

165

649-0101

TABLE OF CONTENTS

	Page
Title	1
Project Paper Facsheet	11
PAF - Part I	111
Table of Contents	iv
I. SUMMARY AND RECOMMENDATIONS	1
II. BACKGROUND AND DETAILED DESCRIPTION	3
A. Background	3
B. Interventions Into the Agriculture Sector	4
C. Project Description	5
III. PROJECT ANALYSES	10
A. Economic Feasibility	10
B. Social Soundness Analysis	19
C. Technical Analysis	24
D. Environmental Analysis	30
E. Financial Analysis	31
F. Evaluation Plan	35
G. Implementation Arrangements	35
H. Conditions, Covenants, Negotiating Status	38
<u>ANNEX</u>	
I. COUNTRY, PROJECT, STATUTORY CHECKLISTS	
II. LOGICAL FRAMEWORK	
III. FINANCIAL TABLES	
IV. INITIAL ENVIRONMENTAL EXAMINATION	
V. ENGINEERING ANALYSIS 611(a)/611(e)	
VI. GOVERNMENT APPLICATION FOR ASSISTANCE	
VII. AID/W CABLE APPROVAL TO PREPARE PROJECT PAPER	
VIII. AVERAGE MONTHLY AND ANNUAL RAINFALL AT SELECTED STATIONS	
IX. RAINFALL DISTRIBUTION MAP	
X. EVALUATION PLAN	
XI. DONOR ACTIVITIES IN THE SECTOR	

Appendix 5A to HB 3, Part I
(TM 3:19)

AGENCY FOR INTERNATIONAL DEVELOPMENT PROJECT PAPER FACESHEET		1. TRANSACTION CODE <input checked="" type="checkbox"/> A A = ADD C = CHANGE D = DELETE	PP 2. DOCUMENT CODE 3
3. COUNTRY/ENTITY Somalia Democratic Republic		4. DOCUMENT REVISION NUMBER <input type="checkbox"/> 1	
5. PROJECT NUMBER (7 digits) <input type="checkbox"/> 649-0101 <input type="checkbox"/>	6. BUREAU/OFFICE A. SYMBOL AFR	B. CODE <input type="checkbox"/> 06 <input type="checkbox"/>	7. PROJECT TITLE (Maximum 40 characters) <input type="checkbox"/> Ag Extension/Training/Research <input type="checkbox"/>
8. ESTIMATED FY OF PROJECT COMPLETION FY <input type="checkbox"/> 81 <input type="checkbox"/> 2		9. ESTIMATED DATE OF OBLIGATION A. INITIAL FY <input type="checkbox"/> 78 <input type="checkbox"/> B. QUARTER <input type="checkbox"/> 1 <input type="checkbox"/> C. FINAL FY <input type="checkbox"/> 80 <input type="checkbox"/> (Enter 1, 2, 3, or 4)	

A. FUNDING SOURCE	FIRST FY			LIFE OF PROJECT		
	B. FX	C. L/C	D. TOTAL	E. FX	F. L/C	G. TOTAL
AID APPROPRIATED TOTAL	2835	418	3253	3477	1573	5050
(GRANT)	2835	418	3253	3477	1573	5050
(LOAN)						
OTHER U.S.						
1.						
2.						
HOST COUNTRY					6650	6650
OTHER DONOR(S)						
TOTALS	2835	418	3253	3477	5231	11,708

A. APPROPRIATION	B. PRIMARY PURPOSE CODE	PRIMARY TECH. CODE		E. 1ST FY <u>78</u>		H. 2ND FY <u>79</u>		K. 3RD FY <u>80</u>	
		C. GRANT	D. LOAN	F. GRANT	G. LOAN	I. GRANT	J. LOAN	L. GRANT	M. LOAN
(1) FN	3214	010		3253		947		850	
(2)									
(3)									
(4)									
TOTALS				3253		947		850	

A. APPROPRIATION	N. 4TH FY		O. 5TH FY		LIFE OF PROJECT		12. IN-DEPTH EVALUATION SCHEDULED
	C. GRANT	F. LOAN	R. GRANT	S. LOAN	T. GRANT	U. LOAN	
(1) FN					5050		<input type="checkbox"/> 19 <input type="checkbox"/> 81
(2)							
(3)							
(4)							
TOTALS					5050		

13. DATA CHANGE INDICATOR. WERE CHANGES MADE IN THE PID FACESHEET DATA, BLOCKS 12, 13, 14, OR 15 OR IN PPP FACESHEET DATA, BLOCK 12? IF YES, ATTACH CHANGED PID FACESHEET.

2
1 = NO
2 = YES

14. ORIGINATING OFFICE CLEARANCE SIGNATURE <i>Charles P. Campbell</i> TITLE AID Representative		DATE SIGNED <input type="checkbox"/> 18 <input type="checkbox"/> 31 <input type="checkbox"/> 1 <input type="checkbox"/> 71 <input type="checkbox"/> 81	15. DATE DOCUMENT RECEIVED IN AID OFFICE FOR AID # DOCUMENTS, DATE OF DISTRIBUTION <input type="checkbox"/> 19 <input type="checkbox"/> 01 <input type="checkbox"/> 1 <input type="checkbox"/> 78
--	--	---	--

Agriculture Extension, Training and Research

Summary and Recommendations

1. Grantee: Government of the Somali Democratic Republic
2. Grant: In FY 1978 \$1,800,000
3. LOP Cost: \$5,050,000 over three years
4. Project Description - The long term goal of the GSDR is to achieve self sufficiency in food production. In order to achieve this goal the GSDR and donors, including AID and the IBRD among others, have determined that a viable, integrated, self sustaining National Extension Service must be developed over the long term. Projects already designed by the IBRD address the long term institutional needs of a national extension service including related research and training and a parallel effort for accelerated development of the Bay Region. AID plans to participate in both of these efforts as a co-financer of technical assistance, training and commodities. In the short run the GSDR has requested that AID undertake an immediate action program in the Bay Region. This immediate action program is based on extending an existing "minimum - technology" technical package developed by the IBRD based on Wyoming State research in the 1960's. (See description page 25-26) This package emphasizes practices which can be applied by farmers at little or no cost but which allow them to better utilize and manage their resources and optimize their production. An applied adaptive research program including both research station plots and farm plots is included to test improvements for the minimum package. The project is developed around the concept of training farmers to better equip themselves for direct participation in the development process.

The AID impact project will both contribute to the development of the relevant National Extension Service and be integrated into it when it is operational. The experience gained by the technical assistance team during the first years of the project is expected to contribute to the development plan for the National Extension Service. During the formative years of the National Extension Service the project staff will draw directly on the Ministry of Agriculture resources and on the Center for Agricultural Research but after the IBRD projects begin to be effective the National Extension Service will serve as the primary backstop for the regional project and as the linkage to both National and International Research activities.

AID's contributions to the project are eight technical assistants to work in the Bay region, establishing the extension and applied research program, training farmers and GSDR extension staff, long term participant training for 12 GSDR technicians, short term technical courses in the US or at international arid land centers for up to 10 GSDR technicians, commodities

and housing support. The GSDR's contribution consists of the provision of numerous existing facilities, Ministerial and research center backstopping and staff for the project.

5. Project Justification: The primary justification relates to the stated GSDR goal of attaining self-sufficiency in food grains. This is a standard goal of most developing countries but Somalia has a real chance to not only reach self-sufficiency but to also become a grain exporting nation. New cultural practices, improved seed, use of local fertilizer along with a farmer-oriented extension service should lead over time to a doubling and possibly a tripling of current small farmer production. Further justification relates to the foreign currency Somalia will save from reduced imports, and additional grain available for other countries by taking Somalia off the recipient list of PL 480 Title I and II.

6. Other Sources of Financing:

The development of a National Extension Service is an effort which involves numerous donors. The IBRD designed project to create a National Extension Service and training center is to be co-financed by the Islamic Fund for Agricultural Development and by AID. In the Bay Region the present AID project is the first phase of a larger effort for development of the region orchestrated by the IBRD. Other donors to co-finance the Bay Region Development are the African Development Fund and AID. Each of these projects supports a critical portion of the overall program to develop the extension service and increase food production.

7. Host Country Contribution: \$6,658,000 consisting mainly of salaries, buildings and land.

8. Mission Views: USAID and the Embassy both strongly support this project.

9. Statutory Check List: All statutory criteria have been met.

10. Issues: None

11. Recommendations: Approval of the project and life of project costs of \$5,050,000.

II. BACKGROUND AND DETAILED DESCRIPTION

A. Background

Somalia is located in the eastern horn of Africa with an area of more than 637 thousand square kilometers. Its climate is arid to semi-arid with few areas exceeding 500 millimeters (20 inches) of rainfall. The Shebelle and Juba are small rivers which flow from the highlands of Ethiopia toward the Indian Ocean and provide the water for modest irrigated agriculture. The present population is estimated at 3 to 3.5 million with an average per capita income of 480 to 600 So. S. (U.S. \$80 to \$100).

The economy is dependent on agriculture and livestock. Essentially all exports are in the form of agricultural commodities. For the first half of 1977 this consisted primarily of livestock and livestock products (74 percent), bananas (16 percent), and other agricultural products (10 percent). Export of livestock and livestock products and bananas are suffering severe market competition. Total exports declined 26 percent from the first half of 1976 to the first half of 1977. Many consumer goods, energy fuels, durables and basic production inputs must be imported. Recent trends display increasing trade deficits resulting in severe domestic inflationary pressures. Trade deficits have been partially alleviated in the form of grants and loans for several internally funded development projects.

