted to makes fully compatible with the type originally purchased. Micro-computers are becoming increasingly common in Pakistan, as shown by the fact that computer tractor-feed paper is now manufactured locally, and the additional micro-computers to be supplied do not pose a potential problem with regard to service or availability of necessary supplies. Review and approval, as well as technical assistance, from M/SER/IRM will be requested early on in project implementation to ensure that all AID regulations with respect to the purchase of computers are fully met and that the ADP equipment procurement plan is feasible and appropriate.

c. Other Commodities

In addition to the vehicles and computers mentioned above, project funds will be used to procure hand and desk calculators and electric typewriters in support of the ADC component, construction materials (such as epoxy resins and the like) for the on-the-job training program under the PHM improvement sub-component, limited research commodities and supplies in support of the PHM technology transfer research program, and household and office furniture and equipment/supplies.

3. Other In-Country Services

a. Local Research Programs

The economic and policy studies and analyses funded under the EPA component will be carried out by the EAN member institutions through sub-contracts or Memoranda of Understanding between them and the EANG and/or PU/MOFA, depending on the regulations of each institution. A separate agreement will be prepared for each study in order to provide the necessary degree of control over financial expenditures and to clearly define scopes of work, including schedules and reporting requirements and formats. Each such agreement, which may be compared conceptually to AID's PIO/Ts, will specify, at a minimum, the level of suppor provided by each party, the level of effort, the final product, and the work schedule. This same procedure is expected to be followed to implement the research studies under the PHM component through the Pakistan Agricultural Research Council (PARC).

The PCU will assist the PU/MOFA and PARC to set up the financial and output monitoring systems necessary for implementation of these programs. In both cases, detailed work plans will be required prior to any disbursement of funds by AID (see Section VI, Conditions Precedent). Given the nature of these activities, it is unlikely that any individual study will cost as much as $100,000. Nevertheless, all proposed contracts and agreements of $100,000 or more will require prior AID approval.

b. Hiring of Local Staff

An estimated 19 (10 administrative and 9 professional) additional staff members will be hired for the PU/MOFA with project funds to assist to implement the EPA and ADC components. These staff members will be hired in a phased manner during the first two years of the project; AID will finance these additional staff members for the first two years of their employment with the project, after which time the GOP will establish permanent posts for these individuals and absorb their costs in the MOFA's recurrent budget.

In addition, a cadre of semi-professional and non-professional workers will be hired to substitute for the regular data collection staff in the DFAs while the latter are undergoing training for the ASF system and preparing the ASF itself as well as staff for the DFAs in the NWFP and Baluchistan. Approximately $2.35 million has been allocated in the AID project budget for this purpose. Project funds will also be used to hire at least two engineers, to be stationed in the DFAs in the Sind and Punjab, to assist in the implementation of the rehabilitation program under the PHM component, and both professional and administrative support staff for the PCU in the Mission's Office of ARD.

One or a combination of the following alternatives will be used to hire these staff:

(i) all staff for the PU/MOFA for the EPA component, for the DFAs in support of the ADC component, and the engineers for the DFAs in support of the PHM component will be hired by the long-term contractors under each component and the staff for the PCU in the O/ARD will be hired under PSCs by the Mission; or

(ii) all local staff will be hired by a local labor contractor (or contractors) under a direct AID competitively awarded contract. Use of such contractors is standard practice in Pakistan when it is desired to hire a large number of people on a temporary basis. This approach has been used successfully by other USAID/Pakistan projects, such as Primary Health Care and Tribal Areas Development, as well as by the Mission for FSN secretarial support staff financed out of the Mission Trust Fund.

D. Training Plan

The FSMP will fund degree and non-degree long-term training in the United States, short-term U.S. training, and in-country training. (See the individual project component descriptions in Section III.D. for details on the nature of and rationale for the types of training proposed.)

1. Implementation Responsibilities

The technical aspects of both U.S. and in-country training will be the responsibility of the technical assistance teams providing services to each of the project components. This will include refinement of training needs and training plans, identification of possible training courses and institutions to meet the training needs, and identification of categories and numbers of personnel who require training. However, administrative, logistical, and financial arrangements for long and short-term training in the U.S. will be the responsibility of the contractor under the Mission's Development Support Training (DST) Project, including transmittal of necessary documentation to the U.S. and obtaining U.S. visas and such other permits as may be required by the GOP.

The PCU in the O/ARD will handle all logistical and administrative arrangements for in-country training, including contacting trainees, arranging for facilities, duplicating materials to be distributed, and the like. The technical assistance contractors will, however, be responsible for designing the training courses, developing an appropriate roster of trainees with the GOP agencies involved, and providing technical assistance and

training materials from the United States as needed to conduct the courses.

Where in-country or U.S. training must be initiated prior to the arrival of the long-term technical assistance contractors, the Project Coordinator or the DST Project Contractor will assume responsibility. This situation will arise particularly with respect to long-term training for the ADC and PHM components; participants are scheduled to depart early in the first year of the project in both cases.

2. Proposed Training Levels

Table 7 provides a summary of the illustrative training program. This illustrative program plan will be further refined during project implementation as training needs and in-country capacity are more fully assessed.

Table 7

Proposed Training Plan

COMPONENT	EPA		ADC		PHM		TOTAL	
	Indiv.	Mo.	Indiv.	Mo.	Indiv.	Mo.	Indiv.	Mo.
US Long-Term	17	516	24	254	9	237	50	1013
US Short-Term	10	30	8	26	34	61	52	117
US Invitational Travel	--	--	6	7	5	5	11	12
In-country*/	212	135	370	10	1840	9	2422	34
TOTAL	239	681	408	297	1888	312	2535	1176

*/Amount of in-country training shown is number of course-months rather than number of person-months.

E. Rehabilitation Program

Rehabilitation of existing storage facilities will be carried out under a Modified Fixed Amount Reimbursement (MFAR) method, using procedures similar to those developed for the Irrigation Systems Management Project. Under the MFAR arrangement, AID will reimburse the GOP for a fixed amount per facility (80 percent of the total estimated cost), regardless of whether the actual repairs cost more or less than the agreed-upon amount, with the GOP financing the remaining 20 percent. The rehabilitation program will be implemented as follows:

1. Rehabilitation Plan. In collaboration with the MOFA Food Division and the provincial DFAs and Departments of C&W, a local Pakistani engineering firm will develop a rehabilitation plan for each province. This plan will classify the facilities according to their age and state of repair and identify the priority facilities for rehabilitation.

2. MFAR Agreement. Once the Rehabilitation Plan is approved by AID and the DFA has entered into an agreement with the Department of C&W in that province (see Section VI, Conditions Precedent and Covenents), an MFAR Agreement will be signed by AID and the GOP. This Agreement will specify: (a) the maximum dollar amount to be provided by AID and the GOP for this purpose; (b) the amount of storage capacity to be rehabilitated under the program; and (c) detailed procedures for reimbursement, inspection, and construction.

3. Detailed Design and Cost Estimates. The local engineering firm will prepare final drawings and firm cost estimates for each facility to be included in the program. These designs will be grouped in convenient lots (e.g., on the basis of districts) and presented by the GOP to AID as work orders for approval, along with the proposed approach to and schedule for construction and recommended MFAR levels of funding. AID approval will be provided in the form of a Project Implementation Letter (PIL) which also earmarks funds for the facility or facilities included under the work order.

4. Construction. Contracts will be either let competitively by the Departments of C&W to local construction firms, who will carry out the work or, depending on the nature and magnitude of the work, the Departments of C&W may undertake the work themselves. C&W's engineering cell will supervise the work, assisted by the project-funded local supervisory engineers stationed in the provincial DFAs.

Since the size of storage installations varies from less than 1,000 MT to 75,000 MT or more, it is not possible to indicate how many facilities will be rehabilitated under this project. On the basis of the total number of facilities over five years old, it is possible that as many as 100 sites will be rehabilitated. The 129 storage sites in the Punjab built in 1978 or earlier aver-- 9,300 MT, each made up of one or more storage godowns rangi-- in size from 500 to 16,000 MT nominal capacity. Priority will be assigned to the larger sites to reduce construction and inspection costs per MT.

Given the potentially large number of sites, it will not be possible for AID engineers to visit every facility rehabilitated.

Consequently, inspections will be carried out on a random sample of approximately 10 percent of the total number. Separate samples will be drawn and inspected by AID engineers in the Mission's Office of Engineering at each stage as follows:

1. Rehabilitation Plan. Prior to AID approval of the Rehabilitation Plans for each province, a sample of all existing public godowns will be examined to verify the information included in the Plan on the current state of repair of the facilities and the rehabilitation needed.

2. Design. Prior to AID approval of Work Orders, a sample of facilities will also be visited to verify that the design adequately covers the needs of the buildings on the site and that the cost estimates are reasonable.

3. During Construction. A sample of approved sites will be inspected to assess the standard of work, including materials used and workmanship.

4. Final Payment. A sample of completed sites will be visited prior to final payment by AID for each group of sites, to verify that the work was completed in accordance with agreed upon specifications.

F. Evaluation Plan

1. General Discussion

Three formal external evaluations are planned over the life of this five-year project: in April 1986, October 1987, and April 1989. The first two evaluations will require about four weeks of effort by a team of experts in economic policy analysis, agricultural data collection, and post-harvest management to review secondary source data, conduct interviews, and make field visits. The final impact evaluation will entail about eight weeks of effort by a team with a composition similar to the above and will include, in addition to the above methods of evaluation, the collection and analysis of primary source data. All evaluations will involve, as resource personnel, representatives of the PU/MOFA, EAN, EANB, Food Division/MOFA, PARC, and the DFAs and DC&Ws, as well as AID, the project-financed technical assistance teams, and possibly representatives of the IBRD, ADB and FAO. Several of the evaluations will also require the participation of AID/Washington personnel.

During the initial phase of implementation, quantifiable impact indicators will be identified and measurement taken to ensure the existence of baseline data.

In addition to these formal project evaluations, annual donor reviews involving the GOP, Provincial Governments, AID, ADB,

review, in particular, the performance and progress achieved in meeting the covenants related to R&M recurrent costs for grain storage facilities and policy issues in this sub-sector. The regularly scheduled meetings of the Steering Committee, which will take place throughout the project, as well as the scheduled EAN conferences, and the workshops to discuss grain storage research study findings, will also serve as forums for project monitoring and informal project evaluations.

A variety of data will be generated and available for all formal project evaluations as a result of data gathering, data analysis, and reporting activities which will take place throughout the life of the project as follows:

a. economic and policy analysis and studies generated by the EAN under the EPA component's local research program;

b. the findings of the IFPRI special studies program under the EPA component;

c. national, provincial, and district level agricultural data and analysis generated using the ASF methodology under the DCA component;

d. the findings of the local grain storage research program under the PHM component;

e. the results of the comprehensive study of grain storage recurrent costs and management audit;

f. the results of the bulk grain storage study;

g. quarterly progress reports prepared by the project-financed technical assistance teams and the long-term Project Coordinator; and

h. the minutes of the meetings of the Steering Committee and the recommendations from the EAN and PHM conferences.

The following outlines the overall objectives of each of the three formal external evaluations which are tentatively scheduled to take place under this project.

2. <u>April 1986 Evaluation</u>

This evaluation is scheduled at the end of the second project year. All technical advisors and required commodities should have arrived in country by the beginning of project year two, and during the year, sufficient progress in implementing project activities should have been achieved such

that an evaluation at the end of the year would be meaningful.

The evaluation will be, for the most part, a project management "audit." The overall objectives of this evaluation will be to examine: (a) the adequacy of institutional arrangements, systems of operation, and work plans; and (b) progress achieved in providing the required inputs to the project. Necessary modifications in the project implementation schedule, institutional arrangements, and the project financial plan will be made at this time. In particular, the following aspects of the project will be examined:

a. the adequacy of staffing of the PCU in O/ARD and the PU/MOFA;

b. institutional roles and working relationships among the PU/MOFA, the EANG, the EAN, and the Steering Committee; among the DFAs and the PU/MOFA and other agencies involved in agricultural data collection and analysis; among PARC, the grain storage research network, the Food Division/MOFA and the DFAs; among the DFAs and DC&Ws and the Food Division/MOFA; among the PCU in O/ARD and all the long-term technical assistance contractors; and between AID and relevant GOP and provincial agencies;

c. the status of commodity procurement activities;

d. the status of progress in meeting CPs and covenants;

e. the results of the grain storage O&M recurrent cost analysis and management audit, and the adequacy of the long-range plan for meeting O&M recurrent costs and related performance benchmarks and policy issues in the grain storage sub-sector;

f. the preliminary results of the first IFPRI study;

g. the adequacy of counterparts for all long-term consultants; and

h. progress in implementing the ASF program.

3. <u>October 1987 Evaluation</u>

This evaluation is scheduled to coincide with the projected dates for: near (about 75 percent) completion of the storage rehabilitation program; completion of the IFPRI special studies program; completion of the phasing in of the ASF methodology in at least one province; and the return visit by the storage management monitoring team. In addition to assessing progress under all three project components and identifying constraints and recommending solutions, the evaluation team will examine progress made toward goal achievement by measuring changes on those impact indicators identified during implementation , in particular the impact of

the rehabilitation and storage management improvement program on grain losses and of the EAN and IFPRI policy studies programs on agricultural policy. In addition, the impact of the project, in particular the EPA component, on the formulation of the objectives and priorities of the GOP's Seventh Five-Year Plan for the period PFY 1988-1992, which should be under preparation at this time, will be examined. Lessons learned from this evaluation will be incorporated into program plans for the remaining year and one-half of the project.

4. April 1989 Evaluation

This final impact evaluation is scheduled to coincide with the projected completion date of all project activities. The evaluation will measure the impact of the project in meeting the food security objectives of the GOP, including an examination of lessons learned and progress achieved in meeting the goal and purpose of th project as well as the end of project status (EOPS) indicators. Prior to this evaluation, clearly defined and quantifiable impact indicators will have been developed for all project components and sub-components. Evaluation of the training program, for example, will include such indicators as the effectiveness of the bonding requirement, the quality of the participants, the extent to which course material is utilized on the job, and the relevance and appropriateness of post-training assignments for participants. The quality, timeliness, accuracy, and end use of the agricultural data generated under the new ASF methodology will be evaluated. The impact of the rehabilitation and management improvement activities of the PHM component on grain losses and grain prices will be examined. And finally, the impact of the various policy studies and analyses conducted on agricultural policy will be assessed, including an evaluation of the institutional arrangements involving the EAN, EANG, and the Steering Committee for providing policy-makers with relevant and quality analyses and to what extent these analyses have influenced decision-making.

V. PROJECT ANALYSES

A. Technical Analysis

The overall conclusion of the technical analyses completed for the Project's three components is that the activities proposed for project funding do not present any serious technical problems and should be fully implementable as planned in the Pakistan context. In each case, this conclusion is based on a thorough analysis of the current situation, including the technical capacity of proposed implementing agencies, and a detailed examination of the technical aspects of the activities proposed. The results of these analyses are described in more detail in the original consultant reports available on file at USAID/Pakistan.

1. Economic and Policy Analysis

The two sub-components of the EPA component (special studies and the EANG) are not expected to encounter technical problems in implementation, since both build on a base of similar prior activities within the participating organizations. Furthermore, an appropriate mix of technical assistance, training, and commodity inputs including computers will be provided to ensure the technical feasibility of the activities. In the case of the special studies program, to be implemented by IFPRI in collaboration with Pakistani researchers, the topics proposed are based on a preliminary study of appropriate research topics in Pakistan. This preliminary work examined the availability of data and technical support in-country for the proposed studies and concluded that they could be carried out with little difficulty. In both cases, the specific studies proposed are closely related to prior IFPRI work in other countries, such as the major study of consumer subsidies and consumption patterns recently completed in Egypt.

The economic and policy studies to be implemented by the EANG will be of a greater scope and scale than those undertaken through the IFPRI program. Nonetheless, the program is not expected to encounter technical difficulties for the following reasons. First, individual studies will be proposed and approved taking into consideration the capacity of the research organizations that are to perform the work. Studies will not be approved unless the organization can demonstrate the ability to carry them out. Second, the analytic work funded through this activity will be carried out by a broad range of Pakistani institutions. This approach avoids the technical problems that commonly arise when a single institution is asked to increase its workload rapidly. Third, the technical advisors provided for this component will play an active role in assisting the institutions involved to develop methodologies for data collection and analysis that are suited to each institution's level of development. The advisors will also assist the EANG and the PU/MOFA to

monitor the quality of the work as it is performed and to evaluate the final product, providing valuable feedback to the organizations and quality control of the output.

The EANG represents an experiment in organizing economic and policy analysis through the formalization of an existing network of public and private organizations. This approach stands in marked contrast to the "traditional" approach, which involves creation of a self-contained analytic capacity within a central government body. As it is an experimental approach for Pakistan, the EANG carries with it a certain risk of failure on either technical or political grounds. In this case, however, the risk is judged to be slight because the EANG will build on existing informal linkages among participating organizations. The assistance of the technical advisors to the EANG and PU/MOFA will also be critical in overcoming any technical and administrative difficulties.

2. Data Collection

The area sampling frame methodology has been tested and applied in ten countries around the world, several of which started from a much more limited resource base than is in the case in Pakistan, in terms of the availability of skilled manpower and the existence of a functioning organization for the regular collection of agricultural data. The methodology is well-developed and has proven to be completely applicable to developing country conditions.

The USDA team that completed the design for this component examined the availability of the maps and other basic data needed to establish the ASF system. They concluded that the information needed is available in Pakistan. The active participation of the Ministries of Agriculture, Planning, and Finance will be required during implementation to assure access to the necessary aerial photos. This problem has been overcome in other countries where security is as much a concern as in Pakistan.

The availability of manpower and other resources needed to implement the system is not expected to create a problem, since the ASF system uses essentially the same types of resources as the existing system, but at a reduced level. The Project makes provision to ensure that the old system remains functional while the new system is phased in and that adequate training and supervision of personnel will be carried out.

3. Post-Harvest Management

As with the other components, the grain storage component is directed toward the improvement of an existing system. The Provincial Departments of C&W are already responsible for maintenance of the Provincial DFA's facilities. Funds budgeted by the DFAs are transferred to the Departments of C&W

for this purpose. A major problem to date has been the low budgets available for maintenance. Also, the maintenance management system, including clarification of the roles, relationships and responsibilities of the DFA's and Departments of C&W, need to be strengthened. The proposed management audit will include a detailed review of maintenance operations, priorities, scheduling and administration to identify areas for improvement in the existing system.

The proposed rehabilitation program will consist of relatively simple maintenance/repair activities. The buildings are masonry structures, some constructed in the 1950's, others as recently as the late 1970's. The quality of construction varies, with the earlier buildings appearing to have been better constructed. The rehabilitation program will not involve any major structural improvements to the facilities, grounds, or asthetic features. The types of repairs that will be considered for financing under the project include: roof repairs to stop leaks; cleaning and white-washing of the interiors of the buildings; repair or replacement of steel doors to assure proper closure and sealing; maintenance of windows and replacement of broken glazing and screens; patching and repair of cracks or holes in the floors, walls, and joints throughout the interior and exterior of the buildings; moisture-proofing of interior walls; and painting of doors and window frames. Minor electrical repair work and some minor structural work may also be required in some facilities.

The only required engineering design work will be for the roof repair work and the replacement or improvement of the steel door systems. Tile roofing with or without a moisture barrier is common, particularly on older buildings, and this type of roofing performs rather poorly, especially when construction quality control is lacking. Standard alternative roofing repair systems will need to be investigated and designed for the different building types. Regarding doors, in general, the existing steel door systems are poorly constructed and maintained and have improper closure or sealing capability. The design of standard alternatives or improvements is required. A&E work for the rehabilitation program wil include a detailed survey of maintenance requirements, establishment of work item quantities, and development of cost estimates for each facility, plus a list of detailed specifications required for the different work items. The same specifications will be used for all the facilities.

The rehabilitation and maintenance work will be performed by the Provincial Departments of C&W or farmed out to qualified local contractors by the Departments of C&W. Ensuring adherence to specifications, on-site quality control checks, and inspection will be the primary task of the project-funded engineers assigned to the DFAs. Spot-checks by AID Mission engineers will also be undertaken on a sampling basis. This inspection procedure is considered adequate given the nature of the work.

A rehabilitation cost estimate of $8.50 per metric ton is based on analysis of work requirements from a small sample of

facilities and quantities and current unit cost rates for the work items. The cost estimates are considered reasonable and acceptable for planning purposes, in the absence of a detailed inventory and survey of all the facilities.

Potential technical problems related to the maintenance and operation of the repaired facilities have been provided for in the project design by the training program and technical assistance to be funded under the project. The technical feasibility of other grain storage sub-components, such as research on stored grains, is assured by the provision of technical assistance, research supplies and other inputs needed to carry out the proposed activities.

B. Administrative Analysis

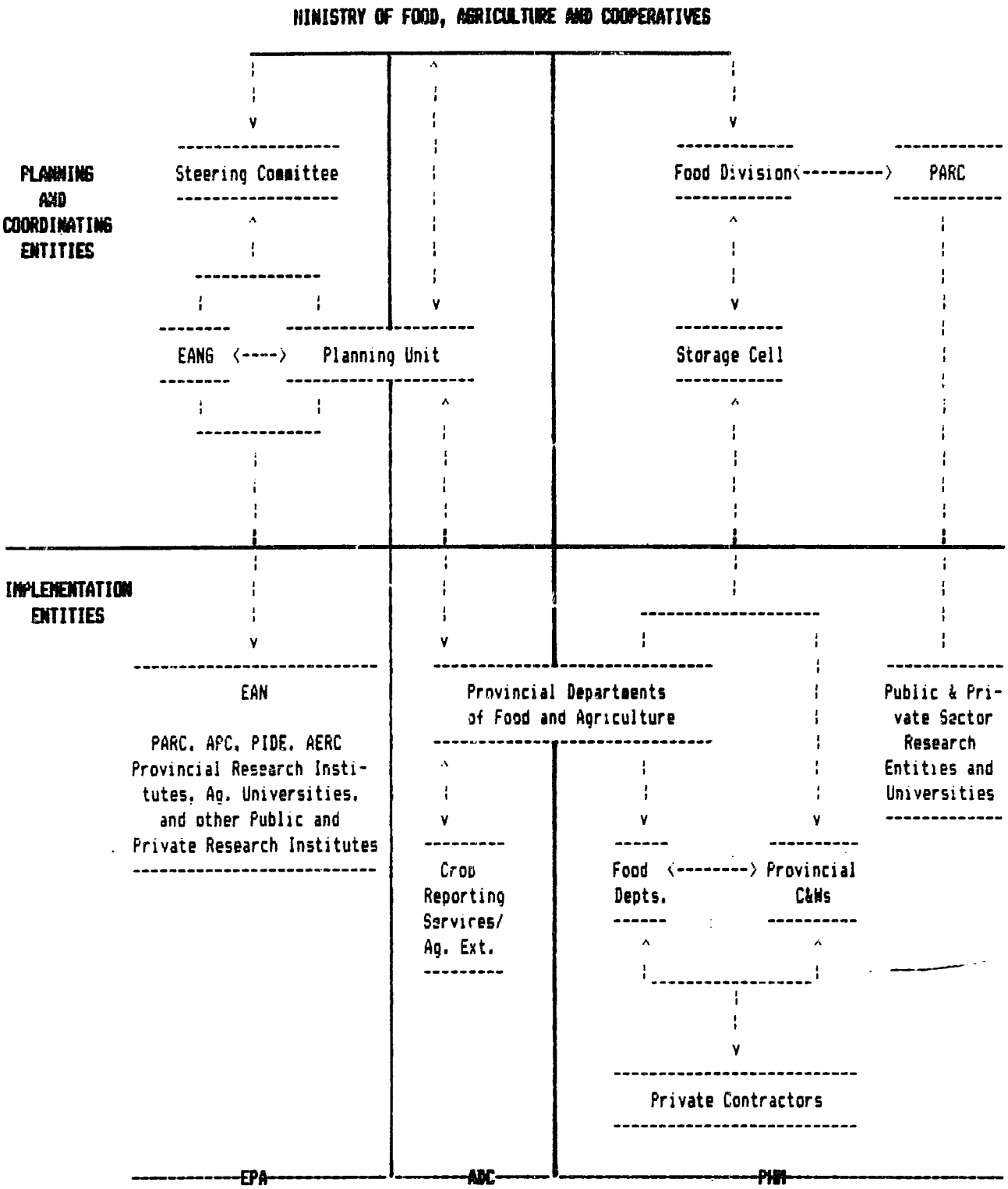
The project has been designed taking into consideration the administrative capabilities and methods of operation of the various participating institutions. The project is administratively feasible and makes adequate provision for the coordination and administrative support needed in the implementation of each activity, as well as in the project as a whole. The following summary of the administrative analyses completed for each activity focuses on three issues: (1) the overall feasibility of the administrative structure proposed for the project; (2) the administrative capacity of each implementing organization relative to the demands placed on it by the Project; and (3) the ability of AID to carry out its Project management responsibilities.

1. Overall Project Structure

The administrative structure for the project places primary responsibility within a single organization, the Federal Ministry of Food, Agriculture and Cooperatives. Within the MOFA, responsibility will rest with the MOFA's Planning Unit for the EPA component; the Planning Unit and the Provincial DFA's for the ADC component; and the MOFA's Food Division at the Federal level and the Provincial DFA's for the PHM component. The Provincial DFAs will be repsponsible for coordinating the input of the Provincial Departments of C&W for the rehabilitation program under the PHM component. (See Figure 2.) This structure places clear authority for each project activity within a single organization. In all cases, the institution selected has normal day-to-day responsibility for activities similar to those proposed and thus has established administrative capability in the areas needed for project implementation.

FIGURE 2

PROPOSED ADMINISTRATIVE ORGANIZATION UNDER THE FGM PROJECT



In Pakistan's decentralized federal structure, the Provincial DFAs have primary implementation responsibility in the areas of data collection and grain storage. The project is not intended to alter the existing authority structure with respect to the division of responsibility among the central government, provincial governments, and parastatal organizations. Where primary responsibility rests with the provincial authorities (as in the collection of basic agricultural data, for example), primary implemenation responsibility for project activities will also rest with the province. Project activities will, however, be coordinated through the federal government, in order to ensure that project resources are appropriately allocated to all four provinces in accordance with the agreed upon program of activities; to maintain a regular exchange of information between AID and the GOP; and to provide a single point of contact for the technical assistance teams. This coordination role is well within the bounds of the responsibilities and authority of the federal government as currently defined.

Another major group of institutions to be involved in project implementation is comprised of public and private sector research institutions that will participate in the policy analysis and grain storage research activities. Their involvement will be coordinated through the appropriate MOFA body.

2. Administrative Feasibility of Project Components

The following discussion focuses on the potential problems identified and resolved and the alternative arrangements considered during project design.

a. Economic and Policy Analysis

The coordination role defined for the PU in the policy analysis component is an extension of the role now played by that organization on an informal basis. The administrative ability of the PU will be strengthened to permit it to play this role more effectively by the creation of the EANG, which will bring together the various organizations active in policy analysis and provide a forum for reaching agreement on analytic priorities. Additional administrative and professional staff as well as technical assistance and training will be provided to the PU/MOFA to enable it to assist the EANG handle the administrative and monitoring requirements to implement the local research program.

The administrative feasibility of this approach rests on the definition of the EANG as a coordinating rather than a directing body. It is not realistic to expect member organizations to participate in the EANG if those organizations are given authority to dictate the analytic programs of each of the other members. In other words, a more ambitious approach than that

proposed, i.e., to fuse the existing programs into a single integrated program, would not be likely to succeed. On the contrary, it could well lead to the non-cooperation of important analytic organizations, particularly those in the private and university sectors, with the end result that coordination and policy relevance would be reduced rather than increased.

A second alternative, which involves giving greater emphasis to creation of a single integrated analytic program, is the strengthening of the Ministry's own analytic capacity in the PU. While this would be administratively feasible, it would not constitute an efficient use of resources, since the PU's analytic base is too small to address the country's many policy analysis issues. This approach would also amount to a step backwards in terms of coordinating the national policy effort, since it would encourage the Ministry to focus inward rather than increasing the involvement of the many outside organizations whose combined capacity is several times that of the Ministry itself.

b. Data Collection

The existing administrative structure and procedures for the current data collection system will be equally applicable to the area sampling frame system, requiring only minor adjustments once the new system is in place. The primary differences between the two systems, from an administrative perspective, lie in the greater amount of data flowing from the provincial to the federal level, the more rapid transfer of this data, and the more active role of the federal government in coordinating data collection methodologies across provinces. In each case, the changes are not believed to pose serious administrative problems, but some difficulties may arise as the system adjusts to a more efficient and productive mode of operation.

Two problems have been identified that should be monitored on a continuing basis over the life of the project. First, the linkage between the federal and provincial data collection authorities must be strengthened. This strengthening, moreover, must be accomplished in a way that does not call into question the established division of responsibilities, which gives the primary responsibility for data collection and tabulation to the provinces. The federal government's interest in rapid availability of reliable statistics is balanced by the provinces' need for data upon which to base their own planning, in areas such as grain procurement, for example. There is currently a regular flow of information between the two levels on an informal basis. This flow and release of data must be formalized. The problem is not a delay in transmitting data from the provincial to the federal level, but rather a delay in processing data at the provincial level for use at both levels. As the system moves toward greater productivity and a more rapid processing of data, care must be taken to ensure that the collaborative attitude between the federal and provincial governments is reinforced rather than undermined.

The second potential problem arises from the need to coordinate the preparation and publication of estimates with agencies outside of agriculture. This problem could arise equally at the federal level, where the Federal Bureau of Statistics has final authority over all data collection and publication, and at the provincial level, where the current practice is for final estimates to be coordinated across agencies. The latter practice implies that the delay between collection and final publication of estimates is determined by the slowest agency, since the cross-checking of estimates cannot be completed until all estimates are in. The coordination problem therefore can be expected to arise primarily in finalizing the design of the system (where the FBS will play a role) and in publication of final estimates (where other provincial agencies must be consulted). Discussions with federal and provincial authorities indicate that these potential problems can be overcome. The key to avoiding difficulties in this area will be active consultation with these agencies at all stages of project implementation to ensure that they understand and support the changes in the collection and processing of agricultural data by the MOFA and the provincial DFAs and that the operation of the data system as a whole does not reduce the gains in reliability and timeliness provided by the ASF methodology.

c. Post-Harvest Management

Provincial Communications and Works Departments will have a major administrative role in the implementation of the rehabilitation program under this component. C&Ws traditionally have the responsibility of maintaining the Food Departments' grain stores. The proposed rehabilitation program will require additional planning and supervision. It is therefore proposed that the rehabilitation plans be prepared by and most of the construction work be carried out by local private contractors. The C&Ws will inspect and approve the rehabilitation plans and the completed construction works.

A potential problem arises from the amount of construction work to be financed. Although the total volume of such work is estimated to be between 700,000 and 750,000 MT, it is likely to be composed of a large number of small projects dispersed around the country. Depending on the average size of facilities included in the final program, 100 or more sites may be involved. In most cases, a standard design will not be applicable since the original design and the current state of disrepair vary widely from one godown to another. To reduce the management burden on the DFAs and Departments of C&W and to streamline administrative procedures, the project design provides for project-financed engineers to be stationed in the DFAs as well as training and advisory services to be made available for C&W and DFA staff to facilitate the timely and efficient implementation of this program.

No potential administrative problems have been identified in the training, management improvement, and research sub-components since these activities will rely on existing administrative structures which are judged to be adequate.

3. Project Monitoring

The overall management structure for this project relies on decentralized management, with roles and responsibilities clearly defined for each project component and sub-component and authority placed as closely as possible at the operational level with the implementing entities. As mentioned previously, the project will support the hiring of additional administrative staff for the PU/MOFA to assist this office to carry out its administrative, monitoring and overall coordinating responsibilities under the project as well as to play a major role, in particular, under the EPA and ADC components. In addition, a Project Coordination Unit will be established in the Office of Agriculture and Rural Development in the USAID/Pakistan Mission specifically for this project to assist AID to perform its coordination and monitoring responsibilities under the project.

In summary, the project design calls for reliance on existing administrative structures which are considered adequate or makes provision for additional inputs to ensure the feasibility of administrative arrangements.

C. Social Soundness Analysis

The FSMP as designed is socially sound and no social problems have been identified that are likely to pose a serious barrier to implementation of the project. The following summary discusses the project beneficiaries, the involvement of women, and the consistency of the project design with prevailing social attitudes and values in Pakistani society. Additional detailed information is available in the consultant reports that provided the basis for the design.

1. Beneficiary Analysis

The direct beneficiaries of this project will be the researchers, analysts, grain storage personnel and other private and public sector professionals who participate in the various programs financed under the project. Pakistani decision-makers will also be direct beneficiaries of the project, to the extent that the project improves their access to: (a) reliable information on the agricultural sector; (b) relevant and high quality economic and policy analysis and recommendations to use in policy-making; and (c) an improved and less costly grain storage system to help achieve national food security

objectives. Important also, the improved grain storage system will strengthen the GOP's ability to reduce price fluctuations through its stock management programs.

The project will benefit all elements of Pakistani society, including small farmer-families and other rural residents, although they will participate only indirectly in project benefits. They will stand to gain from better agricultural policies, better information on the status of the agricultural economy, and the resulting improved decisions by national and provincial decision-makers. The project will also provide an opportunity to encourage and develop research opportunities. The promotion of research and analysis for use by policy-makers will provide opportunities for improved decision-making.

2. Involvement of Women

The FSMP is not intended to have a significant impact on women apart from the rest of Pakistani society. Nonetheless, the project will involve women in many of its activities. Women professionals will be included in the policy analysis and data collection components of the project in accordance with their current involvement in such activities in Pakistan. Women professionals currently hold management-level positions within the policy analysis units of the government, and serve as analysts, economists, and educators in many of the institutions that will be involved in the EANG. These women will have equal access to the U.S. and in-country training opportunities provided by the project.

Women will also be involved in several of the specific data collection and analysis activities, both as analysts and as the source of important data on the rural economy. The consumption and nutrition studies to be undertaken by IFPRI, for example, will be targeted directly at rural women, and women will be actively involved in several of the special household surveys to be carried out under both the data collection and analysis components. To ensure that the views and information held by women are adequately represented in such studies, a special effort will be made to involve women in the design of these studies and to train and employ women as enumerators.

3. Consistency of Project Design with Social Values

The overall conclusion of the analyses undertaken is that the design is responsive to the prevailing social value systems of the participants. Several areas have been identified, however, where social sensitivity will be an important determinant of successful implementation.

a. Post-Harvest Management

The grain storage component focuses almost entirely on the larger off-farm storage facilities, particularly those in the public sector. Many of the concerns that would be important in carrying out an on-farm storage program, therefore, do not arise.

The program is directed toward improving physical facilities and management performance in existing storage facilities. Participants in the program at the management and operational levels will therefore not be asked to make major changes in their behavior, but rather to do what they are now doing in a more effective and efficient manner. The short-term training and improved facilities provided under the project are judged to be sufficient to achieve behavioral changes of this magnitude.

As a rule, improvements in public sector facilities raise questions of incentives and motivation to make the desired changes. In carrying out the recommended training and upgrading programs, therefore, attention will be devoted to determining where alterations may be needed in the incentive systems to motivate employees at all levels to raise the standard of their performance. In general, however, the types of changes proposed (covering bulk grains with a tarpaulin before fumigating, for example) are not of sufficient scope to suggest a serious motivation or incentive problem in their application.

b. Economic and Policy Analysis

Economic and policy analysis is by no means a new concept in Pakistan and there is little reason to believe that the types of analysis proposed for the FSMP are in any way inconsistent with prevailing social attitudes.

The design of the Economic and Policy Analysis component takes into consideration the professional styles and values associated with such work in Pakistan, which do not differ in important respects from those elsewhere. Despite this attention to what might be termed the "sociology of research," two problems can be identified that may hinder project implementation, if sufficient attention is not paid to potential sensitivities. The role of the EANG is to coordinate the analysis of agricultural policies and to promote the examination of high priority issues by a wide range of public and private sector institutions. The EANG is designed as a participatory body, with active involvement of the member institutions. The key to success here will be the clear definition and adherence to this definition of the roles, responsibilities and relationships among all participating institutions in the EAN, and among the EAN, the EANG, the Steering Committee and the PU/MOFA.

c. Data Collection

Like the post-harvest management component, the data collection component constitutes an improvement of the technologies employed in an existing system rather than a change in the system itself. The activities therefore present few difficulties from a social soundness standpoint. Two minor problems can be noted. First, the construction of the area sampling frame itself requires the use of information that may raise concerns regarding national security. Second, the ASF requires the abandonment of the village as the basic unit of data collection, implying a minor but not insignificant change in the perception of the rural areas. A thoughtful and careful approach and possibly an educational campaign within the affected agencies should be sufficient to handle both of these potential difficulties.

D. Economic Analysis

The economic analysis of FSMP is composed of two elements:

1. A quantitative rate-of-return analysis of the storage infrastructure, management training, and research activities; and

2. A qualitative analysis for the data collection and economic analysis components.

The findings of these analyses are that the project as a whole is economically beneficial with an internal economic rate of return for the storage activities as high as 29 percent. As designed, the project components are cost effective in achieving the project purpose, when compared to alternative approaches. The net effect of the project on GOP recurrent costs is minor, with reduced costs in the ADC area partially offsetting increased costs in economic analysis and grain storage. The structuring of Project activities in the latter two areas, moreover, gives the GOP maximum flexibility to control recurrent costs by adjusting the future level of activity within the limits of available resources.