The Government of Somalia has given highest priority to agricultural development with the goals of food self-sufficiency and self-reliance. Performance has been commendable in spite of severe drought and adversity. National agricultural policy has encouraged the development of public sector, large-scale state farms, under several programs. Three primary reasons are evidenced for this policy: (1) need for a rapid increase in food production; (2) the need to alleviate unemployment, and (3) the ability to attract monetary support from abroad. Even with the provision of irrigation water, land, fuel equipment, seed fertilizer and control chemicals, the performance of public sector farms is very low. Management constraints, shortages of technically trained personnel, lack of incentives and input imbalance on the large scale units have contributed to this disparity. The private sector has a few commercial farming operations, particularly in banana and citrus activities. The private sector in agriculture is dominated by small subsistence farms that produce 80 percent of the cereals and oil seeds in the country. Without exception, the private sector (the small, self-sufficient farms) displays a more efficient production performance than was evidenced on public sector farms and livestock production units.

Typically, the private, small farm operators are producing for subsistence with just enough additional saleable yield to provide for purchased necessities and a modest risk coverage for protection against adversity such as drought, insect, bird and disease losses.

This project is designed to support the improvement in productivity of the small, privately operated farms and farm cooperatives. These units clearly display the ability to increase food production two to four-fold if they are provided very modest inputs such as technical assistance in preparation of seed beds and improved seed. Additional benefits must be obtained by providing other inputs, including fertilizers, chemicals, water, technology, equipment, transport and marketing services.

The land with the highest production potential with respect to soils, rainfall, irrigation waters and existing roads and markets is found along and between the Shebelle and Juba rivers. This geographic area contains 85 percent of the present land under cultivation and produces over 90 percent of the agricultural products. Much cultivatable land in this area is presently not being farmed. Only 700 thousand of the more than six million hectares of arable land in the nation are currently being cultivated.

The dominant project thrust is toward increasing the incomes of small private farmers and farm cooperative members by providing an effective on-the-farm extension program designed to overcome the principal constraints to agricultural production. This extension program will attempt to improve the level of agricultural production to achieve the Government of Somalia's goals of domestic food self-sufficiency and self-reliance by making maximum and effective use of resources currently available to the small farmer, while holding to an essential minimum external inputs that are not readily available in the country. In order to satisfy these objectives, it will be necessary to develop a national extension service which will give primary emphasis on direct assistance to farmers and livestock owners supported by training and applied research. These goals and the formulated project program are consistent with the Congressional Mandate.

B. Interventions Into the Agricultural Sector

In order to support the Government of Somalia in their achievement of the goal of self-sufficiency, AID, in cooperation with other donors (Islamic Fund for Agricultural Development and African Development Fund) led by the World Bank, has identified a comprehensive agricultural sector program to address the critical constraints in the systems for delivering inputs and technologies to small farmers. It includes development of a national extension service, planning for national level research, national training programs, and specific regional development programs

to deliver technologies to the farmers. The IBRD in their Agricultural Extension and Training Project plans to create the national level systems for supporting field extension efforts and for training senior level extension agents. AID expects to assist in this national level system by developing a project which will provide the technical assistance and support needed for the non-capital portions of the National Extension Service (NES) and the Farm Management and Extension Training Center (FMETC).

Both the IBRD and the Government of Somalia recognize that the system building is a critical part of a self-sustaining program but also acknowledge that the system building portion of the program has a very long term payoff and that some interventions are needed which will have immediate payoffs in terms of improved production while at the same time adding to the practical experience base in the country. Therefore, they have included an integrated rural development project in the overall sector program. Thus, the AID project is to focus on testing and introducing a minimum technology production package in the Bay Region, the most productive region of the country. This project will create a nucleus of experienced technical assistants and Somalis who can be of further assistance in developing the system at central level in addition to having immediate production payoffs.

AID will ultimately be participating in both the long-term activities and in the parallel short-term activities. The present project will support the short-term program while further project(s) to be submitted for review in FY 79 and FY 80 will provide funding for longer-term activities.

C. Project Description

The goal of this project is to increase agricultural production through an intensification program implemented by the NES to allow Somalia to regain self-sufficiency in food production. As discussed above, this requires a two-pronged approach, one thrust being a long-term approach to institution building and system development and the other being an immediate program to begin production interventions in selected regions. These two activities must move in a parallel but complimentary fashion. The present project focuses on the immediate interventions.

The purpose of this project is to develop an immediate impact production project emphasizing the delivery of existing, minimum input, technical packages to the farmers of the Bay Region. The Bay Region is the area of Somalia with the greatest potential for intensified agricultural production. It has better soils, higher rainfall, higher availability of irrigation water, and better market access than most other areas of the country. It contains 85 percent of the present land under cultivation and produces over 90 percent of the total agricultural output of the country. It supports some 60,000 farm families or 500,000 people. It lends itself naturally to being the focus of a pilot effort in agricultural development.

It is estimated that some 2,000 farm families (over 15,000 people) will be actively participating in the program as adaptors by year three of the project and that some 4,000 hectares of land will be utilizing improved technical packages giving 2,000 tons of additional food production annually.

In addition to the production benefits gained by the project as steps toward achieving the goal, the project will also provide an experience base and testing ground for both technical packages and for communication methodologies. Successful approaches developed under the project will be expanded to cover more of the Bay Region and replicated in other areas in future follow-on projects.

The outputs expected under the project are as follows:

1. Forty-one hectare demonstration plots in 15 villages for rainfed sorghum production;
2. Twenty-one hectare demonstration plots in ten villages for irrigated maize production;
3. Twenty-five base level extension agents trained on the job;
4. Minimum input technical packages optimized for sorghum and maize;
5. Basic technical training materials developed for sorghum and maize production; and
6. 12,500 farm families reached by information through the extension service.

In order to improve productivity on small, privately-owned farms and farmer cooperatives, the intensive on-the-farm training program is aimed at making the most effective use of locally available, natural and human resources. The program will introduce technologies and adaptations most likely to achieve desired production results without at the same time radically changing established life patterns or requiring expensive inputs difficult to supply. This will require the establishment of a network of farmer training personnel assigned to a specific number of farms in a district. To the extent possible the farmer training personnel will be agricultural graduates, existing extension personnel, and possibly experienced farmers. They will be supported and assisted by AID staff who will provide them with intensive in-service training in the field and at Farmer Training Centers. This training will be designed to equip them with ability to transfer the appropriate technology and innovations arising from the research program to achieve the desired production yields for small farmers. The program will be implemented with an initial impact phase. The impact phase will begin with field visits to

the Bay and Shebelle districts to describe the proposed programs to concerned groups and authorities. This would be the essential first step to obtaining local acceptance and support. This would be followed by the identification of participating farmers and cooperatives in crop trial program. In addition, direct contacts would be made in other regions to assess approaches to provide agricultural services to farmers and livestock raisers in these areas. We would expect to be able to begin the impact phase early 1979, possibly utilizing individual personal services contracts. Procurement of essential supporting supplies and inputs will be initiated and delivered to coincide with arrival of AID agricultural technicians. The initial objective of this phase would be an early increase in cereal production on individual farms. A longer term phase will concentrate on the institutional development process associated with the establishment of a self-sustaining National Extension Service. Emphasis will be given to problem solving and production oriented training on the farm. The training program will concurrently help individual small farmers and cooperative members to overcome production constraints and develop a cadre of Somali agricultural workers which can continue farmer training and extension services countrywide. Training programs will be developed and taught at Farmer Training Centers at Genale, Baidao and other suitable facilities in the Bay Region. The major emphasis in the project is on a demonstration approach to farmers with the technical package being tested and demonstrated in villages. As Somali extension agents are trained and gain experience with the technical package, they will begin identifying innovative farmers and opinion leaders who would be interested in trying the new package. In accomplishing this task they will work with existing local institutions such as district committees, orientation units, village peers, etc. The agents, with technical support from the TA team and backstopped by the Ministry of Agriculture, will then advise and assist those farmers who wish to adapt the package. These pilot farmers will then serve as demonstrators for their neighbors and social groups.

The inputs necessary to achieve these outputs are technical assistance, Somali staff, presently existing minimum-input technical packages, long term participant training, commodities, and housing and office facilities. The technical assistance team is the heart of the project since very little exists at present in terms of a delivery system to farmers. This technical assistance will be responsible for testing the technical package and modifying it as required to optimize the package as well as guiding the extension efforts and training the extension staff.

The technical assistance team will include the following specialists:

1. Chief of Party--Extension System Development
2. Extension Specialist in training and communication

3. Extension Agronomist--field extension/farm manager
4. Extension agronomist--adaptive research
5. Plant protection/farm storage
6. Extension Agronomist--seed production, processing and storage, including on farm
7. Extension Agronomist--crop production
8. Animal husbandry/production specialist

All of the team with the possible exception of the Chief of Party will be located in Bay Region and working directly with small farmers and low level Somali extension agents. They will train the extension agents, organize the adaptive research and farm tests, demonstration, and collate results, and redesign the approach as necessary. Positions 4-8 will be persons with practical experience as agents of change in developing countries. Positions 2 and 3 will be trained extensionists at the MS level who are experienced in their fields and position 1 will be a MS or Ph.D. with long experience in extension in developing countries.

Fifty person months of technical assistance are financed by the project to bring in outside consultants for evaluation and redesign, technical backstopping, etc. The plan for utilizing this pool of expertise will be developed by the technical assistance team as they identify specific needs.