1. Quantitative Analysis of the PHM Component

a. Methodology

The derivation of financial and economic costs and benefits of PHM activities is presented in detail in Annex L. Economic cost and benefit values have been calculated at estimated border prices. Prices of internationally traded goods have been converted at the official exhanage rate (US$1.00

= Rs 13.5). For calculating the economic value of non-traded goods, a standard conversion factor of 0.9 has been applied. Benefits were computed to include reduced losses due to improved management.

In addition to the projected cost for each sub-component, it was assumed that maintenance expenditures would increase from a current level of 0.3 percent of replacement value to 1.5 percent in order to maintain the benefit stream over the 20 year planning horizon used. Rehabilitation costs for grain storage facilities were estimated to be $8.50 per metric ton of grain storage capacity. An average estimate of rehabilitation costs is used because of the great variation in rehabilitation needs among the various storage facilities. On average, rehabilitation costs range between $6.00 and $11.00 per metric ton of grain stored.

b. Results of the Analysis

Streams of financial benefits and costs were projected and converted to economic values in Annex L. The PHM incremental economic costs and benefits are summarized in Table 8. The economic returns to the PHM component of the FSM project clearly justify the investment. The estimated economic rate of re rn (EER) is 29 percent. The analysis is based on expected incremental benefits generated from rehabilitation of storage facilities and improved storage management. The direct benefits take the form of reduced grain losses due to rehabilitation and management savings on 735,000 MT of storage. The indirect benefits include only the reduced losses and operating costs due to increased R&M expenditures and improved management on the remaining un-rehabilitated storage.

The analysis includes all PHM costs: rehabilitation, technical assistance, training, commodities, incremental repair charges and higher maintenance costs. It is assumed that the O&M recurrent costs for rehabilitated grain storage will rise by $500,000 per year following the project due to expected increases in from 0.3 to 1.5 percent of the replacement value of the facilities. These increases in recurrent costs will be more than compensated by reductions in grain losses and savings from improved management efficiency.

Benefits and costs will result from the accelerated repair and maintenance program for all other storage facilities not included in the rehabilitation component of the PHM sub-project. Annual repair and maintenance expenditures on these other unrehabilitated storage facilities are projected to increase to at least 1.5 percent of the replacement value of those facilities. Benefits are measured as management and operating cost savings from the new R&M program. These additional costs and benefits are due to GOP initiatives attributable to successful implementation of the PHM sub-project.

TABLE 8

PHM PROJECT INCREMENTAL ECONOMIC COSTS AND BENEFITS
($ '000)

	Incremental Costs								
PY	Rehabil-itation	Rest of the PHM	Contin-gency	Repair and Mainten.	TOTAL	Direct Incremental Benefits	Net Direct Incremental Benefits	Net Indirect Incremental Benefits	Total Net Incremental Benefits
1	2	3	4	5	6	7	8	9	10
1	0	894	45	0	939	0	-939	0	-939
2	1055	994	102	0	2151	0	-2151	0	-2151
3	1407	789	110	94	2400	697	-1703	-34	-1737
4	1407	652	103	219	2381	1625	-756	-6	-754
5	1407	313	86	344	2150	2554	404	73	476
6	349	20	18	469	856	3482	2626	179	2805
7				500	500	3574	3073	300	3373
8				500	500	3435	2934	375	3309
9				500	500	3296	2795	440	3235
10				500	500	3018	2517	459	2977
11				500	500	2879	2378	499	2877
12				500	500	2809	2309	551	2860
13				500	500	2809	2309	624	2933
14				500	500	2809	2309	696	3005
15				500	500	2809	2309	769	3078
16				500	500	2809	2309	854	3163
17				500	500	2809	2309	1008	3317
18				500	500	2809	2309	1008	3317
19				500	500	2809	2309	1008	3317
20				500	500	2809	2309	1008	3317
ECONOMIC RATE OF RETURN (%)									29

Notes:

1. Columns 2-8 include only direct economic costs and benefits from Annex L, Tables 1-4.
2. Column 9 presents net indirect incremental benefits from Annex L, Table 5.
3. Column 10 is the sum of columns 8 and 9.

c. Sensitivity Analysis

A sensitivity analysis was performed by developing six alternative estimates of reduced net benefit streams. The results of the sensitivity analysis are summarized in Table 9. In the most conservative case (VII.), a 30 percent increase in incremental economic costs and a 30 percent decrease in incremental economic benefits still produces am ERR of 15 percent. The likelihood of such an unproductive outcome is judged to be extremely remote. These findings support the conclusion that this project component is economically feasible and a sound investment of A.I.D. resources.

TABLE 9

Post-Harvest Management Sub-Project: Sensitivity Analysis

Case		ERR (%)
I.	Base	29
II.	Costs increased by 15%	24
III.	Costs increased by 30%	21
IV.	Benefits reduced by 15%	25
V.	Benefits reduced by 30%	22
VI.	Costs increased by 15%, benefits reduced by 15%	21
VII.	Costs increased by 30%, benefits reduced by 30%	15

2. Qualitative Analysis of EPA and ADC Components

a. Benefits

The economic benefits resulting from expenditures on the EPA and ADC sub-projects are exceedingly difficult to estimate because the benefits are highly dispersed over a wide range of agricultural producers, agribusiness processors, market dealers, and virtually all consumers. These project components will allow the GOP to develop more rational agricultural policies, with more confidence about the nature and consequences of alternative policies. They will also permit more timely analysis of agricultural production and marketing problems as technicians develop more accurate statistical summaries and a more accurate estimate of the results of proposed new policy initiatives.

Much of the long-term success of the EPA component will depend on the development of a more timely and accurate agricultural data system, as envisioned under the ADC component. Both components can make major contributions to Pakistan's ability to respond to international market conditions. Many commodity prices need to be realigned to more nearly reflect their competitiveness in the world markets. The World Bank estimates that Pakistan's domestic basmati rice price is only 68 percent of international parity. Pakistan's domestic sugar price is about 294 percent of the border price. The EPA and ADC components will provide the tools needed for the GOP to make price adjustments that will bring about net increases in economic welfare.

b. EPA

The economic return to increased policy analysis depends on the effectiveness of analysis in moving policies

toward a welfare-maximizing resource set. While this measure does not submit readily to quantification, there is general agreement among Pakistani analysts and international observers that the current policy set is not conducive to the optimal economic development of the agricultural sector. A change in policy that increased the growth of the agricultural sector by even one percent in a single year (without a parallel increase in costs) would generate a benefit to the economy of approximately $17 million. Thus a single policy change that called forth such a production response (by, say, altering incentives implicit in the national procurement policy for wheat) would yield a benefit more than double the undiscounted, undeflated cost of the entire EPA component.

A recent analysis of the Pakistan edible oils sector offers a fresh insight into the benefits that could accrue to the general economy by realigning prices toward international parity. The study concluded that Pakistan's large edible oil import requirement is largely due to its price control policy. If the retail price of vegetable ghee in mid-1983 were allowed to rise from Rs 10.7 per kilogram to the Indian border price at that time of about Rs 15, domestic oil production would increase from 299 thousand metric tons to 479 thousand metric tons, while total edible oil consumption would fall from 861 thousand tons to 808 thousand tons. Based on the general tenets of welfare economics, the resultant savings in foreign exchange costs of imported edible oil and the consumer losses from the higher price would yield a net annual gain to the Pakistan economy of $26 million. This net benefit is overly conservative because it does not include any of the numerous indirect benefits that would also arise from the edible oil price policy change. A detailed policy analysis would probably yield similar estimates of benefits that could be attained by aligning rice and sugar prices with international prices.

c. <u>ADC</u>

The successful implementation of the ADC component is critical for improved agricultural economic and policy analysis. Therefore, any benefits produced by the EPA component will likely include indirect benefits from improved agricultural data collection.

Once the ASF system is in place, the annual operating cost of the national data collection system will be approximately 60 percent of the current cost, even if the more expensive district data alternative is selected. Even if the system yields data no better than the current system (or the improvement has no value) this cost reduction alone is sufficient to produce a 22 percent rate of return over a 20 year period, after including the full cost of expatriate technical assistance, training, and commodities.

E. Financial Analysis

1. General

The financial resources for the Project will come from AID and the GOP. The total estimated cost of the Project is $39,460,000, consisting of $35.0 million of an A.I.D. grant and a GOP rupee contribution equivalent to $4,460,000. The total A.I.D. contribution to the project is 89 percent, while that of the GOP is 11 percent.

Four summary tables are provided on the following pages. Table 10 provides a summary of Project costs by fiscal year and source of funding; Table 11 depicts costs by expense category and source of funding; Table 12 shows costs by component, expense category and source of funding; and Table 13 summarizes A.I.D. funding by expense category and fiscal year.

TABLE 10

Summary of Project Costs by Fiscal Year and Source of Funding ($'000)

Source of Funding	U.S. Fiscal Year 84	85	86	87	88	89	Total
A.I.D. Grant							
FX	2047	3243	2795	2603	1796	425	12907
LC	526	2909	4317	4817	5261	4243	22093
Sub-Total	2573	6152	7112	7420	7057	4668	35000
GOP	19	138	596	899	1272	1536	4460
TOTAL	2592	6290	7708	8319	8329	6222	39460
Planned Obligation	5000	5000	10000	15000	--	--	35000

Project costs are defined as anticipated sub-obligations or commitments of funding through, e.g., PIOs, contracts, purchase orders or work orders for civil works. Project costs have been adjusted for inflation at an annual rate of 7 percent for foreign exchange and 10 percent for local costs. A contingency factor of 5 percent has been applied to all A.I.D. and GOP project costs. Local costs are expressed as dollar equivalents at the prevailing exchange rate of U.S. $1.00 = Rs 13.50.

TABLE 11

Summary of Project Costs
by Expense Category and Source of Funding
($ '000)

Expense Category	Life of Project Funding: A.I.D. Grant -FX-	A.I.D. Grant -LC-	GOP Contribution	Total
1. Technical Assistance				
a. Short-Term	1952	983	--	2935
b. Long-Term	4022	1485	--	5507
c. Home Office	290	--	--	290
Sub-Total	6264	2468	--	8732
2. Training				
a. U.S.				
i. Short Term	589	197	--	786
ii. Long Term	1965	158	110	2233
b. In-Country	--	509	--	509
Sub-Total	2554	864	110	3528
3. Commodities				
a. Vehicles	824	--	--	824
b. Computers	570	--	--	570
c. Others	281	3	10	294
Sub-Total	1675	3	10	1688
4. Other Costs				
a. Storage Rehabilitation	--	7546	1888	9434
b. Economic Studies	--	4485	--	4485
c. IFPRI Studies	843	315	--	1158
d. Evaluation	209	80	--	289
e. Local Staffing	--	2689	235	2924
f. Others	700	2511	2005	5216
Sub-Total	1752	17626	4128	[illegible]506
Total	12245	20961	4248	37454
Contingency (5%)	662	1132	212	2006
GRAND TOTAL	12907	22093	4460	39460

TABLE 12

Summary of Project Costs
by Project Component, Expense Category and Source of Funding
($ '000)

Project Components	Life of Project Funding: A.I.D. Grant -FX-	-LC-	GOP Contribution	Total
1. Agricultural Data Collection				
a. Technical Assistance	1304	472	--	1776
b. Training	742	330	--	1072
c. Commodities	1172	--	--	1172
d. Local Staffing	--	2327	--	2327
e. Others	350	1353	--	1703
Sub-Total	3568	4482	--	8050
2. Economic and Policy Analysis				
a. Technical Assistance	2160	890	--	3050
b. Training	1079	215	78	1372
c. Commodities	105	--	--	105
d. Economic Studies	--	4485	--	4485
e. IFPRI Studies	843	315	--	1158
f. Others	37	243	--	280
Sub-Total	4224	6148	78	10450
3. Post-Harvest Management				
a. Technical Assistance	1709	720	--	2429
b. Training	733	319	32	1084
c. Commodities	347	3	--	350
d. Storage Rehabilitation	--	7546	1888	9434
e. Others	313	677	2005	2995
Sub-Total	3102	9265	3925	16292
4. Project Coordination Unit				
a. Technical Assistance	1091	386	--	1477
b. Training	--	--	--	0
c. Commodities	51	--	10	61
d. Local Staffing	--	362	235	597
e. Evaluation	209	80	--	289
f. Others	--	238	--	238
Sub-Total	1351	1066	245	2662
Total	12245	20961	4248	37454
Contingency (5%)	662	1132	212	2006
GRAND TOTAL	12907	22093	4460	39460

TABLE 13

Summary of A.I.D. Funding by Expense Category and Fiscal Year
($ '000)

Expense Category	FISCAL YEAR 1984	1985	1986	1987	1988	1989	GRAND TOTAL
1. Technical Assistance							
a. Short-Term	61	935	836	673	377	53	2935
b. Long-Term	55	1162	1252	1349	1455	234	5507
c. Home Office	128	86	37	39	--	--	290
Sub-Total	244	2183	2125	2061	1832	287	8732
2. Training							
a. U.S.							
i. Short Term	48	412	139	110	77	--	786
ii. Long Term	87	562	648	576	224	26	2123
b. In-Country	--	105	125	139	140	--	509
Sub-Total	135	1079	912	825	441	26	3418
3. Commodities							
a. Vehicles	438	34	132	220	--	--	824
b. Computers	570	--	--	--	--	--	570
c. Others	147	65	30	20	22	--	284
Sub-Total	1155	99	162	240	22	--	1678
4. Other Costs							
a. Storage Rehabilitation	--	379	1664	1830	2013	1660	7546
b. Economic Studies	--	750	810	900	975	1050	4485
c. IFPRI Studies	451	458	249	--	--	--	1158
d. Local Staffing	14	279	400	585	725	686	2689
e. Evaluation	--	46	--	54	--	188	288
f. Others	442	564	426	545	687	548	3212
Sub-Total	907	2476	3549	3914	4400	4132	19[illegible]
Total	2441	5837	6748	7040	6695	4445	[illegible]3206
Contingency (5%)	132	315	364	380	362	241	1794
GRAND TOTAL	2573	6152	7112	7420	7057	4686	35000

2. Summary Cost Estimates and Financial Plan

a. A.I.D. Contribution

The A.I.D. grant of $35.0 million accounts for 89 percent of the total financial costs of the project. While $12.9 million, or about 37 percent, of the A.I.D. contribution will finance foreign exchange costs, the remaining $22.1 million, or about 63 percent, will cover local costs associated largely with construction, economic research activities, technical assistance and training. The A.I.D. contribution by expense category is as follows: technical assistance: 24.9 percent; training: 9.8 percent; commodities: 4.8 percent; storage rehabilitation: 21.6 percent; economic studies: 12.8 percent; IFRPI studies: 3.3 percent; local staffing: 6.6 percent; other costs: 11.2 percent; and contingency: 5.0 percent. Table 14 summarizes the percent distribution of A.I.D. funds by project component and expense category.

TABLE 14

Summary of A.I.D. Project Costs by Project Component and Expense Category (percentage)

	Project Components			
Expense Category	ADC	EPA	PHM	PCU
Technical Assistance	5.1	8.7	6.9	4.2
Training	3.1	3.7	3.0	-
Commodities	3.3	0.3	1.0	0.2
Storage Rehabilitation	-	-	21.6	-
Economic Studies	-	12.8	-	-
IFPRI Studies	-	3.3	-	-
Local Staffing	6.6	-	-	-
Other Costs	4.9	0.9	2.8	2.6
Contingency	1.3	1.5	1.9	0.3
TOTAL	24.3	31.2	37.2	7.3

A total of $7,546,000 (adjusted for inflation) in A.I.D. funds has been earmarked for storage rehabilitation and is estimated to be sufficient to cover 80 percent of the costs required to rehabilitate approximately 750,000 MT of cereal grain storage capacity. Estimates of construction costs obtained from the provincial Departments of C&W and DFAs, MOFA Storage Cell, World Bank and ADB ranged between $6.00 and $11.00 per metric ton stored. Since a large part of rehabilitation involves such

simple repairs as whitewashing, waterproofing, window sealing, and the like, an average cost estimate of $8.50 per metric ton was used.

Approximately 500 personnel will be removed in phases from the existing provincial statistical staffs to be trained in ASF methodology. This will necessitate hiring approximately the same number of "temporary" personnel at a cost estimated not to exceed $2.35 million to maintain current data collection activities until the ASF is in place and fully operational. As the ASF training, construction and implementation proceeds, the requirement for temporary personnel will phase out with the old system.

AID will finance the international travel costs of all participants enrolled in training programs under one year in duration. A participant training travel waiver, which exempts the GOP from having to cover these costs, has been signed by the USAID/Pakistan Mission Director and is included as Annex G. AID dollar grant funds used to finance local costs will, to the maximum extent possible, and in particular for the grain storage rehabilitation program, be disbursed in U.S. dollars in order to maximize the balance of payments impact of this program in accordance with the overall objectives of the USG-GOP economic and development assistance program. A FAA Section 612(b) certification has been signed by the USAID/Pakistan Mission Director and is included as Annex C.

In addition to the above, A.I.D. will finance approximately 19 additional federal-level administrative and professional positions within the Agricultural Statistics and Economics Section of the PU/MOFA during the first two years of each person's employment with the project. Beginning in the third year of each person's employment with the project, he/she will be absorbed into the Government structure and his/her salary made a part of the MOFA's recurrent cost budget.

The planned obligation schedule for the $35.0 million grant is as follows: FY 1984 = $5.0 million; FY 1985 = $5.0 million; FY 1986 = $10.0 million; and FY 1987 = $15.0 million.

b. <u>GOP Contribution</u>

The GOP's rupee contribution to the project, the equivalent of $4.46 million, will be used to finance: storage rehabilitation: 42 percent; repair and maintenance: 45 percent; an expanded PU within the MOFA: 5.0 percent; commodities: 1.0 percent; international travel costs of participants in training programs of more than one year in duration: 2.0 percent; and contingency: 5.0 percent. Table 15 summarizes the percentage breakdown of GOP funding by expense category and fiscal year.

TABLE 15

Summary of GOP Funding
by Expense Category and Fiscal Year
($ '000)

Expense Category	U.S. Fiscal Year -84-	-85-	-86-	-87-	-88-	-89-	Total
Training			51	34	25		110
Commodities	10						10
Construction (Rehab.)		95	417	458	505	413	1888
Others	8	36	100	364	682	1050	2240
Total	18	131	568	856	1212	1463	4248
Contingency (5%)	1	7	28	43	60	73	212
GRAND TOTAL	19	138	596	899	1272	1536	4460

3. Recurrent Costs

Annual recurrent costs for maintaining the Economic Analysis Network and the related studies after project completion are estimated at Rs 13.6 million. Alternative sources of financing this activity once the A.I.D. project terminates will be examined during project implementation.