The GSDR extension staff for the program will be drawn from the minimum staff presently working in the area, supplemented by recent graduates from the Agricultural Secondary School and the University. These people have a reasonably good grasp of the theoretical base but are very weak in practical applications. The technical assistance team will provide on-the-job training for some 25-30 of these agents. The Somali Government has recently announced a "Crash Program" for the Bay area beginning with the 1979 crop season and has committed a large portion of the output of their agricultural schools to this effort.

The core technical package to be extended in the program is a minimum input package requiring almost no inputs from outside Somalia. It will be based on improved cultural practices including seed selection, seedbed preparation, plant density, weed control, etc. Wyoming State had tested this package and introducing it in selected villages in the early 1970's and it is still utilized in some villages. In addition to expanding usage of this very basic package a second level package, including improved water and organic matter conservation methods coupled with animal traction, rotation and fallow systems and improved varieties would be introduced to the most innovative farmers and on some demonstration plots.

Ultimately, it may be possible to progress to a more advanced technology incorporating inputs such as fertilizers and pesticides but at the present time there are serious doubts as to whether they are economically and financially feasible given the high risk nature of rainfall distribution in the area. Field tests will be done on these more advanced packages to document and collect yield, cost and return data on them over time to define their validity in the Somalian context.

Long term participant training will be provided for 12 Somalis in the following fields; extension theory, agronomy, crop protection, etc., to begin preparing a well trained professional base for the long term extension system development activity. Up to 20 person months of short-term training are provided for upgrading the skills of critical staff members. Eight houses for the technical assistance team will be provided in the form of prefabricated buildings from the U.S. These will be located at Baidoa and other nearby centers.

Commodities provided under the project include agricultural machinery for use on the adaptive research plots at Bonka, extension training materials, agricultural inputs for the farm demonstrations and tests, office equipment including radio equipment for communications, vehicles for the technical assistance team and motorbikes for village extension workers.

The agencies of the Government of Somalia will be expected, to provide and finance permanent counterpart staff positions needed for the development and continuation of the national extension, training and research program. These positions and personnel are to be continued, following termination of AID assistance to operate the project and manage the extension service and increase benefits being provided by this institution.

It is understood that many of the above required Somali staff are presently unnamed and will need to be recruited and receive specific training as the project is implemented. As the project nears completion, necessary personnel will be in place to take over from U.S. technicians. A covenant to this effect will be included in the Grant Agreement.

The GSDR has a large number of existing facilities suitable for utilization or adaptation in support of the program to establish a viable nationwide extension service. These facilities include academic institutions, training and research centers, district offices and orientation headquarters that will be used to the extent possible in order to hold new construction to a minimum.

III. PROJECT ANALYSES

A. Economic Feasibility

Somalia has an especially vulnerable economy subject to fluctuating external influences, dependent to a large extent on one main export, live animals, and handicapped by a fragile revenue base. The GSDR financial operations have deteriorated sharply over the past several years with expenditures exceeding revenues by substantial amounts. Currently budgetary deficits have been running at about US \$100 million to US \$120 million annually.

Budgetary deficits are financed primarily by external transfers and by central bank financing. Although GSDR has been successful in the past in obtaining large external cash flows, this degree of dependence represents a fairly precarious financial situation.

The main cause of GSDR budgetary and fiscal problems lies in its narrow and generally weak revenue base. The three main sources of government revenue are (1) direct taxes on individuals, property, goods and services, (2) international trade and transactions, import customs, export levies, and (3) non-tax revenue mostly from public enterprises. International trade and transactions are the most important source of tax revenue. Since the availability of foreign exchange has a direct relationship to amount of revenue obtained from international trade and transactions, heavy dependence on this source of revenue must be viewed with some alarm by the GSDR.

Regretably, government prospects for expanding its revenue base are not particularly promising. There appears to be some inelasticity in revenue gained from direct tax sources, and even small increases in revenues from public enterprises are doubtful unless they become more efficient than they are at present.

Understandably, Somalia's balance of payment position can not be considered any more buoyant than its budgetary prospects. It continues to suffer from chronic current account balance of payment difficulties of varying degree of severity. In CY 1977 Somalia registered a trade deficit of So Sh 657 million (over US \$ 100 million) as compared to So Sh 598 million in 1976. Although overall current account deficits were smaller this was only possible because of substantial external capital flows. The root cause of these continuing negative balances is the disproportionately large gap between export and imports.

Over the past several years these balance of payment deficits were made up almost entirely by very large official capital movements, and in 1977 it amounted to 610 million So. Sh. (nearly 100 million U.S.)

However there are grave potential difficulties that could arise over time from an economy relying so heavily on external transfers to meet foreign exchange requirements for budgetary and development purposes.

At the close of 1977 the estimated foreign exchange (FX) reserve of So. Sh. 609.1 million (98.4 million U.S.) amounted to but five months of imports at CIF rates. Though Somalia's balance of payments shows a modest increase to FX reserves for the past three years, these additions have been declining in magnitude each year and are attributable as noted above to very favorable unilateral external transfers and capital flows. However, as could be expected GSDR debt is becoming significantly larger and debt service payments are steadily increasing. Debt payments in 1977 increased substantially to So. Sh. 67.8 million (10.93 million U.S.) creating a service ratio of 9.6%. Debt payments based on 1981 estimates of So. Sh. 224.0 million (36.12 million U.S.) in 1981 given current export earning performance, will probably be difficult for GSDR to service. Under these circumstances GSDR will not only be dependent on external support, particularly grant transfers, but it will also have to make a major effort to expand its internal revenue base primarily through increases in agriculture crop and livestock production and the promotion of other agricultural exports.

This project is designed to have an early impact on the country's balance of payment position by substantially increasing the production of cereals and reducing food imports. Since as much as 80% of the country's cereal and oil seeds production is in the bay and interrevereine region the project assistance exports will be concentrated in this area.

The Project is essentially an institution building and technical assistance project. The benefits would materialize progressively over the years and be expressed in terms of increased production. Increases in productivity would depend on adoption rate of improved practices and the efficiency of the newly trained farm extension personnel and the small farmers/target area. In addition the project is expected to benefit small farmers in terms of increased incomes and improved living standards.

Private sector small farmers (2-10 hectares) produce more than 85 percent of the nation's food grains, but they are dominated by a self-sufficient, low-risk ambition. These producers can be characterized as being self-constrained by considering the adverse conditions of an unfavorable year as a production goal limitation. Typically, the result is to seek a low-yield with modest risk. In order to advance from this position the provision of technical assistance and readily available agricultural inputs will be needed to lower unit production costs and substantially increase yields. Evidence exists that the small private sector farmers are responsive and can achieve a much higher and more efficient level of output.

The primary agricultural production activities expected to benefit from this project are sorghum and maize. Important benefits are also expected from the livestock sector in the form of improved quality. The rainfed areas suitable for sorghum production and the irrigated lands along the Shebelli and Juba rivers offer a large potential for dramatically increasing food production. National deficiencies of domestic cereal grain production have necessitated the annual importation of 50-60 metric tons. During several of the past five years, the import value of these cereals has ranged as high as 20 percent of the total central government budget or approximately U.S. \$ 40.5 million. Recent trends indicate these deficit problems impose increasing burdens on the economy and the country's foreign exchange reserves.

Somalia currently has approximately 400,000 hectares of land in sorghum production with an average yield of 3 quintals per hectare. Yields can be increased to 10 quintals per hectare by using good technical/cultural practices and improved seeds. (Yields in excess of 36 quintals have been achieved at the Bonka Research Station). Provided the projects minimum technological import package is provided and applied, yield increases are possible on the lands now used for sorghum which would reduce more than half (28 thousand metric tons) of the current annual cereal deficits. A concerted extension effort would be needed to assist the region to realize this increase in yields over the 3 year project period. It is anticipated that during the next 5 to 10 years both yields and an increase in land cultivated for sorghum could establish the grain output level needed to meet domestic requirements and provide a surplus for export.

Maize production is concentrated on the potentially highly productive irrigated and semi-irrigated lands. More than half of 110,000 hectares in the Shebelli and 40,000 hectares in the Juba valley used for maize are estimated to be at least partially irrigated. Increased profit incentive for higher yields and/or lower costs could put additional lands farmed in the past into cultivation and reclaim other hectares for irrigation. The application of water, use of high performing seed varieties, organic fertilizer and improved farming techniques would help also to increase the total grains produced on irrigated land, and help assure domestic self-sufficiency.

In any event, a major increase in production of maize and sorghum can be accomplished with a vigorous extension effort supplemented to the extent possible, by favorable governmental price policy, governmental support of the extension effort and strengthening of applied research. It is also assumed that during the startup of these programs the nation's agricultural productivity would not be thwarted by a serious drought.

In addition, there are benefits from pulses and oil crop increases in production which are also part of the project. Various research centers are conducting research on both, and have identified potential high yielding varieties that can be used in crop rotation and intercropping. Also new varieties, particularly of oil seeds, will be introduced to help overcome national edible oil shortages as well as to furnish nitrogen fertilizer to the soil.

The estimated 25,000 farm families that would, progressively, be served by the project could be classified as subsistence farmers on the basis of their income from crop production. The cost of the project's extension component would be US\$ per farm family or, on the basis of the area presently cropped by small farmers, about US\$ per hectare for the investment period.

The project is consistent with GSDR current plans to launch a cash crop production program and is in line with Somalia's agricultural development objectives particularly with respect to:

- (a) self-sufficiency in basic food commodities;
- (b) reduction of income disparities;
- (c) improvement of the productivity and incomes of the poorest segments of the Somali population; and
- (d) strengthening of the institutions serving agriculture.

Increased crop production attributable to the Project would be primarily the result of improved extension and farm management services. Changes in cultural practices would be simple and would not initially involve increases in cash expenditure. Moisture conservation, row planting, increased and homogeneous plant population, and improved grain storage practices would be stressed. In later stage, farmers would be progressively introduced to seed dressing, plant protection, alternative cropping systems and animal traction. In this manner, farmers would be gradually guided in the selection of production practices that would be the most economic for them.

Food production in rainfed and irrigated areas is projected to increase as a result of increased productivity and the expansion of the area under crops. Sorghum is the major crop on rainfed farms, and maize the major crop on small scale irrigated farms. It is estimated that a few simple changes in production techniques would increase sorghum yields from the present average of 350 kg/ha to 500 kg/ha and maize yields from the present average of 875 kg/ha to 1,000 kg/ha. These yield increases are believed to be realizable over a period of five years if the project extension service succeeds in merely convincing farmers to have an optimum

plant population in their fields. The projected yields are well within field results already obtained by farmers in Somalia. Observed yields in 1977 (a good year) were between 300 and 1400 kg/ha for sorghum and between 600 and 2000 kg/ha for maize. This variation in yields cannot be attributed to varying use of marketed inputs, but rather to different soil conditions and cultural practices including land preparation, sowing techniques, and seeding rates. Animal traction would allow the average farm family to cultivate about 50% more land with the same labor force. This would bring the average size of cropped holdings from the present 5 ha to over 7 ha. Since suitable land would not be a constraint in the foreseeable future, this increase is believed to be a realizable objective and one that, if properly implemented, would not necessarily interfere with other development goals such as livestock production.

Sorghum presently accounts for about 55% of the cropped land, followed by maize, about 25%, and sesame, about 10%. The Project would put emphasis on the major crops - sorghum, maize and sesame, particularly in the early years. The following assumptions have been made for estimating the incremental production attributable to the strengthening of the extension service:

The simple improvements of production practices recommended would be adopted, on the average, by 3% of farmers per year during the first 3 years. This rate would increase to 5% for the succeeding 5 years and to 7% thereafter. At full development, by year 15, increases in yields per ha would have risen from 25 kg to 100 kg for sorghum, from 25 kg to 100 kg for maize, and from 10 kg to 70 kg for sesame. The yield increases would be progressive, resulting from successive technological improvements and would be achieved by an increasing proportion of the farm population.

In addition the increase of the cropped area through the use of animal traction would be introduced as early as possible (Stage I). It is assumed that this would result in a 25% increase in cropped area for those adopting animal traction. The expansion could not be greater because of the shortage of good crop land in certain areas. Yields used in estimating incremental production from the new acreage are the same as those assumed above.

Regional incremental production from small scale farms attributable to the project is summarize below:

Table T4: Incremental Production From Small Farms in Project

	<u>Minimum Input</u>	<u>Expanded Input</u>	<u>Maximum Input</u>	<u>Total</u>
	<u>in tons</u>			
<u>Year 3</u>				
Sorghum	600	1,300	-	1,900
Maize	275	1,500	-	1,775
Sesame	90	300	-	390
<u>Year 5</u>				
Sorghum	1,150	2,662	-	3,812
Maize	550	2,975	-	3,525
Sesame	180	588	-	768

These quantities are significant for a food deficient country such as Somalia. The estimates are believed to be conservative and achievable with an only moderate performance by the extension service. Under the above assumptions the production of the three major crops (sorghum, maize and sesame) would increase at the average rate of about 2% per year, which is lower than the rate of population growth. It is essential, therefore, that the above estimates be surpassed; this would not be difficult provided a strong and disciplined extension service is set up and a steady flow of yield increasing practices is developed.

Farming in Somalia is presently a low input/low output activity in which land and family labor are the major ingredients. The project would aim at increasing the output through better use of these resources. Farmers would thus be under no financial pressures and would only be asked to implement practices which can easily be explained to them in terms of labor savings or higher output per hectare. As their thrust in the project extension service develops, farmers would be introduced to practices, such as animal traction, that would, in expanded input stage allow them to exploit more land with the same labor force and, in maximum input stage allow them to obtain more output per hectare through purchased inputs such as insecticides, improved seeds and where applicable, fertilizers.

Most importantly the incremental production from small farms, if properly stored, would allow the average family to meet its basic food needs and to generate a marketable surplus. The project would

help farmers take full advantage of what they produce through adequate storage technology and access to the market. It is estimated that over half of the increased production would find its way into the market and would benefit urban consumers.

On an average rainfed farm with 5 ha under crops per year, farm income would increase from the present So. Sh. 1,500 to So. Sh. 2,200 with extension as the only additional input; to So. Sh. 2,500 with the introduction of animal traction; and to So. Sh. 3,700 with the introduction of marketed inputs. This would result in an increase in the return on family labor from the present So. Sh. 4 to about So. Sh. 10 per man day, which corresponds to the opportunity cost of labor in urban areas. Similarly, on an average irrigated farm with 3 ha under crops per year, farm income would increase from the present So. Sh. 1,600 to about So. Sh. 2,000 with extension as the only additional input; to So. Sh. 2,250 with the introduction of animal traction; and to So. Sh. 3,600 with the introduction of marketed inputs. The return on family labor would increase from the present So. Sh. 4.4 to So. Sh. 10 per man day. The figures above are derived from farm models which are summarize in tables T5 and T6:

Table T5: Farm Model (Rainfed)

	<u>Present</u>	<u>Improved Minimum</u>	<u>Improved Expanded</u>	<u>Improved Maximum</u>
Cropped Area (ha) <u>1/</u>	5	5	7	7
Sorghum	4	4	5	5
Pulses (intercropped with sorghum)	4	4	5	5
Other Crops	1	1	2	2
Yield				
Sorghum (kg/ha)	350	500	500	800
Pulses (kg/ha)	70	100	100	150
Value of Output				
Sorghum (So.Sh.75/100 kg)	1,050	1,500	1,875	3,000
Pulses (So.Sh.150/100 kg)	420	600	750	1,125
Other Crops	200	250	500	500
Total	<u>1,670</u>	<u>2,350</u>	<u>3,125</u>	<u>4,625</u>
Costs of Production				
Investment <u>2/</u>	-	-	400	500
Operating Cost <u>3/</u>	<u>200</u>	<u>200</u>	<u>200</u>	<u>400</u>
Total	<u>200</u>	<u>200</u>	<u>600</u>	<u>900</u>
Net Financial Return	1,470	2,150	2,525	3,725
Family Labor (Mandays) <u>4/</u>	360	360	360	360
Net Financial Return per ha	294	430	360	532
Net Financial Return per manday	4.1	5.0	7.0	10.3

1/ Total surface area, cropped in Gu and Der seasons.

2/ Ox-drawn implements depreciated over 3 years with oxen sold for meat and replaced every 3 years. At Stage Three farmers would also buy plant protection equipment.

3/ Including hand tools, seeds, insecticides.

4/ Labor available during the cropping seasons: the equivalent of 3 adults per family for 6 months at the monthly rate of 20 mandays for crops and 5 mandays for livestock.

Table T6: Farm Model (Irrigated)

	<u>Present</u>	<u>Improved Minimum</u>	<u>Improved Expanded</u>	<u>Improved Maximum</u>
Farm Area (ha)				
Area Cropped (ha) <u>1/</u>	3.0	3.0	4.0	4.0
Maize	1.5	1.5	2.0	2.0
Sesame	1.0	1.0	1.0	1.0
Other Crops	0.5	0.5	1.0	1.0
Yield (kg/ha)				
Maize	875	1,000	1,000	1,600
Sesame	400	500	500	600
Value of Output				
			So. Sh.	
Maize (So.Sh.75/100/kg)	985	1,125	1,500	2,400
Sesame (So.Sh.250/100 kg)	1,000	1,250	1,250	1,500
Other Crops	<u>300</u>	<u>300</u>	<u>600</u>	<u>1,200</u>
Total	<u>2,285</u>	<u>2,675</u>	<u>3,350</u>	<u>5,100</u>
Costs of Production				
Investment <u>2/</u>	300	300	700	700
Operating Cost <u>3/</u>	<u>400</u>	<u>400</u>	<u>400</u>	<u>800</u>
Total	<u>700</u>	<u>700</u>	<u>1,100</u>	<u>1,500</u>
Net Financial Return	1,585	1,975	2,250	3,600
Family Labor (Mandays)	360	360	360	360
Net Financial Return per ha	528	658	562	900
Net Financial Return per manday	4.4	5.5	6.3	10.0

1/ Total surface area, cropped in Gu and Der seasons.

2/ Oxen and oxen-drawn implements and irrigation related expenditures.

3/ Including hand tools, seeds, insecticides.

Recognizing that these crop production projections are based on assumptions built into the model, one of the major benefits from the impact project will be the opportunity to test under field conditions, the operational reality of the various minimum technical packages and the farmers acceptance and/or rejection of the recommendations. We will therefore have a firm base for designing a larger, more extensive, county wide project. The human resource development component, in terms of communications, farmer attitudes, Min Ag personnel policies and general approaches, is as important as the technical component. In the process of implementing the impact project, the necessary skills for building a strong nat ag ext service will be perfected. Further overall increases in rural productivity will also have spin off benefits as well for other sectors of the economy including agro-industry, distributive trades and transport, which will enhance economic well-being of the nation and individuals.