Estimated annual recurrent costs for the ASF system to generate district level data is 60 percent of the costs for maintaining the present data collection system which are estimated at Rs 98.0 million. In Punjab and Sind Provinces, the cost savings alone could support the EAN and related policy studies for almost three years.

As mentioned earlier, one of the first major activities to be financed under this project will be a comprehensive study and analysis of R&M recurrent costs and related issues for all existing and planned public sector storage grain facilities. This study is intended to provide the GOP with sufficient and analytically sound information and policy options on which to develop a long-term plan for meeting the recurrent R&M costs of the system.

In Sind and Punjab Provinces where the great majority of storage is located, past GOP allocations for R&M have been estimated at 0.3 percent of replacement costs. The Kansas State consultant team recommended a minimum of 1.5 percent which is fully aligned with the estimates used by the IBRD and ADB storage construction projects. To meet this requirement, government expenditures for this purpose would have to increase five-fold. The absolute magnitude of the increase would be equal to approximately Rs 50.0 million per annum. There are indications, however, that the GOP has recently taken remedial action to increase repair and maintenance expenditures to approximately 0.9 percent of replacement costs.

Policy measures and performance targets to be implemented and achieved during the life of the project will be mutually agreed upon by A.I.D. and the GOP prior to implementation of the rehabilitation component. The Project Agreement will also contain a covenant whereby the GOP agrees to report no less than annually its progress in achieving the targets and agreed upon policy changes.

4. Methods of Implementation and Financing

Table 16 provides a summary of the proposed methods of implementation and financing for the subject project by component, in accordance with AID's Payment Verification Policy Implementation Guidance dated December 30, 1983. No departures from the three preferred methods of financing are contemplated for this project.

Table 16

Methods of Implementation and Financing

Project Component	Method of Implementation	Method of Financing	Approximate Amount (US $ '000)
EPA	TA-AID Competitive Institutional Contract	Direct Payment	3,050
	TA-AID Contract with IFPRI	FRLC	1,158
	Local Training* (PIL to earmark funds)	HC Reimbursement	215
	Participant (Overseas) Training (through DST contractor)	FRLC	1,079
	Commodities (Computers and Vehicles)--AID Procurement	Direct Payment	105
	Local Economic Studies (PIL to earmark funds)	HC Reimbursement	4,485
	Local Staff for PU/MOFA** (hired by U.S. or local contractor)	Direct Payment	280
		Sub-Total	10,372
ADC	TA-PASA with USDA/SRS	Direct Payment	1,776
	Participant (Overseas) Training (through DST contractor)	FRLC	742
	Local Training* (PIL to earmark funds)	HC Reimbursement	330
	Commodities (Computers and Vehicles)--AID Procurement	Direct Payment	1,172
	Local Staff for DFAs** (hired by U.S. or local contractor)	Direct Payment	2,327
	Other Costs	Direct Payment or HC Reimbursement	1,703
		Sub-Total	[illegible]

Continued. . .

Table 16

Methods of Implementation and Financing
(Continued)

Project Component	Method of Implementation	Method of Financing	Approximate Amount (US $ '000)
PHM	TA-AID Competitive Institutional Contract (Major TAT)	Direct Payment	1,429
	TA-AID Competitive Institutional Contract (O&M Recurrent Costs/Management Audit)	Direct Payment	600
	TA-AID Competitive Institutional Contract (Bulk Storage Study)	Direct Payment	200
	TA-AID Competitive Local A&E Contract	Direct Payment	200
	Participant (Overseas) Training (through DST contractor)	FRLC	733
	Local Training* (PIL to earmark funds)	HC Reimbursement	319
	Commodities (Vehicles and Storage Management and Research)-- AID Procurement	Direct Payment	350
	Construction/Rehabilitation	Modified Fixed Amount Reimbursement	7,546
	Local Staff for DFAs** (hired by U.S. or local contractor)	Direct Payment	100
	Local Research Program (PIL to earmark funds)	HC Reimbursement	890
		Sub-Total	12,367
PCU	TA-AID-PSC	Direct Payment	1,477
	TA-AID (IQCs or Buy-Ins to Central Projects for Evaluation)	Direct Payment	289
	Commodities (Vehicles and Household/Office Equipment)-- AID Procurement	Direct Payment	51
	Local Staff-AID-PSCs	Direct Payment	362
	Other Costs	Direct Payment	238
		Sub-Total	2,417
		TOTAL	33,206
	Contingency	Direct Payment or HC Reimbursement	1,794
		GRAND TOTAL	35,000

*Most, if not all, of these funds may be included in the long-term, direct AID major TA contracts under the respective components, in which case the method of financing would be direct reimbursement/payment to the contractor.

**The local staff for all these major project components may be hired by a local private sector "body shop" firm under a direct AID contract, or may be included in the long-term, direct AID major TA contract with a U.S. institution under the respective components. In either case, the method of financing would be direct payment to either the U.S. or local contractor.

NOTE: In the event a non-profit organization is awarded any of the competitive institutional contracts for TA, the Mission may utilize FRLC as the method of financing.

Both IFPRI and the Development Support Training (DST) Project Contractor (Academy for Educational Development) are non-profit organizations and hence are eligible for a FRLC.

F. Environmental Analysis

As a project focused primarily on research, training, and analysis, the FSMP is exempted from the requirement for an environmental analysis, as discussed in the PID. Nonetheless, it is appropriate to consider briefly how the project will affect environmental management in Pakistan. The points summarized below are discussed in more detail in the consultants' reports.

The FSMP is expected to promote sound environmental management practices in Pakistan in three ways. First, the policy analysis activities will enable the GOP to view policy issues from a longer-range and broader perspective than is currently the case, taking into consideration the impact of prospective policies on the environment as well as on the agricultural and national economy of Pakistan. Analysis of the allocation of resources to investment in irrigation, for example, could examine such questions as the long-term impact of increased irrigation on salinization and the rise of the water table in affected areas.

Second, the grain storage training sub-component will assist the GOP to reduce the risk to humans through incorrect application of storage technologies, particularly the selection and handling of pesticides. Safer management practices will also be facilitated by the physical upgrading of the facilities, which will incorporate simple non-chemical insect control features (such as better sealing of walls) and reduce the amount of pesticides needed to achieve a given level of control (as, for example, by replacing a rough surface with a smooth masonry finish). Better storage will also minimize health risks to the consumer by reducing threats created by improper storage of grains.

Third, grain storage research and management improvements will assist the GOP to develop and implement grain storage technologies that are environmentally sound as well as technically effective. The integrated pest management research planned will be particularly important in achieving pest control with reduced use of chemicals. The research and monitoring program for insect resistance will assist the storage authorities to forestall development of pesticide-resistant strains of grain pests, which will reduce the necessity to use increased amounts of chemicals to control pests or to move to more powerful and potentially more dangerous chemicals.

The Project will not finance the purchase of pesticides, with the exception of minor amounts used in the training and research programs of the grain storage component. Adequate facilities and personnel are available in Pakistan to store and utilize these chemicals without risk to human health.

G. Narcotics Impact Analysis

The Project is not designed to have a significant impact on the supply or demand for illicit drugs within Pakistan. Nonetheless, the Project may be expected to provide indirect support to the reduction of opium acreage and production in two ways. First, the policy analysis supported by the project will promote the adoption of improved policies for the agricultural sector as a whole, leading to higher farmer incomes and increased profitablity for legitimate crops. Second, the grain storage component will promote a sounder grain economy and, by reducing post-harvest losses, help to maintain attractive grain prices to the farmers. Since wheat is the principal alternative to poppy cultivation in most of the opium production areas, this component will reinforce the eradication campaign.

VI. CONDITIONS, COVENANTS AND NEGOTIATING STATUS

A. Conditions Precedent to Disbursement

1. Conditions Precedent to First Disbursement

Except as A.I.D. may otherwise agree in writing, prior to any disbursement of funds under this Project, or to the issuance by A.I.D. of documentation pursuant to which such disbursement will be made, the Grantee shall furnish to A.I.D., in form and substance satisfactory to A.I.D.:

a. A written opinion of Counsel acceptable to A.I.D. that this 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; and

b. A written statement setting forth the names and titles of the persons holding or acting in the Office of the Grantee and representing that the named person or persons have the authority to act as the representative or representatives of the Grantee, together with a specimen signature of each such person certified as to its authenticity.

2. Condition Precedent to Disbursement for Activities under the Agricultural Data Collection Component

Except as A.I.D. may otherwise agree in writing, prior to any disbursement of funds under this Project for activities under the Agricultural Data Collection Component of the Project, or to the issuance by A.I.D. of documentation pursuant to which such disbursement will be made, the Grantee, through its Survey of Pakistan, shall furnish to A.I.D., in form and substance satisfactory to A.I.D.. written assurance that use of aerial photos and topographical maps required for implementation of the Area Sampling Frame Methodology will be made available to project-financed consultants and/or A.I.D. designated and Grantee approved GOP staff.

3. Conditions Precedent to Disbursement for Research Studies under the Economic and Policy Analysis Component to be Undertaken by Exclusively Local Research Entities

Except as A.I.D. may otherwise agree in writing, prior to any disbursement of funds under this Project for research studies by exclusively local, non-expatriate research persons or entities under the Economic and Policy Analysis Component of this Project, or to the issuance by A.I.D. of documentation pursuant to which such disbursement will be made,

the Grantee shall furnish, in form and substance satisfactory to A.I.D.:

a. Documentation that the Grantee has established a Steering Committee* and an Economic Analysis Network Group; and

b. A Work Plan setting forth, in detail, the proposed implementation of the local research program. Requirements for this Work Plan shall be established by A.I.D. in Project Implementation Letters.

4. Condition Precedent to Disbursement for Rehabilitation of Grain Storage Facilities

Except as A.I.D. may otherwise agree in writing, prior to any disbursement of funds under this Project for any engineering or construction services related to the rehabilitation of grain storage facilities, or to the issuance by A.I.D. of documentation pursuant to which such disbursement will be made, the Grantee shall furnish to A.I.D., in form and substance satisfactory to A.I.D., a long-term plan for meeting the operation and maintenance (O&M) recurrent costs for all existing and planned public sector grain storage facilities, including policy measures to be implemented and performance targets to be achieved over the life of this Project, which takes into account the findings and recommendations of the comprehensive study, to be financed by A.I.D., to, amongst other things, analyze O&M recurrent cost and management issues in the sector and identify specific policy options and recommendations to address such problems in the sector.

5. Conditions Precedent to Disbursement for Rehabilitation of Grain Storage Facilities in a Specific Province

Except as A.I.D. may otherwise agree in writing, prior to any disbursement of funds under this Project for any construction services related to the rehabilitation of grain storage facilities in a specific Province, or to the issuance by A.I.D. of documentation pursuant to which such disbursement will be made, the Grantee shall furnish to A.I.D., in form and substance satisfactory to A.I.D.:

a. Written confirmation of the Grantee's acceptance and agreement with the results and findings of the study, to be financed by A.I.D., to develop a rehabilitation plan of existing grain storage facilities over five years old for that Province including a definition of

*This Committee may be the GOP's existing Federal Committee on Agriculture.

rehabilitation needs and priorities and estimated costs; and,

b. Documentation that the Department of Food and Agriculture for that Province where the rehabilitation work is to be carried out has entered into an agreement with the Department of Communcations and Works of that Province for rehabilitation of existing grain storage facilities under this Project.

6. Conditions Precedent to Disbursement for Grain Storage Research Studies Under the Post-Harvest Management Component to be Undertaken by Exclusively Local Research Entities

Except as A.I.D. may otherwise agree in writing, prior to any disbursement of funds under this Project for grain storage research studies by exclusively local, non-expatriate research persons or entities to be implemented under the supervision of the Pakistan Agricultural Research Council (PARC) through the Post-Harvest Management Component of this Project, or to the issuance by A.I.D. of documentation pursuant to which such disbursement will be made, the Grantee shall furnish, in form and substance satisfactory to A.I.D.:

a. Documentation that the Grantee has established a Coordination Unit for Post-Harvest Management Research and Technology Transfer;

b. Documentation that the Grantee, through its PARC has appointed a Program Coordinator for the Coordination Unit mentioned above; and

c. A Work Plan setting forth, in detail, the proposed implementation of the local research program. Requirements for this Work Plan shall be established by A.I.D. in Project Implementation Letters.

B. Covenants

1. The Grantee agrees

a. to make all reasonable efforts to obtain necessary GOP budgetary allocations for maintenance of all grain storage facilities rehabilitated, in part or in whole, under this Project; and

b. to maintain in good operational condition all grain storage facilities rehabilitated, in part or in whole, under this Project.

2. The Grantee agrees to furnish to A.I.D., no less than every twelve (12) months from the date of the signing of this Project Agreement, a report, in form and substance satisfactory to A.I.D., setting forth how operation and maintenance (O&M) recurrent costs are being met by the Grantee for all existing and newly built grain storage facilities.

3. The Grantee agrees to assure that adequate non-professional staff are provided for the Planning Unit/Ministry of Food and Agriculture throughout the life of the Project.

4. With regard to additional administrative and professional staff hired with project funds for the Planning Unit/Ministry of Food and Agriculture, the Grantee agrees to establish a mutually agreed number of permanent posts and to reflect these in the regular recurrent budget of the Ministry of Food and Agriculture, except as A.I.D. may otherwise agree in writing.

5. The Grantee agrees to make all reasonable efforts to secure adequate GOP budgetary allocations to continue economic and policy analysis studies by local institutions after the life of the Project.

6. Except as the Parties may otherwise agree in writing, the Grantee, acting through its Ministry of Food and Agriculture, shall make all reasonable efforts to require that each person trained under this Project works in activities related to agricultural data collection, post-harvest management and/or agricultural economic and policy analysis in Pakistan for not less than three times the length of time of his or her training program provided, however, that in no event shall such an individual be allowed to work in agricultural data collection, post-harvest management, and/or agricultural economic and policy analysis activities for less than one year, nor be required to work in agricultural data collection, post-harvest management, and/or agricultural economic and policy analysis activities for more than five years from the date of that individual's completion of training.

C. Negotiating Status

The Project as described in this Project Paper has been fully discussed with appropriate GOP officials. The GOP supports the Project as designed and there is no reason why the Project cannot proceed to implementation as soon as the Project Agreement is signed. No legislation is necessary to implement the Project as described.

FOOD SECURITY MANAGEMENT PROJECT
(391-0491)

VII. ANNEXES

ANNEX A

STATE 240446

AID 10 INFO AMB DCM AGRI ECON CHRON

R 262020Z AUG 82
EM SECSTATE WASHDC
TO AMEMBASSY ISLAMABAD PRIORITY 0984
BT
UNCLAS STATE 240446

AIDAC

E.O. 12356: N/A
TAGS:
SUBJ: AGRICULTURAL PRODUCTION, DISTRIBUTION, AND STORAGE (391-0476)

REF: STATE 156278

1. APAC REVIEWED SUBJECT PID AUGUST 16 AND AUTHORIZED MISSION TO PROCEED WITH PROJECT PAPER DESIGN. FOLLOWING ISSUES SHOULD BE ADDRESSED IN PROJECT PAPER.

2. **FOOD SECURITY COMPONENT:** PID PROPOSES TO SUPPORT AN EXPANSION OF ON-FARM STORAGE CAPACITY; HOWEVER, APAC FELT THAT FOOD SECURITY OBJECTIVE MIGHT BE BETTER SERVED IF PROJECT FOCUSED ON UPGRADING LARGE-SCALE OR COLLECTION CENTER STORAGE FACILITIES, WHICH WE ASSUME ARE CURRENTLY OWNED AND MANAGED BY THE PUBLIC SECTOR. DURING PP DESIGN, MISSION SHOULD EXAMINE RELATIVE IMPACT OF IMPROVEMENT IN ON-FARM STORAGE FACILITIES AS OPPOSED TO AN IMPROVEMENT IN COLLECTION CENTER STORAGE FACILITIES. IF, ON THE BASIS OF THIS EXAMINATION, MISSION DECIDES TO SUPPORT STORAGE IMPROVEMENT AT THE ON-FARM LEVEL, PP SHOULD INCLUDE DISCUSSION OF GOVERNMENT PRICING POLICIES AND WHETHER THESE POLICIES PROVIDE ADEQUATE INCENTIVE FOR THE FARMER TO INVEST IN IMPROVED STORAGE FACILITIES. IF THE MISSION DETERMINES THAT SUPPORTING IMPROVEMENT OF COLLECTION CENTER STORAGE FACILITIES IS MORE APPROPRIATE, PP SHOULD DISCUSS POTENTIAL ROLE FOR PRIVATE SECTOR IN OWNING AND MANAGING THESE FACILITIES. IN EITHER CASE, PP SHOULD THOROUGHLY DISCUSS WHAT OTHER DONORS, PARTICULARLY THE WORLD BANK, ARE DOING IN REGARD TO STORAGE AND RELEVANT GOP POLICIES.

3. EDIBLE OIL COMPONENT: AS NOTED IN PID, GOVERNMENT POLICIES IN REGARD TO THE PRODUCTION, PROCESSING, AND MARKETING OF EDIBLE OILS ARE NOT CONDUCIVE TO AN EXPANDING AND EFFICIENT INDUSTRY. PP SHOULD DISCUSS POLICY CONSTRAINTS TO GROWTH IN THE OILSEED INDUSTRY, INCLUDING ESPECIALLY THOSE THAT MIGHT BE CRITICAL TO THE SUCCESS OF THIS PROJECT, AND IDENTIFY SPECIFIC POLICIES ON WHICH PROJECT WILL HAVE A POSITIVE IMPACT. ON SEPARATE ISSUE, RAISED BY MISSION, THE PROPOSED INTER___TIONS FOR ASSISTING IN THE DEVELOPMENT OF THE PAKISTAN EDIBLE OILS INDUSTRY,

SPECIFICALLY COTTONSEED OIL, ARE NOT PRECLUDED BY PD-71. PRINCIPAL REASON IS THAT PAKISTAN IS, AND IS LIKELY TO REMAIN, NET IMPORTER OF EDIBLE OILS. FURTHER INFORMATION REGARDING THIS ISSUE WILL BE POUCHED.

4. FRUIT AND VEGETABLE COMPONENT: APAC SAW ONE ASPECT OF THIS COMPONENT AS AN OPPORTUNITY TO FURTHER PROMOTE U.S./G.O.P. POLICY OF CURTAILING POPPY PRODUCTION. SPECIFICALLY, VARIOUS METHODS OF DEMONSTRATING VALUE OF FRUITS AND VEGETABLES AS ALTERNATIVE CROPS SHOULD BE EXPLORED DURING PP DESIGN AND METHODS DETERMINED TO BE MOST EFFECTIVE PRESENTED IN PP. IN DESIGNING THIS COMPONENT, MISSION MIGHT FIND IT USEFUL TO STUDY THE SUCCESSFUL EXPERIENCE OF HIMACHAL PRADESH, INDIA, IN FRUIT AND VEGETABLE PRODUCTION AND MARKETING. FARMER ORGANIZATION ELEMENT OF THIS COMPONENT IS OBVIOUSLY CRITICAL AND SHOULD BE TREATED THOROUGHLY IN PP.

5. AGRO-INDUSTRY COMPONENT: APAC WAS ADVISED THAT THERE WAS A POSSIBILITY THIS COMPONENT WOULD FALL OUT OR BE SUBSTANTIALLY REDUCED. TO EXTENT COMPONENT REMAINS INTACT, APAC WOULD EXPECT MISSION TO PROMOTE JOINT VENTURES BETWEEN AMERICAN AND PAKISTANI FIRMS TO TAKE ADVANTAGE OF EXPERTISE OF U.S. FIRMS IN PROCESSING AND MARKETING OF OILSEEDS, FRUITS, AND VEGETABLES. TO ADDRESS CONCERNS OF PPC, PP ANALYSIS SHOULD ADDRESS QUESTION OF NEED FOR SPECIAL CREDIT FOR AGRO-INDUSTRIES. THE INFLUENCE AND IMPACT OF CREDIT POLICIES (ALLOCATION CONTROLS, INTEREST RATE CONTROLS, ETC.) ON THE AVAILABILITY OF CREDIT FOR INDUSTRY INVESTMENT SHOULD BE ASSESSED. IF CREDIT FOR SUCH PURPOSES IS CONSTRAINED BECAUSE OF INADEQUATE POLICIES, PP ANALYSIS SHOULD IDENTIFY WHY THIS IS SO, AND LINK CREDIT COMPONENT TO APPROPRIATE CREDIT POLICY CHANGES. ADDITIONALLY, PROPOSED CREDIT COMPONENT SHOULD IDEALLY BE UNSUBSIDIZED. ANY SUBSIDY PROPOSED MUST BE FULLY JUSTIFIED.

6. GENERAL GUIDANCE: FOLLOWING ARE COMMENTS WHICH RELATE TO THE PROJECT AS A WHOLE RATHER THAN TO ANY ONE SPECIFIC COMPONENT:

A. PROJECT DESIGN: UNDERSTANDING AND WORKING WITHIN THE EXISTING SOCIAL STRUCTURE WILL BE IMPORTANT TO THE SUCCESS OF THE PROJECT. ACCORDINGLY, THE APAC SUGGESTS MISSION CONSIDER A GREATER ROLE FOR SOCIAL SCIENTISTS, E.G., RURAL SOCIOLOGISTS, RURAL DEVELOPMENT EXPERTS, IN PROJECT DESIGN. SOCIAL SCIENTISTS SHOULD PAY PARTICULAR ATTENTION TO THE IMPACT PROJECT ACTIVITIES WILL HAVE ON WOMEN AND ENDEAVOR TO IDENTIFY ACTIVITIES WHICH THE PROJECT COULD SUPPORT THAT WOULD INVOLVE AND/OR BENEFIT WOMEN. TO ADDRESS LATTER CONCERNS, MISSION MAY WISH TO INCLUDE WOMAN SOCIOLOGIST IN DESIGN TEAM.

B. PROJECT COMPLEXITY: AS PRESENTED IN PID, THE PROJECT WOULD BE COMPOSED OF FOUR DISTINCT COMPONENTS AND WOULD INVOLVE THE PARTICIPATION OF FEDERAL GOVERNMENT AGENCIES, PROVINCIAL GOVERNMENT AGENCIES, AND THE PRIVATE SECTOR. PP SHOULD EXPLAIN HOW EFFECTIVE COORDINATION BETWEEN THE VARIOUS ORGANIZATIONS WILL BE ESTABLISHED AND MAINTAINED.

C. RELEVANT S AND T BUREAU PROJECTS: THE S AND T BUREAU IS FINANCING SEVERAL PROJECTS WHICH THE MISSION MAY WISH TO DRAW UPON IN THE DESIGN AND IMPLEMENTATION OF THIS PROJECT. PROJECTS IDENTIFIED AS DIRECTLY RELEVANT INCLUDE THE SEED PROGRAM AND INDUSTRY DEVELOPMENT PROJECT WITH MISSISSIPPI STATE UNIVERSITY; IMPROVED VARIETIES OF SOYBEANS PROJECT WITH THE UNIVERSITY OF ILLINOIS; IMPROVEMENT OF POSTHARVEST GRAIN SYSTEMS WITH KANSAS STATE UNIVERSITY; STORAGE AND PROCESSING OF FRUITS AND VEGETABLES WITH THE UNIVERSITY OF IDAHO; CRSP--PEANUTS WITH THE UNIVERSITY OF GEORGIA; AND, CONTROL OF VERTEBRATE PESTS WITH THE DENVER WILDLIFE RESEARCH CENTER. A DESCRIPTION OF THESE AND OTHER CENTRALLY FUNDED PROJECTS MAY BE FOUND IN A PUBLICATION ENTITLED QUOTE CENTRALLY-FUNDED AGRICULTURAL PROJECTS AND PERSONNEL AVAILABLE TO USAID MISSIONS UNQUOTE. THE PUBLICATION WAS POUCHED BY HANKINS TO CURTIS.

D. EXEMPTION FROM THE REQUIREMENTS OF OMB CIRCULAR A-76: IF MISSION INTENDS TO USE USDA FOR TECHNICAL ASSISTANCE, ASSISTANT ADMINISTRATOR MUST FIRST DETERMINE THAT PASA IS EXEMPT FROM OMB CIRCULAR A-76. EXEMPTION MAY BE GRANTED IF THE PASA IS FOR THE PROVISION OF TECHNICAL ASSISTANCE; THE FACILITIES AND RESOURCES OF THE PROPOSED PASA AGENCY ARE PARTICULARLY OR UNIQUELY SUITED FOR THE REQUIRED TECHNICAL ASSISTANCE; AND SUCH FACILITIES AND RESOURCES ARE NOT COMPETITIVE WITH THE PRIVATE SECTOR. SEE HANDBOOK 12, SEC. 1B2 AND REFTEL. SHULTZ

BT
#0446

PROJECT CHECKLIST

Listed below are statutory criteria applicable generally to projects with FAA funds and project criteria applicable to individual funding sources: Development Assistance (with a subcategory for criteria applicable only to loans); and Economic Support Fund.

CROSS REFERENCES: IS COUNTRY CHECKLIST UP TO DATE? — Yes
HAS STANDARD ITEM CHECKLIST BEEN REVIEWED FOR THIS PROJECT? — Yes

A. GENERAL CRITERIA FOR PROJECT

1. Continuing Resolution Unnumbered; FAA Sec. 634A; Sec. 653(b).

   (a) Describe how authorizing and appropriations Committees of Senate and House have been or will be notified concerning the project; (b) is assistance within (Operational Year Budget) country or international organization allocation reported to Congress (or not more than $1 million over that amount)?

   (a) Congressional Notification and Congressional Presentation.

   (b) Yes, assistance is within the FY 1984 operational year budget.

2. FAA Sec. 611(a)(1). Prior to obligation in excess of $100,000, will there be (a) engineering, financial other plans necessary to carry out the assistance and (b) a reasonably firm estimate of the cost to the U.S. of the assistance?

   (a) Yes

   (b) Yes

FAA Sec. 611(a)(2). If further legislative action is required within recipient country, what is basis for reasonable expectation that such action will be completed in time to permit orderly accomplishment of purpose of the assistance?	No further legislative action is required.
FAA Sec. 611(b); Continuing Resolution Sec. 501. If for water or water-related land resource construction, has project met the standards and criteria as set forth in the Principles and Standards for Planning Water and Related Land Resources, dated October 25, 1973?	N.A.
FAA Sec. 611(e). If project is capital assistance (e.g., construction), and all U.S. assistance for it will exceed $1 million, has Mission Director certified and Regional Assistant Administrator taken into consideration the country's capability effectively to maintain and utilize the project?	Yes, Mission Director's 611(e) certification is included in the Project Paper.
FAA Sec. 209. Is project susceptible of execution as part of regional or multilateral project? If so why is project not so executed? Information and conclusion whether assistance will encourage regional development programs.	This project is highly Pakistan-specific and hence is not susceptible to execution as a part of a regional project, nor will it likely encourage regional development programs. Nevertheless, the IBRD and ADB will be implementing major grain storage construction programs during the life of the AID project, and the latter has been designed to compleme and reinforce the activities of these two donors as well as the FAO which is also involved, in a limited way, in the economic and policy analysis and grain storage sub-sectors.

7.	FAA Sec. 601(a). Information and conclusions whether project will encourage efforts of the country to: (a) increase the flow of international trade; (b) foster private initiative and competition; and (c) encourage development and use of cooperatives, and 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) Yes (b) Yes (c) No (d) Yes (e) Yes (f) No	This project is intended to have a major impact on economic policy and analysis, policy decision-making, and agricultural sector policies in Pakistan.
8.	FAA Sec. 601(b). Information and conclusion 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).		U.S. private enterprises will participate as suppliers of both goods and services under this project.
9.	FAA Sec. 612(b), 636(h); Continuing Resolution Sec. 508. Describe steps taken to assure that, to the maximum extent possible, the country is contributing local currencies to meet the cost o contractual and other services, and foreign currencies owned by the U.S. are utilized in lieu of dollars.		This is an ESF-funded project. Nevertheless, the GOP and Provincial Governments will contribute the equivalent of $4.5 million over the life of the project, or about 11 percent of total project cots, to help finance local costs. The Mission Director has certified the disbursemer of U.S. dollars in lieu of U.S. Treasury-owned excess rupees to cover some of the local costs under this project. This action is consistent with one of the major objectives of the renewed economic assistance program to Pakistan which is to maximize the balance of payments impact of the program.
10.	FAA Sec. 612(d). Does the U.S. own excess foreign currency of the country and,		

if so, what arrangement have been made for its release?	U.S. owned excess Pakistani rupees have been fully programmed in support of other projects.
11. FAA Sec. 601(e). Will the project utilize competitive selection procedures for the awarding of contracts, except where applicable procurement rules allow otherwise?	Yes
12. Continuing Resolution Sec. 522. 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 becomes operative, and is such assistance likely to cause substantial injury to U.S. producers of the same, similar or competing commodity?	N.A.
13. FA Appropriation Sec.525. Will the funds for this project be used to lobby for abortion?	No

B. FUNDING CRITERIA FOR PROJECT

1. Development Assistance Project Criteria	This is an ESF-financed project.
a. FAA Sec. 102(b), 111, 113, 281(a). 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, 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; (b) help develop cooperatives,	N.A.

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; (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? — N.A.

b. FAA Sec. 103, 103A, 104, 105, 106, 107. Is assistance being made available: (include only applicable paragraph which corresponds to source of funds used. If more than one fund source is used for project, include relevant paragraph for each fund source.) — N.A.

(1) [103] for agriculture, rural development or nutrition; if so (a) extent to which activity is specifically designed to increase productivity and income of rural poor; 103A if for agricultural research, full account shall be taken of the needs of small farmers, and extensive use of field testing to adapt basic research to local conditions shall be made; (b) extent to which assistance is used in coordination with programs carried out under Sec. 104 to help improve nutrition of the people of developing countries — N.A.

Best Available Document

through encouragement 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 of programs explicitly addressing the problem of malnutrition of poor and vulnerable people; and (c) 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.	N.A.
(2) [104] for population planning under sec. 104(b) or health under sec. 104(c); if so, (i) 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 research.	N.A.

(4) [105] for education, public administration, or human resources development; if so, extent to which activity strengthens nonformal education, makes formal education more relevant, especially for rural families and urban poor, or strengthens management capability of institutions enabling the poor to participate in development; and (ii) extent to which assistance provides advanced education and training of people in developing countries in such disciplines as are required for planning and implementation of public and private development activities.	N.A.
(5) [106; ISDCA of 1980, Sec. 304] for energy, private voluntary organizations, and selected development activities; if so, extent to which activity is: (i) (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; (b) facilitative of geological and geophysical survey work to locate potential oil, natural gas, and coal reserves and to encourage exploration for potential oil, natural gas, and coal reserves; and (c) a cooperative program in energy production and conservation through research and development and use of small scale, decentralized,	N.A.
	N.A.

renewable energy sources for rural areas;

(ii) technical cooperation and development, especially with U.S. private and voluntary or regional and international development, organizations; N.A.

(iii) research into, and evaluation of, economic development process and techniques;

(iv) reconstruction after natural or manmade disaster;

(v) for special development problems, and to enable proper utilization of earlier U.S. infrastructure, etc., assistance; N.A.

(vi) for programs of urban development, especially small laborintensive enterprises, marketing systems, and financial or other institutions to help urban poor participate in economic and social development.

c. [107] is appropriate effort placed on use of appropriate technology? (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.

d. FAA Sec. 110(a). Will the recipient country provide at least 25% of the costs of the program, project, or activity with respect to which N.A.

the assistance is to be furnished (or has the latter cost-sharing requirement been waived for a "relatively least developed" country)?	N.A.
e. FAA Sec. 110(b). Will grant capital assistance be disbursed for project over more than 3 years? If so, has justification satisfactory to Congress been made, and efforts for other financing, or is the recipient country "relatively least developed"?	N.A.
f. FAA Sec. 281(b). Describe extent to which program 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 civil education and training in skills required for effective participation in governmental processes essential to self-government.	N.A.
g. FAA Sec. 122(b). 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?	N.A.
2. Development Assistance Project Criteria (Loans Only)	
a. FAA Sec. 122(b). Information and conclusion on capacity of the country to	N.A.

repay the loan, at a reasonable rate of interest.

b. 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% of the enterprise's annual production during the life of the loan?

N.A.

3. Project Criteria Solely for Economic Support Fund

a. FAA Sec. 531(a). Will this assistance promote economic or political stability? To the extent possible, does it reflect the policy directions of FAA Section 102?

Yes. This project has as its prime goal to carry out the GOP's food security objectives which will clearly promote both economic and political stability. The project also reflects the policy directions of FAA Section 102.

b. FAA Sec. 531(c). Will assistance under this chapter be used for military, or paramilitary activities?

No.

ANNEX C.1

UNITED STATES AGENCY FOR INTERNATIONAL DEVELOPMENT

MISSION TO PAKISTAN

Cable : USAIDPAK

HEADQUARTERS OFFICE
ISLAMABAD

Office of the Director

FOOD SECURITY MANAGEMENT PROJECT (391-0491)
FAA SECTION 611 (e) CERTIFICATION

I, Jimmie M. Stone, the principal officer of the Agency for International Development in the Islamic Republic of Pakistan, having taking into account, among other things, the maintenance and utilization of projects in the Islamic Republic of Pakistan previously financed or assisted by the United States, do hereby certify, pursuant to Section 611 (e) of the Foreign Assistance Act of 1961, as amended, that, in my judgement, the Islamic Republic of Pakistan has both the financial capability and the human resources capability to effectively implement, utilize, and maintain the proposed Food Security Management Project 391-0491.

This judgement is based upon the project analyses as detailed in the Food Security Management Project Paper and is subject to the conditions imposed therein.

Jimmie M. Stone
Acting Director
USAID/Pakistan

2/27/84
Date

UNITED STATES AGENCY FOR INTERNATIONAL DEVELOPMENT
MISSION TO PAKISTAN

Cable : USAIDPAK

HEADQUARTERS OFFICE
ISLAMABAD

Office of the Director

FOOD SECURITY MANAGEMENT PROJECT (391-0491)

FAA SECTION 612 (b) CERTIFICATION

A major purpose of the $1.625 billion economic assistance program negotiated between the Governments of the United States of America and Pakistan, acknowledged by both governments and a primary reason for both governments having decided to develop an economic assistance package, is to provide balance of payments assistance to Pakistan.

I have carefully reviewed the advisability of disbursing United States dollars in lieu of United States-owned excess foreign currency to pay for local costs of projects being implemented in Pakistan. In light of the United States Government's objectives concerning the program, I have determined that it would be prejudicial to U.S. interests and goals to pay for all local currency costs with United States-owned rupees. Such a procedure would prevent the U.S. from providing the maximum amount of balance of payments support under the economic assistance package, and would consequently undercut one of the basic objectives of the program. The objective of providing balance of payments assistance to Pakistan can best be achieved by disbursing United States dollars to pay for local costs of the program. Section 612 (b) of the Foreign Assistance Act of 1961, as amended, authorizes the administrative official approving the voucher to determine that local costs will be funded with direct payment of dollars for the program. Pursuant to this provision, Handbook 19 requires that the Mission Director (or his designee) make a determination as to the reason in any instance where United States dollars are used (disbursed) when United States-owned foreign currency is available. Where dollars are used for local cost financing, USAID/Pakistan will, therefore, make disbursements to the Government of Pakistan in U.S. currency.

FAA SECTION 612 (b) CERTIFICATION (Continued)

In view of the above rationale, I, Jimmie M. Stone, Principal officer of the Agency for International Development in Pakistan, pursuant to Section 612 (b) of the Foreign Assistance Act of 1961, as amended, do hereby certify the need to disburse United States dollars to cover local currency costs in lieu of using United States-owned excess rupees under the Food Security Management Project.

Jimmie M. Stone
Acting Director
USAID/Pakistan

2/27/84
Date

Narrative Summary	Objectiveiv Verifiable Indicators	Means of Verification	Important Assumptions
Inputs:	**Implementation Target:** (Type and Quantity)		**Assumptions for Providing Inputs:**
1. AID			
- Short & Long-term technical assistance - Short & Long-term academic & non-academic training in U.S. and Pakistan - Vehicles and other equipment - Civil works for godown rehabilitation (MFAR) - Local project staff - Seminars & conferences - Study of O&M recurrent costs and management audit of all public sector godowns - Contractor costs for economic studies and surveys and PHM research studies: survey of existing godowns plus design & implementation plan for rehabilitation and additional personnel costs for phasing in ASF - Budget support for PU/MOFA	- See financial analysis, implementation schedule and commodity, TA and training plans in the project paper	- AID and GOP project records and financial documents - Project evaluations	- AID & GOP funding levels proposed are approved and disbursements are made on a timely basis - Appropriate overseas training programs can be identified - Construction is undertaken according to agreed upon standards and practices and is certified for 80 percent reimbursement by AID - GOP meets the conditions precedent - Appropriate consultants can be recruited to provide required technical assistance
2. GOP			
- Staff salaries and operating expenses - Operating and Maintenance costs for all rehabilitated facilities - 20% of costs of rehabilitation			

VEHICLE WAIVER REQUEST

ACTION MEMORANDUM FOR THE ASSISTANT ADMINISTRATOR, BUREAU FOR ASIA

FROM: A/ASIA/PD, G.R. Van Raalte

SUBJECT: Source/Origin/Nationality Vehicle Procurement Waiver for Food Security Management (391-0491)

I. Problem: You are being requested to waive the requirements of Section 636(i) of the Foreign Assistance Act and to waive source/origin/nationality requirements from AID Geographic Code 000 (U.S. only) to AID Geographic Code 935 (Special Free World).