Greater opportunities for employment can be expected in these sectors and thereby reducing unemployment. Government earnings from the increased agricultural and non-agricultural productivity will additionally help relieve current budget and fiscal constraints to development.

Related Problems

The anticipated increase in crop yields will inevitably place some stress on GSDR transport and storage facilities. We expect however, that the added transport needed from farm gate to market will be provided through the expansion of Agricultural Development Corporation (ADC) trucking capacity and by private operators, who constitute the largest element of the transport sector. The project envisages the development and greater use of on-the-farm grain storage capacity with the ADC also providing additional storage to handle the increases in cereal production.

Access and farm-to-market tracks will need to be expanded to reach farms and market agricultural production. While this project recognizes this need it will look to the GSDR and the IBRD to develop these transport levels. The AID project was designed to be integrated with two bank projects for the Bay region which will provide feeder roads, shallow wells and infrastructure. In turn the bank is looking to AID to provide the supporting extension technical assistance for this region. The AID project with GSDR assistance will provide transport vehicles for US and Min. Ag. Agricultural personnel to implement the impact program

B. Social Soundness Analysis

A major thrust of the project will be directed toward improving yields among small subsistence farmers by means of an integrated package of inputs, extension supervision, and a regular monitoring of the adoption and use of the appropriate technology and cultural practices. All available evidence would suggest that farmers in the

areas are receptive toward agricultural improvements, have a capacity for producing more and placing more land under cultivation given adequate incentives and technical assistance. The overall project effort in assisting the small farmer will also give careful consideration to ensuring that assistance provided will be minimally disruptive to farm households and villages alike.

A national census has been conducted but so far only gross population figures have been tabulated. By rough estimate, between 40 and 50 percent of the nation's population lies within or immediately adjacent to the program areas. Upwards of 80 percent of the inhabitants of the program area are living in rural villages and engaged in semi-subsistence farming. Although population density throughout the country is not high, the interriverine/Bay region contain some of the higher density levels seen in Somalia (about 100 persons a square mile), which should make the areas a good starting point for assuring that the program will have a higher potential for visibility and for spreading in a relatively short time.

The data available for the project areas suggest that the model farm household has between 2 and 8 hectares of land and a per capita income of a \$100/year or less. Land under cultivation ranges from 1 to 100 hectares, but more than 90 percent of the farmers fall in the 2-8 ha. range.

The project seeks to improve production among small-scale subsistence farmers, mainly in the dryland farming areas of the Bay Region between the Shebelli and Juba rivers. There is a considerable institutional potential for development in the region and indications that in the past production has been inhibited by limitations placed on the amount of grain farmers were allowed to keep for their own use and on the low prices offered by government purchasing agencies. These constraints on production appear now to have been relaxed.

Although outside of the early impact project area a description of the attitudes and agricultural practices of the farmer in northwest region is germane to a fuller understanding of attitudes and environmental considerations affecting the Bay/interriverine region. In the northwest, cultivation is a fairly recent innovation. Influenced by the neighboring Oromo-speaking farmers of the Harar area (known locally as "Qottu"), pastoralists between Hargeisa and Borama have over the last hundred years gradually begun to adopt cultivation. Like their neighbors, they employ an ox-drawn plough and combine cultivation with livestock rearing. Indeed in this region of comparatively high rainfall, as in the Bay Region, cattle become an important element in the pastoral economy along with camels, sheep and goats. In this essentially mixed farming region, camels retain their value as prestige currency.

As early as the mid-1950's there was a good response to improvement schemes, including bunding and other measures, some based on self-help at village and village cluster level. Traditional kinship groupings remain strong and are supplemented by ties of neighborhood. A cluster of settlements, with populations as high as 30 adults,

share a common water-hole or pond which they excavate, maintain and guard against intrusion collectively. Within this range of connection, when required, assistance sought to muster work-parties for threshing and other tasks requiring cooperative effort were usually forthcoming. Physically, each settlement consists of a group of related heads of families with their wives occupying traditional nomadic houses (guuri) and enclosed within a common thorn fence which also includes pens for their flocks of sheep and goats. Household heads form an informal village assembly with usually at least one elder enjoying a position of influence. As self-help and other efforts by the Somali Government have demonstrated, there is clearly here a sound local institutional basis for positive development.

The same holds true in the Bay Region, despite the more placid character of its local population. Here cultivation by hand-hoe has been standard practice for centuries. The local population, speaking a distinctive dialect of Somali, to be taken into account in effective extension work, is of mixed origin. Being much more firmly localized than the northern cultivators, the population is more insulated and traditionally less susceptible to external influences.

Nevertheless, local units are more strongly delineated and provide a sound base for the project's extension work. Settlements here, again based on communally excavated and maintained water tanks, are generally larger than in the northwest. Village affairs are organized by the elders and collective tasks in cultivation, water management (for which a strict-code of practice exists), hunting, recreation and ritual assigned to parties of young men under the leadership of a youth of strong character (the Aw Barbar). Above the village level, decision-making is articulated by local "elders" (now called "Peace-Seekers") who are integrated into the provincial organization of the central government. Extension activities can be effectively channelled through these institutions and through the Orientation Centers of the official government party. These organs of innovation should prove an effective medium for successful implementation of the program, since they are specifically designed to secure grass-roots participation. Radio programs, appropriately designed songs and poetry, which are well established means of influencing opinion in Somalia might be usefully employed in the extension program

Additionally, discussions with farmers and extension staff and instructors at Farmer Training Centers in the project area have turned up no evidence to suggest an underlying reluctance on the part of small farmers to accept advice, participate in training programs, try new methods, or change their traditional practices when appropriate. To the contrary, farmers are depicted by training center staff and agricultural officials as being dissatisfied with receiving what they essentially consider to be old information and incomplete assistance. At the present time, there is a widespread receptivity toward improvement which should be tapped. Many of the widely held conceptions of peasant agriculture being tradition-bound clearly don't seem to apply

to farmers in these areas. Considering the current capacity of the Somali extension service, the farmers' unfamiliarity with the use of modern inputs and their insulation from institutional services, small farmers in the project area have demonstrated in the past that they can be relatively productive. There is every reason to believe that given the proper services, inputs, and incentives farmers will respond appropriately.

The importance of cultural factors should not be overestimated. In many cases it has been shown that no more than new knowledge, training, or resource access are necessary to "eliminate" many presumed cultural constraints. Nor should we underestimate the ability of small farmers to make dramatic changes if given the necessary risk protection, resources, and supervision.

As previously indicated, a large part of farmer's family provides the necessary labor for agricultural activities but some nonfamily are employed. There is thus the potential perhaps for employing more rural labor. In the short run, at least, there is also considerable potential in the program for retention of population in rural areas or at least arrest the drift to urban centers. However, the "pull" of urban living will continue to attract unless some of these advantages can be provided to the rural areas.

One of the specific aims of the program is to improve crop yields by the use of fertilizer.^{1/} The adoption of this practice should not encounter serious obstacles. Those cultivators who do not possess substantial livestock holdings, customarily allow nomads moving through the area to graze their stock on the stubble in the fields after harvesting. The farm test program is likely to have little disruptive effect on the farm household or in the village. All the evidence we have suggests widespread receptivity among farmers to agricultural improvement efforts, and so the underlying motivation appears to be there. In addition, though, participation will be voluntary, farmers won't be required to participate in any forms of social organization, no new unattainable resource demands will be placed on them, they will continue growing a crop they customarily plant, and no population displacement is involved. Nor are large numbers of individuals involved in any village. Local village leaders will initially be completely informed about the program, they will be routinely contacted for advice and kept up to date on the program's progress. It is expected that their involvement will minimize the risk of local resistance or apathy, which could materialize, as noted earlier. There are influential opinion leaders and groups and their

^{1/} Organic fertilizer in minimum technical package

support will be essential to ensure the project's success. In every respect the program will be established with the existing socio-cultural system.

Role of Women

It is apparent that women in Somalia, as in much of Africa, are vital to rural development. They make most of the household's sanitation and nutrition decisions, and, in agriculture, at least implement, if not make, many of the basic decisions related to crop and livestock production. They customarily perform the lighter cultivation tasks, such as weeding and helping in harvesting. They also look after the sheep and goats and fowls (where these are reared). These are areas in which they exercise a high degree of autonomy. Women also customarily play an important informal role in decision-making. They exercise much influence over their children, and sons have strong ties to their mothers. Polygamy, associated with wealth, and status, is common in the Bay Region. The first wife enjoys considerable authority vis a vis her co-wives. She customarily has charge of the family money-box and her house is the principal home. Co-wives do not normally live under the same roof. Each, with her children, forms a separate economic unit. Farmers customarily allocate separate farming and herding responsibilities to different wives. Similarly, an extended family or brother acts as a joint farming unit, each brother managing a separate production unit be it land, cattle herd, or camel herd.

Women exercise much more influence than is superficially apparent. The Somali Government is firmly committed to a policy of female emancipation and women have shown that they are ready to participate. Those in the Bay Region are already involved at the local level and can play an important positive role in the implementation of the program. This will be in full accord with their involvement at the local level in the People's Vigilante Corps (The Guulwaadayaal) which coordinates hygiene and welfare inputs at the district and sub-district level.