II. Background:

A. Cooperating Country: Pakistan

B. Authorizing Document: Project Authorization

C. Project: Food Security Management Project 391-0491

D. Geographic Code of Project: 000 and Pakistan

E. Importer of Commodity: USAID/Pakistan on behalf of the Ministry of Food, Agriculture and Cooperatives, Government of Pakistan

F. Description of Commodity: (1) Thirteen (13) land cruiser station wagons, 6-cylinder, diesel, right-hand drive, 4-wheel drive, 3,431 CC piston displacement, air-conditioning at estimated cost of $10,500 each - $136,500.

(2) Two (2) vans, 6-cylinder, diesel, right-hand drive, 12-13 passenger capacity at estimated cost of $8,000 each - $16,000.

(3) Two (2) cargo vans, 6-cylinder, diesel, right-hand drive, 2 ton carrying capacity at estimated cost of $1[illegible]000 each - $28,000.

(4) One Hundred Forty (140) Motorbikes, dual purpose road and trail, 100-250 CC twin cylinder with luggage carriers at estimated cost of $1,700 each - $238,000.

TOTAL - $418,500

G. Nature of funding: ESF Grant

H. Procurement Source: Japan

III. Discussion and Justification

The primary purpose of the Food Security Management Project is to improve the analytical and policy formulation framework, the managerial capabilities, and the physical capacity of the GOP to manage the national food security system effectively and efficiently. The project consists of three closely related components designed to: (A) establish, institutionalize and strengthen the capacity of an Economic Analysis Network, composed of public and private institutions in Pakistan that produce or utilize agricultural economic analysis, to conduct relevant, high quality, and timely economic and policy research; (B) assist the GOP to implement an improved system for the collection of basic agricultural data by the Provincial Departments of Food and Agriculture, based on the area sampling frame methodology; and, (C) improve the management of the provincial public sector grain storage network by introducing improved management systems, rehabilitating grain storage facilities, and strengthening the system for transfer of technologies for storage design, grain quality management, and pest control.

Under this project, A.I.D. will finance the services of seven (7) U.S. advisors and at least two (2) Pakistani supervisory engineers as well as approximately 500 person-months of both U.S. and Pakistani short-term technical assistance over the five year life of the project.

Project activities require extensive field visits by A.I.D.-financed consultants and GOP officials in carrying out their assignment which will include in-country training programs, on-the-job training, civil works inspections, and technical assistance to all four provincial Departments of Food and Agriculture to implement the Area Sampling Frame Methodology under the Agricultural Data collection component and the grain storage management improvement and rehabilitation programs under the Post-Harvest Management Component. The project also involves extensive in-country, on-the-job training in storage management procedures and the improved and timely collection of agricultural data at the provincial and district level in all four provinces of Pakistan. Vehicles are required for these purposes.

Required vehicles must have right-hand drive, a critically important safety factor in Pakistan where traffic moves on the left hand side of the road. It is expected that project vehicles will travel long distances on frequently used routes where right-hand drive is essential in passing situations to ensure maximum visibility and safety. Since field visits will at times take place in remote areas where there is an absence of paved roads, and access is difficult, four-wheel drive is similarly deemed essential. Air-conditioning is also required because of the extreme temperatures (exceeding 100 degrees Farenheit) which are experienced several months of the year in project areas. Consistent with A.I.D. Handbook 1, Chapter 4C2A.5 (B), the USAID/Pakistan Mission Director has examined the need for

austerity and economy in project accomplishment has determined that air-conditioning is justified. Finally, diesel engines are required for all the vehicles since they can be easily serviced owing to their widespread use in Pakistan. Diesel fuel is readily available and affords greater economy as well.

A. Land Cruiser Station Wagons

Station wagons will be used by the U.S. advisors and their Pakistani counterparts for extensive travel in all four provinces of Pakistan. These vehicles are large enough to seat at least 6 passengers comfortably and up to 9 passengers in total for long distance driving and have sufficient cargo space to transport luggage and field equipment as necessary. The U.S. does not manufacture a vehicle that meets the required specifications. The American Motors Corporation (AMC) makes a station wagon (CJ-8) that was considered as an option, but the CJ-8 is not a comparable vehicle. The CJ-8 is primarily a utility vehicle which has a maximum seating capacity for only 5 passengers and does not, in the Mission's judgement, provide passenger comfort for long distance driving. Appropriate vehicles which could be serviced in Pakistan are not available from Code 941 countries.

B. Passenger Vans

Passenger vans with capacity to seat 12-15 individuals and mobile training cargo vans with two ton carrying capacity will be required to transport host country personnel who will participate in the extensive program of on-the-job training planned specifically under the Post-Harvest Management component of this project. As indicated in Table 4 of the Project Paper, intensive short courses lasting approximately 3 days each for up to 25 participants in each course are planned for operational personnel at storage centers and procurement centers in grain inspection and preservation and grain procurement. Each course will be given approximately 32 times during the life of the project which translates into a total of over 1600 personnel trained. There are no appropriate U.S. vehicles manufactured with right hand drive as required, nor are appropriate vehicles which could be serviced in Pakistan available from Code 941 countries.

C. Motorbikes

Motorbikes will be used by field enumerators in supporting the Agricultural Data Collection component to facilitate the timely and efficient implementation of the area sampling frame methodology. These motorbikes should be dual purpose road and trail vehicles. Engine size will be between 100 and 250 CC, twin cylinder, with

luggage carrying capacity for small equipment and supplies. The U.S. does not manufacture motorbikes of this type, nor are there appropriate motorbikes which can be serviced in Pakistan.

IV. Authority: Section 636(i) of the Foreign Assistance Act of 1961 requires AID to procure U.S.-manufactured vehicles but also provides that the requirements may be waived under special circumstances. AID Handbook 1, Supplement B, Chapter 4C2d(1)(a) describes some of the special circumstances which may support a waiver, including the

"inability of U.S. manufacturers to provide a particular type of needed vehicle, e.g., ... right-hand drive vehicles ... etc." Handbook 1, Supplement B, Chapter 4Cd(3) and Delegation of Authority No. 40 authorize Assistance Administrators to waive source/origin/nationality requirements in this instance.

V. Certification: In approving this waiver request, you will be certifying that exclusion of procurement from Free World Countries other than the Cooperating Country and Geographic Code 941 countries would seriously impede attainment of U.S. foreign policy objectives and the objectives of the Foreign Assistance Program.

VI. Recommendation: That you approve a waiver of Section 636(i) of the FAA and a source/origin/nationality waiver to permit procurement of the requirei vehicles from AID Geographic Code 935 (Special Free World).

Approved: _____

Disapproved _____

Date: _____

UNITED STATES AGENCY FOR INTERNATIONAL DEVELOPMENT
MISSION TO PAKISTAN

Cable : USAIDPAK

HEADQUARTERS OFFICE
ISLAMABAD

THE DIRECTOR

USAID/PAKISTAN MISSION DIRECTOR'S WAIVER FOR A.I.D. PAYMENT OF INTERNATIONAL PARTICIPANT TRAVEL COSTS

A.I.D. Handbook 10, Chapter 15B1, provides that the cost of international travel, including incidental costs en route as well as the cost of travel between the participant's city and the points of departure and return in the participant's home country, shall be paid by the host government or other sponsor unless, in the case of Mission-funded programs, the Mission Director has justified and authorized full or partial waivers and has so notified S&T/IT.

Training and institution-building are important components of the $1.625 billion economic assistance program negotiated between the Governments of the U.S. and Pakistan. USAID/Pakistan's experience, however, has been that the Government of Pakistan (GOP), due to serious foreign exchange and budgetary constraints, has been historically unable to fund international travel costs for short-term training programs. The consequence has been that Pakistani participants have, on numerous occasions, been denied worthwhile and much needed training, inhibiting the achievement of project targets.

I have carefully reviewed the advisability of requiring full GOP funding for travel costs for participant training of one year or less and the alternative of funding such travel with grant and loan funds provided through USAID/Pakistan to the GOP. Recognizing the objectives of many of our projects and the fact that project success will be enhanced by encouraging opportunities for short-term training, I have determined that it would be prejudicial to U.S. interests to require that the GOP pay the entire international participant travel costs for training programs of one year or less.

Therefore, on all Mission-funded training programs up to and including one year, USAID/Pakistan shall be responsible for the entire cost of the round-trip economy class air ticket and other necessary incidental costs en route. Where a PIO/P has been originally written for a program of one year or less, but, after the participant has initiated his or her program, the program is extended so that it exceeds one year in total, USAID/Pakistan shall also fund the round-trip ticket. The justification for funding programs that are extended is to minimize administrative problems which are otherwise likely to occur.

On the basis of the above justification and pursuant to Handbook 10, Chapter 15B1a, I, Jimmie M. Stone, principal officer of the Agency for International Development in Pakistan, do hereby waive the requirement that the host government fully fund international travel for training courses of one year or less and authorize payment with USAID/Pakistan loan and grant funds for travel costs as specified above.

Jimmie M. Stone
Acting Director
USAID/Pakistan

2/27/84
Date

ANNEX H

DRAFT PROJECT AUTHORIZATION

Name of Country: Pakistan

Name of Project: Food Security Management
Number of Project: 391-0491

1. Pursuant to Section 531 of the Foreign Assistance Act of 1961, as amended, I hereby authorize the Food Security Management Project for the Islamic Republic of Pakistan involving planned obligations not to exceed U.S. Dollars Thirty-Five Million (U.S. $35,000,000) in grant funds over a five (5) year period from the date of authorization, subject to the availability of funds in accordance with the A.I.D./OYB allotment process, to help in financing foreign exchange and local currency costs for the Project.

2. The project will assist the Government of Pakistan (GOP) to achieve its food security objectives in a manner consistent with the rational and efficient use of national resources, the overall economic development of the country, and an improved standard of living for farm families and the population at large. The purpose of the project is to improve the analytical and policy formulation framework, the managerial capabilities, and the physical capacity of the GOP to manage the national food security system effectively and efficiently. The project will: (a) assist the GOP to establish, institutionalize and strengthen the capacity of an Economic Analysis Network (EAN), composed of public and private institutions in Pakistan that produce or utilize agricultural economic analysis, to conduct relevant and timely economic and policy research; (b) finance a special studies program of policy analysis on selected topics; (c) assist the GOP to implement an improved system for the collection of basic agricultural data by the provincial Departments of Agriculture, based on the area sampling frame methodology; and (d) improve the management of the provincial public sector grain storage network by introducing improved management systems, rehabilitating grain storage facilities, and strengthening the system for transfer of technologies for storage design, grain quality maintenance, and pest control.

3. The Project Agreement(s) which may be negotiated and executed by the officers to whom such authority is delegated in accordance with A.I.D. regulations and Delegations of Authority shall be subject to the following essential terms and covenants and major conditions as A.I.D. may deem appropriate.

a. Source and Origin of Goods and Services

Goods and services financed by A.I.D. under this Project shall have their source and origin in the Cooperating Country or in the United States except as A.I.D. may otherwise agree in writing. Ocean shipping financed by A.I.D. under the Project shall, except as A.I.D. may otherwise agree in writing, be financed only on flag vessels of the United States and the Cooperating Country.

b. Condition Precedent to Disbursement for Activities under the Agricultural Data Collection Component

Except as A.I.D. may otherwise agree in writing, prior to any disbursement of funds under this Project for activities under the Agricultural Data Collection Component of this Project, or to the issuance by A.I.D. of documentation pursuant to which such disbursement will be made, the Grantee, through its Survey of Pakistan, shall furnish to A.I.D., in form and substance satisfactory to A.I.D., written assurance that use of aerial photos and topographical maps required for implementation of the Area Sampling Frame Methodology will be made available to project-financed consultants and/or A.I.D. designated and Grantee approved GOP staff.

c. Conditions Precedent to Disbursement for Research Studies under the Economic and Policy Analysis Component to be Undertaken by Exclusively Local Research Entities

Except as A.I.D. may otherwise agree in writing, prior to any disbursement of funds under this Project for research studies to be undertaken by exclusively local, non-expatriate research persons or entities under the Economic and Policy Analysis Component of this Project, or to the issuance by A.I.D. of documentation pursuant to which such disbursement will be made, the Grantee shall furnish, in form and substance satisfactory to A.I.D.:

i. Documentation that the Grantee has established a Steering Committee and an Economic Analysis Network Group; and

ii. A Work Plan setting forth, in detail, the proposed implementation of the local research program. Requirements for this Work Plan shall be established by A.I.D. in Project Implementation Letters.

d. Condition Precedent to Disbursement for Rehabilitation of Grain Storage Facilities

Except as A.I.D. may otherwise agree in writing, prior to any disbursement of funds under this Project for any engineering or construction services related to the rehabilitation of grain storage facilities, or to the issuance by A.I.D. of documentation pursuant to which such disbursement will be made, the Grantee shall furnish to A.I.D., in form and substance satisfactory to A.I.D., a long-term plan for meeting the operation and maintenance (O&M) recurrent costs for all existing and planned public sector grain storage facilities, including policy measures to be implemented and performance targets to be achieved over the life of this Project, which takes into account the findings and recommendations of the comprehensive study, to be financed by A.I.D., to, amongst other things, analyze O&M recurrent cost and management issues in the sector and identify specific policy options and recommendations to address such problems in the sector.

e. Conditions Precedent to Disbursement for Rehabilitation of Grain Storage Facilities in a Specific Province

Except as A.I.D. may otherwise agree in writing, prior to any disbursement of funds under this Project for any construction services related to the rehabilitation of grain storage facilities in a specific Province, or to the issuance by A.I.D. of documentation pursuant to which such disbursement will be made, the Grantee shall furnish to A.I.D., in form and substance satisfactory to A.I.D.:

i. Written confirmation of the Grantee's acceptance and agreement with the results and findings of the study, to be financed by A.I.D., to develop a rehabilitation plan of existing grain storage facilities over five years old for that Province including a definition of rehabilitation needs and priorities and estimated costs; and

ii. Documentation that the Department of Agriculture for that Province where the rehabilitation work is to be carried out has entered into an agreement with the Department of Communcations and Works of that Province for rehabilitation of existing grain storage facilities under this Project.

f. Conditions Precedent to Disbursement for Grain Storage Research Studies Under the Post-Harvest Management Component to be Undertaken by Exclusively Local Research Entities

Except as A.I.D. may otherwise agree in writing, prior to any disbursement of funds under this Project for grain storage research studies by exclusively local, non-expatriate research persons or entities to be implemented under the supervision of the Pakistan Agricultural Research Council (PARC) through the Post-Harvest Management Component of this Project, or to the issuance by A.I.D. of documentation pursuant to which such disbursement will be made, the Grantee shall furnish, in form and substance satisfactory to A.I.D.:

i. Documentation that the Grantee has established a Coordination Unit for Post-Harvest Management Research and Technology Transfer;

ii. Documentation that the Grantee, through its PARC has appointed a Program Coordinator for the Coordination Unit in (i) above; and

iii. A Work Plan setting forth, in detail, the proposed implementation of the local research program. Requirements for this Work Plan shall be established by A.I.D. in Project Implementation Letters.

g. Covenants as to the Operation and Maintenance of Rehabilitated Storage Facilities

The Grantee agrees to make all reasonable efforts to:

i. obtain necessary GOP budgetary allocations for maintenance of all grain storage facilities rehabilitated, in part or in whole, under this Project; and

ii. maintain in good operational condition all grain storage facilities rehabilitated, in part or in whole, under this Project.

h. Covenant as to Operation and Maintenance Recurrent Costs Reporting

The Grantee agrees to furnish to A.I.D., no less than every twelve (12) months from the date of the signing of this Project Agreement, a report, in form and substance satisfactory to A.I.D., setting forth how operation and maintenance (O&M) recurrent costs are being met by the Grantee for all existing and newly built grain storage facilities.

i. Covenant as to Staffing of the Planning Unit/Ministry of Food and Agriculture

The Grantee agrees to make all reasonable efforts to assure that adequate non-professional staff are provided for the Planning Unit/Ministry of Food and Agriculture throughout the life of the Project.

j. Covenant as to the Establishment of Permanent Posts in the Ministry of Food and Agriculture

For each additional administrative and professional staff member hired with project funds for the Planning Unit/Ministry of Food and Agriculture, the Grantee agrees to make all reasonable efforts to establish permanent posts and to reflect these in the regular recurrent budget of the Ministry of Food and Agriculture beginning in the third year of that individual's employment with the project.

k. Covenant as to Economic and Policy Analysis Studies

The Grantee agrees to make all reasonable efforts to secure adequate GOP budgetary allocations to continue economic and policy analysis studies by local institutions after the life of the Project.

l. Covenant as to Training

Except as the Parties may otherwise agree in writing, the Grantee, acting through its Ministry of Food and Agriculture, shall make every reasonable effort to require that each person trained under this Project works in activities related to agricultural data collection, post-harvest management and/or agricultural economic and policy analysis in Pakistan for not less than three times the length of time of his or her training program provided, however, that in no event shall such an individual be allowed to work in agricultural data collection, post-harvest management, and/or agricultural economic and policy analysis activities for less than one year, nor be required to work in agricultural data collection, post-harvest management, and/or agricultural economic and policy analysis activities for more than five years from the date of that individual's completion of training.

4. The following waivers of A.I.D. regulations are hereby approved:

a. Based on the justification set forth in Annex F of the Project Paper, I hereby approve a waiver of the requirements of

Section 636(i) of the FAA and approve a waiver of source, origin, and nationality from Code 000 (U.S. only) to Code 935 (Free World) to permit the procurement of twenty (20) motorbikes, two (2) 15-passenger vans, and thirteen (13) 9-passenger carryalls and spare parts.

b. Based on the justification set forth in the attached Action Memorandum, I hereby approve a justification for non-competitive procurement on the grounds that ". . . procurement from any other source would impair foreign assistance objectives, and would be inconsistent with fulfillment of the foreign assistance program," to permit the USAID Mission to Pakistan to contract with the International Food Policy Research Institute (IFPRI) to undertake the Special Studies Program as described under the Economic and Policy Analysis Component of this Project Paper.

Signature _____

M. Peter McPherson
Administrator

Date _____

ANNEX I

DRAFT PROJECT DESCRIPTION FOR INCLUSION IN PROJECT AGREEMENT

A. Project Goal and Purpose

This project will assist the Government of Pakistan (GOP) to achieve its food security objectives in a manner consistent with the rational and efficient use of national resources, the overall economic development of the country, and an improved standard of living for farm families and the population at large. The purpose of the project is to improve the analytical and policy formulation framework, the managerial capabilities, and the physical capacity of the GOP to manage the national food security system effectively and efficiently.

B. Project Components

The project consists of three components: (1) Economic and Policy Analysis; (2) Agricultural Data Collection; and (3) Post-Harvest Management.

1. Economic and Policy Analysis (EPA)

This component of the project will assist the GOP to establish, institutionalize, and strengthen the capacity of an Economic Analysis Network (EAN), composed of public and private institutions in Pakistan that produce or utilize agricultural economic analyses, to conduct relevant and timely economic and policy research. In addition, the project will finance a special studies program of policy analysis on selected topics.