Incorporating women into project activities should not present a problem; and there is every reason to believe they will be active participants. Government leaders have indicated that women should participate more actively in the development of the nation, and the government has taken steps to give equal rights to women. This is reflected in educational enrollments where the portion of females has gone from 20 percent to 25 percent of total enrollment since 1970. In the 1974-1978 five-year Development Plan, the government indicated a need for expanded educational opportunities, both formal and non-formal, for women. At the present time, there are 16 female students in the Faculty of Agriculture, and 27 in Veterinary Medicine, and females are being nominated as candidates for overseas training.

C. Technical Analysis

Extension Services:

The Extension Service has been singled out by government and other funding sources alike as the agricultural institution most in need of transformation. Because of other priorities the extension and training service is only about 20 percent staffed overall at the present time. Few of the 78 District Agricultural Officers have had more than a short course in agriculture and there are no agricultural instructors assigned at the village or district levels. Much of the current staff is generally unprepared for its jobs from a technical point of view, much time is spent in administration rather than in the field, and back-up support for extension activities is negligible.

One of the peculiarities of the extension-education function in Somalia is that it is divided among various ministries and governmental agencies. Although extension within the Ministry of Agriculture is recognized formally as the extension service, extension-type activities are being carried out in the Ministry of Livestock Range and Forestry and the Department of Cooperatives, by the Banana Board, and on the Northwest Development Project. Coordination and cooperation among the various agencies performing extension functions are weak or non-existent.

Several underlying conditions have contributed to the current state of extension-education in the country. First, it is widely assumed that there is little in the way of innovations or new information to extend to the farmer. This feeling is prevalent in Farmer Training Centers, in governmental agencies, and among extension personnel themselves. In-country research, though, would suggest that there are innovations which could be recommended and used. It is obvious that the linkage between research and extension is not very strong. Second, there is a desperate shortage of extension personnel. A conservative estimate puts the ratio of extension staff to farmers somewhere between 1 to 2,000 and 1 to 8,000 farmers. Considering the level of education and training of extension staff, their distribution across regions, and the amount of time spent with administrative matters, these ratios are unrealistically low for most areas. Third, extension-education is generally piecemeal and lacking in integration. There has been little attempt to administratively integrate different parts of the agricultural support institutions. Crops and livestock, for example, are combined on most farms in the project area, yet each activity falls under a different ministry.

The current extension-education thrust in Somalia can thus be characterized as being critically understaffed, fragmented, inadequately trained, and poorly supported from both an in-service and materials point of view. Clearly, a major effort will have to be made to correct these deficiencies if extension is to perform its intended role in

bringing the nation to self-sufficiency in food production.

It would be premature to suggest a model extension program for Somalia at this time. For this reason the first phase impact activity will be followed closely so that as the farmers "learn by doing" the cooperating extension personnel may also learn by doing so they will find what is essential to improve the necessary services. Likewise, the first phase experience will be useful in refining the training and logistics elements of the project. It is not meant that the project will be experimental but it should break from the traditional approach. It will take into account the social and cultural characteristics of the Somali rural people and work within this framework. Farmers by nature are conservative people when they must survive in a high risk producing area subject to periodic droughts or floods. They will, however, take risks when they feel they have the support of their friends, neighbors and government. This program will attempt to marshall these resources in addition to the normal inputs of improved seed, and improved cultural practices.

Since commercial fertilizers are out of their reach financially, crop rotations using green manures will be tried. One thing that Somalia does have in an abundance are human resources and land not being cultivated. These components must be put together for greater production with a minimum of outside resources. During the impact phase, various combinations of human and natural resources will be mixed to see what is the most appropriate. The successful features will be expanded and failure eliminated. An in-depth evaluation plan will be devised starting from an established baseline and measuring the success or failure of the various program aspects. Adequate procedures will be incorporated for making annual adjustments. The project is designed to be flexible and innovative. It exemplifies training and extension case in a framework of "learn by doing".

While the implementation approach must break from the traditional and be tailormade to Somali conditions, the overall objectives of AID assistance project to Somali extension, training and research will be:

1. To assist the Somali Government in establishing a National Extension Service network to support services necessary to increase food production among small farmers. This is to be carried out through a phased approach of which the present project is the initial phase.
2. To improve and develop comprehensive educational programs at the training centers in Bonka, Genale and elsewhere for extension personnel and farmers.

3. To assist in development of the extension and training program at the Rangeland Center at Burao.
4. To establish a communications system to assist with the training of extension staff by enhancing communication, internally, and externally, and by developing instructional aids, materials and brochures.
5. To provide necessary equipment in the project areas.
6. To ultimately develop the initial extension operation into the National Extension Service under Somali direction.
7. To demonstrate the effectiveness of a combined extension, training and applied research.
8. To provide academic and technical training for selected Somalis who will have key roles in the project.

Agronomic

Sorghum and maize offer outstanding opportunities for increasing the grain production needed within the agricultural resource potentials found in Somalia. The large area of productive soils and the rainfall needed provide the basis for intensifying a rainfed agriculture, and soils and water are available for expanding the irrigated maize production. While these production potentials exist, they have remained latent.

Past experience and evidence from other semi-arid countries indicates that significant yield increases are possible in both dryland sorghum and irrigated maize. The experiences of the University of Wyoming in developing and extending a minimum package giving yield increases of some 250 kg/ha. shows that these packages are highly acceptable to the farmers. Further increases both in yield and area cropped are possibly by incorporating animal traction into the package so that improved water conservation methods are possible. Higher level technical packages including imported fertilizer, pesticides, etc., must be more carefully tested and analyzed from both technical and economic perspectives prior to promotion.

The thrust of the project is to increase production in the Bay area of Somalia through the development of effective, small farmer oriented extension methods with a heavy emphasis on farmer training. Project activities are expected to provide relevant field experience and the development of a nucleus of area-specific extension staff that will eventually tie back into the gradually evolving national extension system.

The project will be linked to the existing national research system for support in carrying out applied research both at the existing research faculty as well as on the farmer's fields using the minimum resources approach. Farmer production problems will be identified and fed back into the research system for solutions.

The project activity will place an emphasis on the following:

1. Development of improved practices which can be feasibly applied by small farmers possessing limited resources and skills.
2. Better management of resources already at the disposal of farmers enabling them to take specific actions to improve their own situation. Working for better management of these existing resources will lay the ground work for introduction of improved technology if and when a dependable supply becomes available to farmers in the area.
3. Concentrated Farmer Training activities.
4. Active farmer participation in field trials and demonstrations.
5. Close coordination between the National and International research systems in design of local field trials.
6. Tying of area specific activities developed into an evolving national extension system.

The minimum technical package to be used as the initial thrust of the extension program draws heavily from the experience of the Wyoming program. It will include "no cost" improvements such as seed selection by the farmer, improved seedbed preparation, improved weeding, increased plant density, etc. The more advanced minimum package which will be promoted in years two and onward after initial testing will incorporate animal traction and emphasize moisture conservation practices, crop rotations, increased use of organic fertilizers and improvements to on-farm storage in addition to the basic minimum package practices. A doubling of the incremental production over the basic minimum package should be possible.

These packages have been closely analyzed by the FAO preparation team and the IBRD appraisal teams for the Bay Region Project and they fully concur with their validity as a starting point for the intensification program.

The adaptive research program will provide the enlarged extension service with a tested and demonstrated technical packages, adapted to dryland cropping conditions in the Bay Region. The program will focus initially on testing at the Bonka research station and at limited farmer test plots. As the extension service begins to establish close relationships with key farmers the testing will be moved increasingly to farmers fields.

The following are the main topics of the adaptive research programs, with initial emphasis on those which relate to low-cost opportunities to increase production.

- Moisture conservation. Comparisons of yields under traditional practice with light hoeing of the soil surface and bunding of all naturally occurring shallow channels.
- Improved seeds. Type selection from the mixed local varieties, initially based on different seed colours, followed by the introduction of improved screened varieties.
- Increased populations. Yield comparisons under traditional practice of around 8-10,000 with populations up to 40,000. This will be combined with row planting and improvements in weeding practice through increased competition from the sorghum as a result of higher populations.
- Harvest and Post Harvest Practices. Considerable losses occur in the village pit stores. Their are considerable benefits to be realized by minor improvements to the "pit-stores" and harvest timing and methods.
- Organic Fertilizers. Continuous cropping has led to decreased fertility overtime. Considerable benefits can be realized by encouraging the reincorporation of both plant and animal residues to maintain fertility.

- Timely operations. Demonstration of the effects of planting at different periods and the effect on pest incidence.
- Crop rotation. Introduction of a cash crop into the present subsistence level farming and the evaluation of crop rotation in maximizing total farm production at limited levels of farming skill.
- Livestock/Bullock Power. In incorporating a livestock component as appropriate to the improvement of a small farmer animal/crop agriculture system, to include better husbandry practices, making the best use of animal manures, forage production, etc., and the use of bullock power to supplement human energy in carryout farming operations. Simple bullock drawn implements will be evaluated for such things moisture conservation, seeding, weeding and transport.
- Stover conservation. Demonstrate and evaluate the collection of stover immediately after harvest and carry out stem borer counts.
- Mechanization techniques. Demonstration of land preparation, row seeding and combined harvesting on the seed production unit at Bonka, presently being equipped under FAO/SOM/74/007, Seed Production and Certification Project.
- Quantification of present practice. During the course of farm visits by extension workers statistics will be collected regarding use of family and hired labour, farm size and land use, total and type of crop planted, attitude to risk, sources of off-farm income, present planting dates, crop spacing and livestock numbers owned.

Beginning in year three of the project tests will be begun on the more advanced technical package at the Bonka research station.

Livestock

Effective utilization of soil and water resources will require integration of livestock and field crops and an agriculture production system. Conscious integration of livestock into a farm system will provide a means of converting crop residue, stubble and other crop wastes into food products for human use. Better livestock management, primarily through the production and control of manure

can be an effective tool in managing soil fertility, especially important in semi-arid tropical areas where soils tend to be low in organic matter and where soil tilth is a serious problem. Livestock can also be an effective user forage resources produced in termingled non-arable crop lands.

The minimum technical package will include adaptive research to demonstrate the value of livestock in the agriculture production system. This will involve studies on (1) utilization of crop aftermath, stubble and plant residues by livestock; (2) livestock husbandary and production under mixed farming conditions; (3) livestock management schemes utilizing crop land and non-arable lands to provide year around feed resources for grazing livestock; and (4) evaluation of the contribution of livestock to the agriculture production system.

These adaptive research studies will be low-cost and depend primarily upon the ingenuity and imagination of the livestock production specialist and the production agronomist to devise techniques to more effectively utilize livestock within the scope of this project. The livestock adaptive research aspects of the project will be closely coordinated with the extension function so that experiences and information can be quickly transferred to the farms.

Engineering

The majority of the construction activities will be the putting in place of prefabricated buildings. Given the lack of building materials and skills in Somalia, the purchase of these units appears to be the preferred solution. An AID engineer has reviewed plans for installation of these units and concurs in their acceptability and feels that sufficient local capability exists for preparing footing and installing the self-contained units, although REDSO engineers will be required to review and approve the final foundation design prior to the start of construction.

The minor rehabilitation works required on offices and classrooms at Baidoa and other research and training centers can be performed by local contractors.

The AID engineer has recommended to the AID representative that the requirements of section 611(a) have been met.

D. Environmental Analysis

The biological transformation involved in agriculture and livestock production are characterized by extremely fragile balances. These relationships can deteriorate and be permanently destroyed if

proper care is not provided. The activities to be developed as components of this project generally are either protective or will enhance the quality of the environment.

The cultural and tillage practices associated with the sorghum and maize production project elements will improve soil tilth and fertility and improve the water holding capacity of these soils, thus, minimizing erosion.

Water is the life blood of intensive agriculture in a dry land setting. The project envisages assistance to small farmers and cultivators to make more efficient use of water on individual plots. This could include development of improved catchment and distribution methods to help ensure higher moisture retention in soils. These conservation methods will in addition increase the availability of water resources for human and animal consumption as well as have a positive environmental impact.

The full development and control of the Shebelli and Juba rivers, which is beyond the scope of this project, is expected to be addressed by other external donors. The use of river waters for production programs under this project will employ existing irrigation systems, providing simple technological improvements and thus will have a negative environmental impact.

The above described agricultural production and management practices proposed in this project will have an overall favorable impact on the environment and contribute to the well being of the Somali people. (See Annex IV for Initial Environmental Examination).

The minimum package approach used in the project does not rely on use insecticides, pesticides and chemical fertilizers but rather emphasizes use of existing organic resources and stresses the importance of managing these resources effectively. More advanced packages are not planned until later phases of the program at which time risk/benefit analyzes will be done.

E. Financial Analysis

U.S. financed costs are based on seven technicians at a cost varying from \$60,000 per person year to \$120,000 per person year depending on education and experience levels. Short-term consultants (50 person months) are estimated at \$12,000 per person month. Civil construction costs were derived by a REDSO engineer based on supplier quotes and discussions with local contractors. Commodity prices are based on catalog prices.

Of the total project cost of over \$11 million, AID is providing \$5,050,000 or less than 50% of which 72% is foreign exchange costs. The GSDR is providing a sizeable contribution although only some \$2 million is in the form of recurrent costs with the remainder being existing capital infrastructure and already budgeted operating costs.

Analysis of the Somalia National Budget indicates that approximately five percent of total is appropriated for the Ministries of Agriculture and Livestock. In addition, special appropriations are included in the National Budget for development projects. For FY 78 the amount budgeted approximates \$14,500,000. Even with the GSDR austerity program of the past two years the number of technicians within the subject ministries rose from 1,716 to 1,839. It is estimated that the National Extension Service will employ approximately 400 technicians. Many of these positions will be filled by reassignment of personnel among the ministries, as well as employing new graduates from secondary agricultural schools and the Faculties of Agriculture and Animal Husbandry.

Since the GSDR has placed highest priority on the increased production of food crops and has concurred with the design of this project, namely, the development of the National Extension Service, it would appear that the GSDR can absorb the additional recurrent costs. The following tables show that personnel, commodities, and operating costs are the only recurrent expenditures. This amounts to \$5,000,000 for the life of the program which is considered financially feasible.

SUMMARY
FINANCIAL PLAN
\$000

<u>COMPONENT</u>	<u>FX</u>	<u>L.C.</u>	<u>TOTAL</u>	<u>HOST COUNTRY</u>	<u>PROJECT TOTAL</u>
Technical Staff	1483	873	2356	1487	3843
Training/Salaries	467		467	203	670
Commodities	454	87	541	500	1041
Operating		75	75	2500	2575
Civil Works & Land	603	170	773	1500	2273
Contingency	599	239	838	468	1306
TOTAL	3606	1444	5050	6658	11708

AID FINANCED INPUTS 000 DOLLARS

COMPONENTS	YEAR 1			YEAR 2			YEAR 3			TOTAL		
	L.C.	F.X.	Total	L.C.	F.X.	Total	L.C.	F.X.	Total	L.C.	F.X.	Total
TECHNICAL ASSISTANCE												
LONG TERM												
CHIEF OF PARTY MANAGEMENT	40	160	200	60	-	60	60	-	60	160	160	320
EXTENSION TRAINING/COMMUNICATION	30	130	160	50	-	50	50	-	50	130	130	280
EXTENSION SUPERVISION	30	130	160	50	-	50	50	-	50	130	130	280
EXTENSION AGRONOMIST (2)	40	160	200	60	-	60	60	-	60	160	160	320
CROP PRODUCTION SPECIALIST	20	80	100	30	-	30	30	-	30	80	80	160
EXTENSION PLANT PROTECTION SPECIALIST	20	80	100	30	-	30	30	-	30	80	80	160
SHORT TERM CONSULTANTS												
STUDIES (BASELINE AND EVALUATIVE) (20 pm)	-0-	185	-	-	-	-	-	15	15	-0-	200	200
TECHNICAL SUPPORT (20 pm)	-0-	190	190	-	-	-	-	10	10	-0-	200	200
OTHER SHORT TERM (10 pm)	-0-	110	110	-	-	-	-	10	10	-0-	100	120
TOTAL T.A.	180	1230	1410	280	-	280	280	30	310	740	1260	2000
INCLUDING INFLATION AT 8%	194	1445	1639	327	-0-	327	352	38	390	873	1483	2356
TRAINING												
LONG TERM PARTICIPANTS (12)	-0-	72	72	-0-	144	144	-0-	144	144	-0-	360	360
SHORT TERM SPECIAL (20 pm)	-0-	10	10	-0-	40	40	-0-	10	10	-0-	60	60
TOTAL TRAINING	-0-	82	82	-0-	184	184	-0-	154	154	-0-	420	420
INFLATED AT 5%	-0-	86	86	-0-	203	203	-0-	178	178	-0-	467	467
COMMODITIES												
VEHICLES (7)	-0-	85	85	-0-	-0-	-0-	-0-	-0-	-0-	-0-	85	85
AGRICULTURAL EQUIPMENT	-0-	50	50	-0-	20	20	-0-	5	5	-0-	75	75
OFFICE EQUIPMENT INCLUDING RADIO	-0-	100	100	-0-	-0-	-0-	-0-	-0-	-0-	-0-	100	100
AGRICULTURAL INPUTS	15	-0-	15	15	-0-	15	15	-0-	15	45	-0-	45
SPARE PARTS at 25%	4	60	64	4	5	9	4	1	5	12	66	70
SHIPPING AT 25%	5	75	80	5	6	11	5	1	6	15	82	97
TOTAL COMMODITIES	24	370	394	24	31	55	24	7	31	72	408	408
INFLATED AT 10%	26	407	433	29	38	67	32	9	41	87	464	541
CIVIL WORKS												
HOUSES INCLUDING FURNISHINGS (8)	-0-	525	525	-0-	-0-	-0-	-0-	-0-	-0-	-0-	525	525
LOCAL PREPARATION	60	-0-	60	-0-	-0-	-0-	-0-	-0-	-0-	-0-	60	60
MISC. REHABILITATION	30	-0-	30	80	-0-	50	-0-	-0-	-0-	80	-0-	80
TOTAL CIVIL	90	525	615	50	-0-	50	-0-	-0-	-0-	140	525	665
INFLATED AT 15%	104	603	707	66	-0-	66	-0-	-0-	-0-	170	683	773
OPERATING COSTS												
FUEL AND UTILITIES, ETC.	25	-0-	25	25	-0-	25	25	-0-	25	75	-0-	75
TOTAL PROJECT COSTS												
TOTAL PROJECT COSTS	349	2541	2890	447	241	688	409	225	634	1205	3097	4212
CONTINGENCY AT 20%	69	294	363	168	91	259	131	85	216	368	470	838
GRAND TOTAL COST	418	2835	3253	615	332	947	540	310	850	1573	3477	5050

F. Evaluation Plan

Project components will be evaluated by means of several verification procedures, utilizing different performance criteria.