2. Agricultural Data Collection (ADC)

This component will assist the GOP to implement an improved system for the collection of basic agricultural data by the provincial Departments of Agriculture in cooperation with the Federal Ministry of Food, Agriculture & Cooperatives. This system, based on the area sampling frame methodology, will provide more reliable data than now available on a more timely basis and at a reduced cost. As the basic system is established, a broader range of data will be made available to the federal and provincial governments through expanded data collection activities carried out under this component.

3. Post-Harvest Management (PHM)

This component will improve the management of the provincial public sector grain storage network by: (1) introducing

improved management systems; (2) rehabilitating up to approximately 750,000 metric tons of warehouse capacity, or 24 percent of total public sector storage; and (3) strengthening the system for transfer of technologies for storage design, grain quality maintenance, and pest control.

C. Project Outputs

The project is expected to produce the following outputs which, together, should achieve the project purpose.

1. EPA

a. A role and mandate agreed upon by all government institutions for the economic analysis network.

b. An economic anlaysis network group that is well organized and fully staffed with qualified personnel.

c. An ongoing economic and policy analysis program based on an annual research agenda developed by a high level GOP steering committee.

d. Completion of at least two major specific policy analysis studies.

e. Approximately 239 persons trained in-country or abroad in related fields of economics.

2. DCA

a. Establishment of a national area sampling frame based on provincial and district boundaries.

b. Approximately 408 persons trained in-country or abroad in statistical methodology.

c. Publication of production and area statistics on a regular and scheduled basis.

d. Reduction in the time and cost of data collection and improved accuracy of the data.

e. Improved GOP agricultural and rural development planning resulting from more accurate and timely agricultural statistics.

3. PHM

a. Rehabilitation of up to 750,000 MT of grain storage facilities.

b. Approximately 1,888 persons trained in-country and abroad in post-harvest management technologies.

c. Improved maintenance and management of grain storage facilities.

d. Reduced storage and handling losses.

e. Improved pest control and storage design research.

f. Improved in-service training programs in post-harvest management techniques.

g. A long-range plan for meeting the O&M recurrent costs of all existing and newly built public sector grain storage facilities.

D. Implementation Plan

1. A.I.D. Responsibilities

A.I.D. will be responsible for:

a. contracting with all expatriate advisors and the local architectural and engineering firm;

b. purchase of all vehicles and commodities procured outside of Pakistan;

c. advance approval of design of civil works, inspections of civil works and certification for payment of all civil works financed under this project;

d. arranging for long and short-term training in the United States for selected participants;

e. approval of the design and results of surveys, studies and analyses contracted for and financed under this project and certification for final payment;

f. providing sufficient staff to participate in the scheduled project evaluations;

g. arranging for and financing additional administrative and professional staff for the Planning Unit, Ministry of Food, Agriculture and Cooperatives for the first two years of each such person's employment under the project; and

h. liaising with appropriate government agencies in the implementation of this project.

2. Federal and Provincial Responsibilities

Project activities will be implemented by four major government entities including: (a) the Planning Unit and the Food Division of the Federal Ministry of Food, Agriculture & Cooperatives (MOFA); (b) the Crop Reporting Services within the Provincial Departments of Food and Agriculture; (c) the Food Departments within the Provincial Departments of Food and Agriculture; and (d) the Provincial Departments of Communications and Works. Other nation-building departments of the provincial governments may also be involved in implementing this project.

The MOFA Planning Unit will be the major federal implementing agency for the Economic and Policy Analysis and Agricultural Data Collection components. Beginning in the third year of each person's employment with the project, the MOFA will be responsible for establishing permanent posts for the additional professional and administrative support staff hired and financed by A.I.D. for the Planning Unit to implement these two components. Regarding Post-Harvest Management and Agricultural Data Collection, the MOFA Food Division and the Planning Unit, respectively, will have key coordinating roles for implementing these components through the Provincial Departments of Communications and Works and Food and Agriculture. The MOFA Planning Unit will also be the major coordinating agency for the Economic and Policy Analysis component with national and provincial economic research agencies and institutions. Overall, responsibilities of the MOFA will include:

a. ensuring that counterparts are in place for the technical advisors;

b. selecting qualified participants for training;

c. arranging for all travel clearances for USAID staff and project-financed advisors;

d. for the Provincial Departments of Food and Agriculture and Communications & Works, ensuring that construction activities are undertaken in a timely manner;

e. ensuring that all grain storage facilities rehabilitated under this project are properly maintained;

f. supporting the Economic Analysis Network including organization of the Economic Analysis Network Group and Steering Committee;

g. ensuring that the economic research and analysis activities are undertaken in a timely manner;

h. participating in scheduled project evaluations; and

i. ensuring that PC-1s are approved and other necessary GOP clearances are obtained in a timely manner.

ILLUSTRATIVE

SUMMARY OF PROJECT COSTS BY EXPENSE CATEGORY AND SOURCE OF FUNDING
(in $000s)

Expense Category	FY 1984		Life of Project Funding b/	
	A.I.D. Grant	GOP a/	A.I.D. Grant	GOP a/
1. Technical Assistance	2300	-	8732	-
2. Training	500	-	3418	110
3. Commodities	1200	10	1678	10
4. Storage Rehabilitation	-	-	7546	1888
5. Economic and Policy Studies	-	-	5643	-
6. Evaluation	-	-	288	-
7. Other Costs	1000	9	5901	2240
SUB-TOTAL	5000	19	33206	4248
8. Contingency	-	-	1794	212
TOTAL	5000	19	35000	4460

a/ Expressed in dollar equivalents at the exchange rate of U.S. $1.00 = Rs 13.50

b/ Subject to the availability of funds to A.I.D. for this purpose and to the mutual agreement of both parties to proceed at the time of each subsequent increment.

ANNEX J

ILLUSTRATIVE LIST OF EQUIPMENT FOR THE FSM PROJECT

EQUIPMENT	QUANTITY (#)	SPECIFICATIONS
A. VEHICLES		
	13	RHD; 4 Wheel Drive Carryalls; 6 Cylinder Diesel Engine; 8-9 passenger capacity; equipped with PS/PB and airconditioner (ADC:6; EPA:2; PHM:4; FCU:1)
	2	RHD Vans; 6 Cylinder Diesel Engine; 15 passenger capacity (PHM)
	2	RHD Cargo Vans for Mobile Training Operations (PHM)
	20	Jeeps; 4 Cylinder Diesel Engine; Metal Tops (ADC)
	140	Dual purpose road and trail motobikes; high exhaust system; 250 CC; twin Cylinder luggage carriers installed (ADC)
B. COMPUTERS		
Level-2 System (ADC)		
Hardware	2	CPU-32 BIT main memory...256K bytes (minimum) Terminals...80 Char/Line/Screen Mass Storage...80 megabytes hard disk technology
Removeable Storage		1-9 track 800/1600 BPI tape drive 1-8 inch IBM format compatable floppy disk drive
Printer		1600 LPM impact line printer
Software		Basic; Fortran; Integrated Wordprocessing, Spread sheet and database management software
Level-1 System (ADC)		
Hardware	7	CPU-16 BIT Word Central memory...128K (minimum) Terminals...CRT type 80 Char/Line; 24 Line/Screen Mass Storage...20+ megabytes hard disk technology
Removeable Storage		2-8 inch IBM compatable floppy disk drive
Printer		200 CPS rated dot matrix W/NLQ capacity
Software		Basic; Fortran; Statistical routines; Integrated Wordprocessing, Spreadsheet and database management software

Portable Micros:EFA	7	Main memory...128K RAM minimum Operating System...Control program for microprocessor External Storage...two self contained floppy disks 10 Megabyte winchester hard disk
Printer		150+ CPS; dot matrix; Graphic Mode Operations Near Letter Quality Operations
Software		Basic: Integrated Spreadsheet, Statistical Analysis, Graphic, and Word Processing Package
Supplies		Paper...40 boxes:8"*11" and 14"*11" Floppy Diskettes Magnetic Tapes...2400'; 9 track
Other		8 Uninterruptable power supplies...1.2 KVA 8 Airconditioners and Filters...10,000 BTU Voltage Transformers; Search Control: Data Saver (for each computer)

C.CALCULATORS

Type-1:ADC	10	Desk size programmable calculators 12 digit; printing capacity
Type-2:ADC	20	Desk size programmable calculators 12 digit; LCD display; Statistical Operations
Type-3:ADC	160	Hand-held; Battery Operated; 8 digit LCD display 2 Memory banks...simple multiplication & division
D.TYPEWRITERS:ADC	10	Electric...120 Character wide carriage

E.OTHER PROJECT EQUIPMENT

Ag Data Collection	ASF Equipment
Post Harvest Management	Construction material (e.g.epoxy resins) for Storage Rehabilitation Equipment for Mobile Training Operations Laboratory Equipment Fumigation Equipment Other Research Equipment
F.OTHER MISCELLANEOUS SUPPLIES	Household/Office furniture and equipment/supplies

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ANNEX K

LIST OF CONSULTANT REPORTS

ON FILE

AT USAID/PAKISTAN

USDA/SRS

Agricultural Data Collection and Analysis: Trip Report on Pakistan, November 10-19, 1982

USDA/SRS

Consultant Team Report on the Data Collection and Analysis Component of the Food Security Management Project, Pakistan, 1983

Food and Feed Grain Institute, Kansas State University

Preliminary Project Design Development: Post-Harvest Management Component of Food Security Management Project: A Working Paper, 1983

Food and Feed Grain Institute, Kansas State University

Consultant Team Report on the Post-Harvest Management Component of the Food Security Management Project, July, 1983

ANNEX L

THE ECONOMIC ANALYSIS OF THE POST-HARVEST MANAGEMENT COMPONENT OF THE FOOD SECURITY MANAGEMENT PROJECT

1. Quantitative Analysis of the PHM Component

The derivation of financial and economic costs and benefits for the PHM component is examined in this annex. The results of this annex confirm that the rehabilitation of 735,300 MT of grain storage facilities and the improved management of existing stockpiles will be highly beneficial to the nation as whole. The estimated economic rate of return (ERR) from an investment of $15.0 million (including GOP contribution and contingency), is estimated to be 29 percent. All benefits and costs have been estimated in constant 1983 prices. Cash flow after year 20 has not been taken into account.

2. Component Costs

In Table 1, the financial and economic costs for rehabilitation are presented. Economic cost and benefit values have been calculated at estimated border prices. Prices of internationnaly traded goods have been converted at the official exchange rate (US$1.00 = Rs 13.5). For calculating the economic value of non-traded goods, a standard conversion factor of 0.9 has been applied. Benefits were computed to include reduced grain losses due to rehabilitation and reduced grain losses and operational costs due to improved management.

The total cost of rehaibilitation is estimated at $6.25 million in 1983 dollars. Of the $6.25 million, $5.00 million will come from AID and the remainder from the Government of Pakistan. The life span of the project is spread over six years and the total economic cost of the rehaibilitation portion of the PHM component is estimated at $5.63 million.

The replacement cost of constructing new storage facilities is estimated at Rs 850/MT or $63/MT and has been derived from a small sample survey of provincial public sector storage facilities. Other costs associated with the PHM component include training, commodity imports and technical assistance. The nominal financial cost of these other activities is $3.79 million over the life of the project. After devaluing the other tradeable commodities by ten percent to account for the over-valued exchange rate, the total economic cost of these other PHM activities is $3.66 million (see Table 2).

Table 3 presents the stream of financial and economic costs of repairs and maintenance over a 20 year period. In the second year of the project, 138,000 thousand metric tons of storage capacity are expected to be rehabilitated. This would rise to 183.9 thousand tons in the third, fourth and fifth years and

Table 1

Financial and Economic Costs for Rehabilitation
($ '000)

FINANCIAL COST										
FISCAL YEAR						PROJECT YEAR				
FY	AID	GOP	Total	Construction	Engineering	PY	Construction	Engineering	Total	Economic Cost
1	2	3	4	5	6	7	8	9	10	11
84	0	0	0	0	0	1	0	0	0	0
85	313	78	391	352	39	2	1056	117	1173	1055
86	1250	313	1563	1407	156	3	1407	156	1563	1407
87	1250	313	1563	1407	156	4	1407	156	1563	1407
88	1250	313	1563	1407	156	5	1407	156	1563	1407
89	937	233	1170	1053	117	6	349	39	388	349
TOTAL	5000	1250	6250	5626	624		5626	624	6250	5625

Notes:
1. Column 2 as per PHM financial tables minus inflation.
2. Column 3 is 25% of AID financing in column 2, and 20% of the total in column 4.
3. Column 6 is 10 percent of column 5.
4. Financial costs in columns 8-10 have been adjusted to a project-year basis.
5. Column 11 is 90 % of column 10. The World bank uses a standard conversion factor (SCF) of 0.9 to account for trade restrictions which over-value the rupee. The factor is applied to non-tradeables.

Table 2

Other PHM Financial and Economic Costs
($ '000)

Financial Costs										Economic Costs		
	Total PHM		Rehabilitation		Rest of the PHM Costs			Adjusted for Project Year				
FY	FX	LC	FX	LC	FX	LC	PY	FX	LC	FX	LC	TOTAL
1	2	3	4	5	6	7	8	9	10	11	12	13
84	207	139	0	0	207	139	1	590	338	590	304	894
85	765	711	0	313	765	398	2	684	344	684	310	994
86	602	1539	0	1250	602	289	3	550	265	550	239	789
87	499	1492	0	1250	499	242	4	459	214	459	193	652
88	419	1436	0	1250	419	186	5	218	106	218	95	313
89	17	963	0	937	17	26	6	8	13	8	12	20
TOTAL	2509	6208	0	5000	2509	1280		2509	1280	2509	1153	

Notes:
1. Total PHM costs minus rehabilitation costs equals "rest of the PHM costs." All values are in 1983 dollars.
2. Column 12 is column 10 adjusted by the SCF.

TABLE 3

Costs of Repairs and Maintenance
($ '000)

PY	Rehabilitation: Annual Cost	Rehabilitation: Annual Tons	Rehabilitation: Cumulative Tons	Repair and Maintenance Cost: Financial	Repair and Maintenance Cost: Economic
1	2	3	4	5	6
1	0	0	0	0	0
2	1173	138000	138000	0	0
3	1563	183900	321900	104	94
4	1563	183900	505800	243	219
5	1563	183900	689700	382	344
6	388	45600	735300	521	469
7			735300	556	500
8			735300	556	500
9			735300	556	500
10			735300	556	500
11			735300	556	500
12			735300	556	500
13			735300	556	500
14			735300	556	500
15			735300	556	500
16			735300	556	500
17			735300	556	500
18			735300	556	500
19			735300	556	500
20			735300	556	500

Notes:

1. Column 2 (Table 1, col. 10) utilizes a rehabilitation cost of $8.5/MT.
2. Replacement costs for new construction is Rs 850/MT or $63/MT. This includes engineering costs but excludes development costs.
3. Column 5 assumes R&M costs will increase from existing 0.3 percent to 1.5 percent of the replacement cost. Hence, incremental R&M cost = ($63 x 0.0015) - ($63 x 0.003) = $0.756.
4. R&M on rehabilitated storage facilities begins in PY 3.
5. Column 6 is the standard conversion factor (SCF) applied to Column 5.

would decline to 45.6 thousand tons in the sixth and last year of the project. The cost of rehabilitaion is estmated at $8.50 per metric ton.

Annual costs of repairs and maintenance for rehabilitated facilities are projected from 0.3 percent to 1.5 percent of their replacement cost. The estimated increase in repair and maintenance costs is $.756 per metric ton of rehabilitated capacity. At the end of the six year project period, the additional financial cost of repairs and maintenance for the 735,300 metric tons of storage capacity rehabilitated would equal

$500,000 per year.

3. Component Benefits

There are four streams of benefits that will be derived from this project. These are the reduced losses due to rehabiliation, the reduced losses and reduced operation costs due to improved management, and the deferral of investment in new storage facility construction. Since a detailed survey of the existing storages and their condition is not available the latter benefit, while expected to be quite large, is ignored in this analysis.

In Table 4, a summary is presented of the sub-project benefits that will accrue as reduced losses and operating costs. It is assumed that no benefits will be generated during the first and second project year. Thereafter, storage losses in rehabilitated facilities will be reduced by 3.5 percent. The annual savings from reduced losses alone will rise to $3.1 million during project year seven, but then gradually declines to $2.2 million per annum by project year 12 as Pakistan increases its wheat exports and domestic wheat prices gradually approach world prices.

During the life of the project, it is anticipated that the Government of Pakistan wheat procurement will rise at a rate of four percent per annum. It is expected that grain losses from total GOP procurement will be gradually reduced over the project period due to better management and larger expenditures on repairs and maintenance. For an average load at GOP storage facilities, grain losses are expected to be reduced by 0.75 percent per metric ton of grain. In addition, GOP operating expenses, such as transport and loading charges, are expected to decline by $0.75 per metric ton of total GOP procurement.

It is assumed that Pakistan will have periodic wheat deficits during the first six years of the planning horizon. Consequently, the opportunity cost of wheat would be its imported price. During the next six years, it is assumed that wheat gradually becomes an exportable commodity so that the price gradually decreases to reflect an estimated FOB price minus port and inland transportation charges. The price assumptions in Table 4 were used to estimate the value of grain saved. Economic values for benefits from reduced operating expenses were obtained by deflating financial values by 10 percent. A loading factor of 0.6 was applied to all rehabilitated storage.

Tables 1-4 summarize the estimated costs and benefits directly attributable to the FHM sub-component. Table 5 presents estimated incremental indirect costs and benefits resulting from additional GOP grain storage management initiatives beyond the scope of FHM. It is assumed that in the third project year, the GOP will begin an accelerated repair and maintenance program for all unrehabilitated grain storage.

TABLE 4

Post Harvest Management Sub-Project Financial and Economic Benefits
($ '000)

PY	Cumulative Tons Rehabilitated	Grain Saved (%)	Grain Price ($/MT)	Value of Grain Saved	Saved Operating Costs	Saved Mgmt. Costs	---Total Benefits--- Financial	Economic
1	2	3	4	5	6	7	8	9
1	0	0	210	0	0	0	0	0
2	138000	0	210	0	0	0	0	0
3	321900	3.5	210	609	104	62	774	697
4	505800	3.5	210	1420	241	145	1806	1625
5	689700	3.5	210	2231	379	228	2838	2554
6	735300	3.5	210	3042	517	310	3869	3482
7	735300	3.5	200	3088	551	331	3971	3574
8	735300	3.5	190	2934	551	331	3816	3435
9	735300	3.5	180	2779	551	331	3662	3296
10	735300	3.5	160	2471	551	331	3353	3018
11	735300	3.5	150	2316	551	331	3199	2879
12	735300	3.5	145	2239	551	331	3121	2809
13	735300	3.5	145	2239	551	331	3121	2809
14	735300	3.5	145	2239	551	331	3121	2809
15	735300	3.5	145	2239	551	331	3121	2809
16	735300	3.5	145	2239	551	331	3121	2809
17	735300	3.5	145	2239	551	331	3121	2809
18	735300	3.5	145	2239	551	331	3121	2809
19	735300	3.5	145	2239	551	331	3121	2809
20	735300	3.5	145	2239	551	331	3121	2809

Notes:

1. Grain savings (Col. 3) are a percentage of grain stored in rehabilitated structures.
2. Column 4 assumes Pakistan is approximately self-sufficient in wheat through PY 10, then gradually enters the export market.
3. Column 5 is based on a loading factor of 0.6 for all rehabilitated storage. The loading factor is applied to col. 2 of the previous year, times col. 3, times col. 4 of the current year.
4. Column 6 is $0.75 per MT of rehabilitated storage (col. 2).
5. Column 7 is $0.75 per MT of stored grain, assuming a loading factor of 0.6 (applied to col. 2 of the previous year).
6. Column 9 is col. 8 adjusted by the SCF of 0.9.

It is assumed that the GOP will initally apply the new R&M program to 300,000 MT during project year three, and add an additional 300,000 tons each successive year until all unrehabilitated storage is being repaired and maintained at an annual expenditure rate equal to at least 1.5 percent of the replacement value of the facilities. The current R&M expenditure rate is 0.3 percent of replacement value. If the GOP raises the rate to 1.5 percent, part of the increased expenditures (and benefits) will be due to other donor programs and GOP decisions independent of PHM. It is expected that even without the PHM

TABLE 5

Post Harvest Management Sub-Project Indirect Financial and Economic Benefits and Costs
($' 000)

	Storage Parameters					Benefits				Total Costs		Net
PY	Cumulative Tons Rehabilitated	Other R&M (MMT)	Total Capacity (MMT)	Storage Affected (%)	Increased R&M Factor	Mgmt. Costs Saved	Operating Costs Saved	Total Benefits Financial	Total Benefits Economic	Financial	Economic	Incremental Economic Benefits
1	2	3	4	5	6	7	8	9	10	11	12	13
1	0		3.5	0		0	0	0	0	0	0	0
2	138000		3.7	0		0	0	0	0	0	0	0
3	321900	.30	3.9	16	.17	0	0	0	0	38	34	-34
4	505800	.60	4.1	27	.25	59	56	115	104	113	102	2
5	689700	.90	4.4	36	.33	158	150	308	277	227	204	73
6	735300	1.20	4.6	42	.42	295	281	577	519	378	340	179
7	735300	1.50	4.9	46	.50	450	450	900	810	567	510	300
8	735300	1.80	4.9	52	.50	534	563	1097	987	680	612	375
9	735300	2.10	4.9	58	.50	608	675	1283	1154	794	714	440
10	735300	2.40	4.9	64	.50	630	788	1418	1276	907	816	459
11	735300	2.70	4.9	70	.50	675	900	1575	1418	1021	919	499
12	735300	3.00	4.9	76	.50	734	1013	1747	1572	1134	1021	551
13	735300	3.30	4.9	82	.50	816	1125	1941	1747	1247	1123	624
14	735300	3.60	4.9	88	.50	897	1238	2135	1921	1361	1225	696
15	735300	3.90	4.9	95	.50	979	1350	2329	2096	1474	1327	769
16	735300	4.16	4.9	100	.50	1060	1463	2523	2271	1574	1417	854
17	735300	4.16	4.9	100	.50	1132	1562	2694	2425	1574	1417	1008
18	735300	4.16	4.9	100	.50	1132	1562	2694	2425	1574	1417	1008
19	735300	4.16	4.9	100	.50	1132	1562	2694	2425	1574	1417	1008
20	735300	4.16	4.9	100	.50	1132	1562	2694	2425	1574	1417	1008

Notes:

1. Column 3 assumes the GOP will bring 0.3 MMT of unrehabilitated grain storage capacity under a more intensive repair and maintenance program beginning in PY 3, and adds another 0.3 MMT to the program annually until all storage capacity (col. 4) is managed under the new program.
2. Column 4 assumes that total storage capacity will rise to 4.9 MMT by PY 7.
3. Column 5 is the percent of total storage capacity (col. 4) that is rehabilitated under PHM, or other storage that is assumed to be brought under a more intensive repair and maintenance program.
4. Presently, annual repair and maintenance expenditures are only 0.3 percent of the facilities' replacement values, a deficit of 1.2 percent from the desired rate of 1.5 percent. It is assumed that other donors will assist the GOP in raising the rate to at least 0.9 percent before the end of the PHM sub-project. It is therefore assumed that a incremental rate of 0.2 percent can be attributed to PHM indirect effects in PY 3 (or 0.2/1.2 = 0.17, the incremental R&M factor in col 6. The incremental rate is assumed to increase 0.1 percent annually thru PY 7, when the incremental R&M factor is 0.5 (or 0.6/1.2 = 0.5).
5. Column 7 assumes that the GOP realizes a management cost savings of 0.75% per MT stored in improved R&M facilities (col. 3) in the new program during the previous year. The assumed loading factor is 0.5. The value per MT is estimated from Annex L, Table 4, column 4.
6. Column 8 assumes that the GOP realizes an operating cost savings of $0.75 per MT of storage operated under the new R&M program during the previous year.
7. Incremental indirect costs (col. 11) are estimated as $0.756 per MT of grain stored in unrehabilitated facilities in the new R&M program during the previous year, (col. 3 times a load factor of 0.5) and adjusted by the incremental R&M factor for respective current year.
8. Financial cost and benefit nontradeables are adjusted by the SCF (0.9) to estimate respective economic values.

component, the R&M rate will rise to 0.9 percent of storage replacement value by the end of project year 7.

In project year 3, it is assumed that an R&M expenditure rate of 0.2 percent is an indirect consequence of PHM, and that this rate increases by 0.1 percent per year through project year 7. Thus, at the end of project year 7, 0.6 percent of the R&M rate is assumed to be an indirect effect of PHM. The incremental change in the R&M rate due to PHM is 0.17 in project year 3. The difference between current and desired R&M rate is: 1.5 - 0.3 = 1.2. Since the assumed incremental change in the rate due to PHM is 0.2, the proportion of new R&M expenditures due to PHM is 0.2/1.2, or 0.17.

In project year 7, an R&M rate of 0.6 percent is assumed attributable to PHM, so 50 percent (0.6/1.2) of incremental costs and benefits of the new R&M program are assumed to be indirectly caused by PHM.

Indirect benefits were assumed to result from savings in management and operations costs. Cost savings due to better management were estimated to be 0.75 percent per MT of grain stored in improved R&M facilities. Operating cost savings were estimated to be $0.75 per MT of storage operated under the new R&M program.

Estimated incremental indirect costs were based on $0.756 per MT of grain stored in unrehabilitated facilities in the new R&M program, adjusted for a load factor of 0.5 and the appropriate R&M incremental rate factor (Table 5, column 6).

ANNEX M

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DRAFT CONGRESSIONAL NOTIFICATION
PLANNED PROJECT SUMMARY SHEET

Country	: Pakistan
Project Title	: Food Security Management
Project No.	: 391-0491
Appropriation Category	: Economic Support Funds
Life of Project	: FY 1984 - FY 1989
Intended Obligation FY 1984	: $5.0 million ESF Grant

This is to advise that A.I.D. intends to obligate $5.0 million of Economic Support Funds in FY 1984 for the Pakistan Food Security Management Project.

The Food Security Management Project is designed to assist the Federal Ministry of Food, Agriculture and Cooperatives and the four Provincial Departments of Food and Agriculture to achieve the food security objectives of the GOP in a manner consistent with the rational and efficient use of national resources, the overall economic development of the country, and an improved standard of living for farm families and the population at large.

ANNEX: Activity Data Sheet

PROGRAM PAKISTAN

ACTIVITY DATA SHEET

TITLE	FUNDS	PROPOSED OBLIGATION (in thousands of dollars)
Food Security Management	Economic Support Funds	FY 86: 5,000 — LIFE OF PROJECT: 35,000
NUMBER 391-0495 — GRANT [X] LOAN [ ] — NEW [X] CONTINUING [ ]	PRIOR REFERENCE: None	INITIAL OBLIGATION FY 86 — ESTIMATED FINAL OBLIGATION FY 87 — ESTIMATED COMPLETION DATE OF PROJECT FY 89

Purpose: To improve the analytical and policy formulation framework, the managerial capabilities, and the physical capacity of the GOP to manage the national food security system effectively and efficiently.

Background: Agriculture is the largest sector in the Pakistani economy, accounting for nearly one-third of the gross domestic product, employing over half of the labor force, and contributing approximately 50 percent of export earnings. In part through the impact of the "Green Revolution" on domestic production of wheat and rice, Pakistan has now achieved self-sufficiency in both crops, with a small exportable surplus in some years. Nevertheless, the potential exists to substantially increase Pakistan's production of basic grains, if the appropriate mix of policies, institutional support, and infrastructure can be put in place.

Over the last few years, the GOP has moved progressively to implement a set of policies designed to promote more rapid development of the agricultural sector. These policies have contributed to the steady rise in the production of the strategic crops of wheat, rice, and sugarcane. As the agricultural system productivity expands to produce a surplus for the export market, policies based on improved economic analysis will continue to play a critical role in ensuring the efficient and productive use of the nation's resources. However, in general, the analytical research undertaken by existing public and private institutions varies in quality and relevance and is performed in isolation of the policy decision-making process. And one of the major underlying constraints to improved economic and policy analysis is the absence of timely, accurate and reliable agricultural data.

As a result of GOP policies in the sector, the majority of off-farm grain storage facilities in Pakistan are in the public sector. The public sector grain storage network is characterized by significant grain losses, inefficient management systems, deteriorated facilities, and inadequate quality control. Since food grains are the lifeblood of the country, an efficient and reliable storage network is indispensable for Pakistan to meet its food security objectives.

Project Description: This five-year project will: (a) assist the GOP to establish, institutionalize and strengthen the capacity of an Economic Analysis Network (EAN), composed of public and private institutions in Pakistan that produce or utilize agricultural economic analysis, to conduct relevant, high quality and timely economic and policy research; (b) finance a special studies program of policy analysis on selected topics; (c) assist the GOP to implement an improved system for the collection of basic agricultural data by the provincial Departments of Food and Agriculture, based on the area sampling frame methodology, and (d) improve the management of the provincial public sector grain storage network by introducing improved management systems, rehabilitating grain storage facilities, and strengthening the system for transfer of technologies for storage design, grain quality maintenance, and pest control.

Relationship of Project to A.I.D. Country Strategy: The overall A.I.D. strategy in Pakistan relies on a blend of resources to reactivate a long-term relationship in development cooperation. Projects are intended to meet basic human needs, contribute to long-term development, build a foundation for more rapid economic growth, and relieve balance of payments difficulties. There is a major focus on building institutional capacity in both the public and the private sectors to enable Pakistan to better plan, manage, implement and bear the recurring costs of development activities. The overall goal of activities in the agriculture sector is to increase productivity and farmer income. Over the coming years, A.I.D. will be supporting the GOP in several programs to achieve this goal. It will be met through this project by improving the agricultural data collection system, strengthening the capacity of the GOP to carry out economic and policy analysis, and increasing the operational efficiency and financial management of the national grain storage network.

Host Country and Other Donors: The GOP is expected to contribute the equivalent of $4.5 million over the life of the project in the form of storage rehabilitation, operation and maintenance, staff salaries and operating expenses, commodities, and training. In addition, a major output of this project will be a long-term plan with performance targets and policy measures mutually agreed upon by AID and the GOP for meeting the operation and maintenance recurrent costs of the entire public sector grain storage system.

This project builds on and supports the work of other major donors in Pakistan, complementing their efforts in the areas of both economic and policy analysis and post-harvest management. The proposed data collection activities continue US assistance to an area where other donors have traditionally not been active in Pakistan. The IBRD and FAO are currently supporting improved policy analysis and increased coordination of economic research through assistance to the Ministry of Food and Agriculture and the Agricultural Prices Commission. Under an on-going IBRD project and a recently approved ADB loan, an additional 1.4 million metric tons of newly constructed grain storage facilities will be added to the existing network. The FAO is also financing a survey of post-harvest on-farm losses as part of an effort to improve on-farm technologies.

Beneficiaries: The direct beneficiaries of this project will be the researchers, analysts, grain storage personnel and other private and public sector professionals who participate in the various programs financed under the project. Pakistani decision-makers will also be direct beneficiaries of the project, to the extent that the project improves their access to: (a) reliable information on the agricultural sector, (b) relevant and high quality economic and policy analysis and recommendations to use in policy-making, and, (c) an improved and less costly grain storage system to help achieve national food security objectives. Important also, farmers will benefit directly from the improved grain storage system, which should permit higher prices to be paid to the producers as a result of reduced losses and should also strengthen the government's ability to reduce price fluctuations through its stock management programs. Finally, the project will benefit all elements of Pakistani society, including small farmer-families and other rural residents, who will stand to gain from better agricultural policies, better information on the status of the agricultural economy, and the resulting improved decisions by national and provincial policy-makers.

Major Outputs	All Years
National Area Sampling Frame established	1
Economic Analysis Network of local private and public sector entities institutionalized	1
Economic and policy analysis studies completed	62
Personnel trained in economic and policy analysis, agricultural statistics methodology, and post-harvest management technologies	2535
Storage facilities rehabilitated	750,000 metric tons
Long-range plan for meeting O&M recurrent costs of public sector grain storage system	1
Pest control and grain storage research studies completed	12
Reduced grain storage and handling losses	-

A.I.D. Financed Inputs	Life of Project ($ 000)
Technical Assistance	8,732
Training	3,418
Commodities	1,676
Storage Rehabilitation	7,546
Economic and Policy Studies	5,643
Evaluation	288
Other Costs (including local staff salaries, local research programs, and contingency)	7,6[illegible]
Total	35,[illegible]

U.S. FINANCING (In thousands of dollars)	Obligations	Expenditures	Unliquidated
Through September 30 xxx 1982	-	-	-
[illegible] Year Ia 3	-	-	-
Estimated through September 30 1985	-	-	-
		-	-
Proposed Fiscal Year 1986	5,000	Future Year Obligations 30,000	Estimated Total Cost 35,000

PRINCIPAL CONTRACTORS OR AGENCIES
- USDA Statistical Reporting Service
- International Food Policy Research Institute
- U.S. and Local Private Firms and Universities to be selected competitively

SUBJECT: Pakistan - Food Security Management Project - Justification for Non-Competitive Procurement

Problem:

To approve non-competitive negotiated procurement of technical services from the International Food Policy Research Institute (IFPRI) for implementation of the Economic and Policy Analysis Special Studies Component under the Food Security Management Project in Pakistan.

Background:

-- COOPERATING COUNTRY:	Pakistan
-- AUTHORIZING DOCUMENT	Project Authorization
-- Project (391-0491)	Food Security Management
-- VALUE OF SERVICES: over three (3) years	Approximately $1.5 million

Discussion:

The Food Security Management Project is designed to achieve the food security objectives of the Government of Pakistan (GOP) in a manner consistent with the rational and efficient use of national resources, the overall economic development of the country, and an improved standard of living for farm families and the population at large. The project will improve the analytical and policy formulation framework, the managerial capabilities, and the physical capacity of the GOP to manage the national food security system efficiently and effectively through three related subprojects: Economic and Policy Analysis, Agricultural Data Collection, and Post-Harvest Management.

The Economic and Policy Analysis subproject of the project includes a Special Studies component to address key issues in the food security area. The studies are to be carried out primarily by expatriate advisors in collaboration with local Pakistani economic analysts to answer specific policy questions. The two studies which are likely to be undertaken include: a Food Grain Modeling Study to develop an analytical framework for quantitative evaluation of alternative food supply and price stabilization policies to provide a basis for continuing analysis and decision making by the GOP, and a Ration Shop System Alternatives Study to address the impact of the ration shop system on food distribution and the impact of alternative policy sets on food consumption and nutrition among low-income groups.

Justification:

Experience has shown (i.e., Cairo and Tunis) that shifts in consumer food price policies can elicit volatile responses from the poorest elements of society which can threaten national security. Such responses, or just the possibility thereof, often discourage LDCs from decreasing food subsidies even when their costs threaten the liquidity of the national treasury. LDCs are consequently very sensitive to either real or perceived "outside" influences on domestic food price policies.

The GOP believes that an institution which undertakes the responsibility to provide analysis and recommendations in the politically sensitive areas of food security and prices cannot be associated with any particular country. A firm or institution associated with a particular country, such as the United States, making recommendations on the rationalization of domestic consumer food price policies and linkages to broader food security goals will create a situation that will permit identification of the country with those recommendations. If accepted by the government, it would give political opponents the opportunity to argue, however unfairly, that the government is accepting positions dictated by another country. As a result, the GOP has decided that it must obtain these services from an international research institute that is not associated with any country and has a reputation for being an impartial source of technical expertise to develop appropriate policy solutions to difficult and sensitive food price and security problems.

IFPRI, a member of the Consultative Group on International Agricultural Research, is an institution to which countries have turned for sensitive analyses that do not bear the stamp of any particular country. In 1977, for example, IFPRI assisted the government of Sri Lanka in minimizing the crippling costs of a free rice ration policy by designing a non-indexed food stamp system which protected the poorest elements of society against the phased shift away from subsidies that would eventually lead to the liquidation of the entire ration system. These changes were adopted and implemented with minimal political disruption in a country where previous governments rose and fell over the same rice subsidy issue. In addition to this, IFPRI has undertaken equally sensitive issues in Egypt and the Indian State of Kerala with similar success.

We agree with the domestic political concerns of the GOP. Moreover, we do not believe it is in the interests of the United States to have an American institution, and thereby the United States, identified directly with food security and price recommendations that might have political consequences within Pakistan. We request, therefore, the noncompetitive selection of IFPRI to provide technical assistance for this portion of the Project.

Authority:

AID Procurement Regulations Subpart 7-3.101-50 provides that contracts may be negotiated without competition when the Administrator or the Assistant Administrator responsible for the program makes a formal written determination that procurement from any other source would be inconsistent with the foreign assistance program and interfere with the fulfillment of foreign assistance objectives. No other source of expertise is acceptable to the GOP to serve as its policy analyst and confidential advisor on food price and consumption issues. For the reasons stated above, procurement from any other source would impair attainment of a major foreign assistance objective in Pakistan (namely, to rationalize domestic consumer food price policies and their linkages with broader national food security goals, thereby promoting economic and political stability) and would thus be inconsistent with the fulfillment of the foreign assistance program. Once approved, this document will constitute the formal written determination and findings required by the AIDPR.

Recommendation:

That you approve negotiation of a contract with IFPRI for implementation of the Special Studies Component within the Economic and Policy Analysis Subproject of the Food Security Management Project.