The sorghum demonstration test program involving farmers in rainfed areas, will be one of the major evaluation efforts. The basic set of data that will be used in this evaluation will be obtained from an initial baseline survey of participating and non-participating farmers. Follow-up surveys are planned. The first, conducted after two years of the program will provide an evaluation in progress and be used to provide a preliminary measure of success as well as to suggest any need for modification in program conception or delivery. The second followup will provide the basis for evaluating the overall socio-economic changes experienced by farm households and generated over time by the development effort. Data from a matched sample control group of farmers will permit an assessment of impact directly attributable to the test program. Evaluation of overall socio-economic impact will employ several criteria: yield level and size of farm comparisons; adoption and use of required inputs and practices; income changes; technology and livestock inventory; and an inventory of consumer goods, in addition to other socio-economic indicators.

Evaluation of extension-education efforts will proceed at several levels and employ several criteria. Extension staff will be evaluated formally by project staff and informally by village leaders and farmers in the test program. Performance criteria will be: level of contact with farmers, ability to operate independently, ability to work with crop and livestock production, etc.

Overall evaluations of sorghum, maize and oil seed production will be based on the extent to which projected goals have been achieved at the end of the three-year period. These have been specified in earlier portions of the report. The data used for these evaluations will be generated from annual reports and statements of accounts published by the Somali Government (see Evaluation Plan Annex for further details).

G. Implementation Arrangements

Recruitment

The project was developed with the aim of providing immediate assistance to Somalia, specifically in Bay/Interriverine region of the country, to significantly increase cereal and oil seed production. It will be technical assistance intensive impact program focussing on relieving the principal production constraints of the small farmer in the project area. The project will be integral element of the planned GSDR crash production program in the Bay/Interreverine region commencing

before the GUP cropping season (March/April). It will be essential that AID technical assistance be provided and in place in Somalia as early as possible, preferably no later than January 1979. This early arrival schedule is necessary to provide minimum amount of exposure for U.S. technicians to familiarize them with the tasks related to environmental cultural and technical considerations associated with assisting the GSDR implement the planned crash crop production program.

The short lead time for the recruitment and deployment of U.S. technicians will require some modification of usual agency contracting procedures. The nature and scope of the project does not fit into the normal institutional contract mode. Therefore, it will be necessary to recruit technical staff on the basis of personal services contracts or use of specialized agencies not necessarily concerned with longer term institution development. These agencies could include firms such as Experience Inc., American Assistance Corp., Development Alternatives, Inc., Pacific Consultants and others. Whatever recruitment mode is selected, individuals recruited will have to meet multi-purpose professional disciplines already described, will need to be largely self-supportive logistically, be able to live and work in remote areas of the country, and be able to relate to small subsistence farmers, their families, and GSDR agricultural personnel and be reasonably robust to adjust to a generally harsh rural environment. The technicians recruited need not possess advance agricultural degrees, except possibly the team leader, but must have technical competence in the disciplines described and have experience in working with small farmer production schemes preferably overseas. Individuals with experience in working in rural Somalia in the agricultural sector as volunteers would be ideally suited to staff the project.

AID

AID financing of individual or institutional contracts could be handled by AID contracting procedures or directly by host country contracting. To the extent possible logistic support will be provided by the USAID mission assisted by the host country. The USAID and the host country will provide overall direction in the execution of the project. Project evaluation procedures have been previously described in the paper. AID will finance overseas, both long term and short term academic and technical training. Major emphasis will be placed on in-country training at existing Somalia academic/farmer training institutions and on the farm and village locations. These programs will be directly and indirectly financed by AID through the project. In-country training will be conducted in Somalia using U.S. technicians provided by the project. In other cases personnel who have been identified by the GSDR and the USAID project manager as having a need for overseas training will be programmed and

budgeted. For budget estimation, there will be 20 person months of specialized training in the U.S. and 12 persons will need to complete advanced degrees in the U.S.

In addition to training the project will be supported by a modest but essential equipment component. The importance of prompt and expeditious procurement and delivery cannot be over emphasized. A.I.D. financed equipment will be procured through USAID using purchase orders and PIO/C procedures to expedite procurement and eliminate long delays associated with regularly employed AID procurement practices. USAID would plan to schedule delivery of project commodities to arrive at the same time as U.S. technicians.

Government of Somalia Democratic Republic

In order to satisfactorily accommodate the implementation and execution of this project, several categories of inputs must be provided by various agencies representing the Government of Somalia Democratic Republic. The most important and demanding input to be provided is personnel. The objective in such project assistance is to enable Somali people to serve their nation in handling all programs without expatriate involvement. In order to do this, it is recognized that several capable people must be released from their current responsibility to serve in new roles with the expatriate counterparts, and as training agents. Some of these people will be trained in formal programs in the U.S. and others will receive on-the-job training experience in Somalia.

Several levels of expertise and experience will be needed within the Somali personnel. The training and development of Somali personnel will be carried out to minimize the absence of key personnel from Somalia for an extended period of time. However, a considerable number of individuals will need to complete secondary agricultural training in Somalia and others will need to complete specialized formal training in Somalia in order to provide instructors for the extension training centers and to provide extension agents. It is imperative that once these people have received the benefit of these training experiences they be assigned and encouraged to continue with the same organizational units. The changing of experienced and qualified persons to other activities is demoralizing and can jeopardize the forward thrust of the program. Thus, the Somali Government agencies will need to provide these persons with competitive salaries, amenities, and recognize merit performance.

The GSDR will also finance the recurring and development costs of the project from their regular or development budget. It is estimated that the total GSDR life-of-project contribution will amount to U.S. \$ 6.5 million.

H. Conditions, Covenants, Negotiating Status

There are a number of bilateral and international agencies engaged in supporting the GSDR's development efforts in the Agricultural/Livestock sectors. These include Kuwait, Arab Fund, Saudi Arabia, China, EEC, FRG, IBRD, and UNDP. Kuwait is financing a rangeland/livestock development program in the northeast. The EEC is assisting in the development of an irrigation project at Saco Wen in the Middle Juba Valley, south of Bardera. The FRG and Kuwait are planning to support a similar project at Magambo, south of Gelib. At Fanole, north of Gelib, the Chinese have taken over from the Soviets the financing and construction of the first phase of a 48,000 hectare irrigation program which will include a barrage, canals, and a small power facility. Abu Dhabi is also supporting a sugar development scheme on the Lower Juba below Giamama.

By far the most active single international agency engaged in planning and implementing agricultural development projects in Somalia is the IBRD. In the northwest the IBRD is financing the implementation of an integrated crop production scheme as well as the Trans-Juba livestock development project in the extreme south. The IBRD is also in the appraisal phase of the proposed Central Rangeland Project and will be looking for co-financing. The Bank has two other proposed agriculture projects which will also need supplementation donor financing--the Extension and Farm Management Training Project and the Bay Region Agricultural Development Project. It is the latter two proposed agriculture projects which are of special interest to this PP because USAID and IBRD project objectives are parallel and we envisage project activities taking place in the same regions of the country.

Consequently, this Project Paper was developed taking into account the objectives of the IBRD proposed agricultural projects and the Central Rangeland project. The IBRD appraisal mission's reports on all three projects were part of the resource material provided the AID design team. An AID technician was a member of the IBRD Farmer Training and Extension project appraisal mission and the AID design team had also an opportunity to meet with the Bay project appraisal mission while the latter was in Somalia. Frequent consultations between the USAID Mission and the IBRD Resident Representative and the GSDR were maintained prior to the development of this PP and during preparation to ensure the closest possible collaboration and cooperation between all interested parties.

It was generally agreed since the IBRD would need co-financing for all three of their proposed projects and the fact that both IBRD and AID objectives in the agricultural sectors were parallel, AID would consider providing a part of the technical elements associated with the Bank projects. The GSDR has agreed to this arrangement. It

was also agreed that at the appropriate time both AID and the IBRD would consult further to determine specific areas of interest in terms of achieving agricultural objectives in the proposed IBRD and AID programs. We propose to initiate these further discussions at the conclusion of the AID PP Review.

Inadequate trained manpower has been identified as a major constraint in the development of the Agricultural and Livestock Sectors. A major objective of this project is to provide the needed manpower through training in service, in country, in third countries and the U.S. A good deal of the in-service training will be directed toward improving the effectiveness of GSDR personnel already employed, particularly field staff. At the present time the Ministry of Agriculture has an inadequate number of extension personnel; many will require additional training and or retraining, both in Somalia and abroad. However, we anticipate a need for approximately 400 trained personnel to adequately staff the National Extension Service, the overall objective of this project. This number is based on one extension officer for every five villages. There are approximately 2,000 villages in Somalia to be assisted by the extension service.

This new group of agriculturalists will have to come from existing Somali academic institutions. The Faculty of Agriculture has graduated 28 students this year and expects to prepare 40 students annually for agricultural vocations from 1979 onward. In addition, the Agriculture Secondary School, another source for staffing of the extension service, is expected to produce 60 graduates yearly. There are also other institutions such as Veterinary Faculty of the University, the Animal Health School and others which will also be preparing potential candidates for service in the Agricultural/Livestock Sectors. We believe therefore that GSDR will be in a position to supply the necessary manpower for training that will be required to implement this project.

Providing adequate logistic support for project technicians will have to be addressed at an early stage in project implementation. The project envisages that the majority of the technicians will be stationed in a number of rural centers outside of the capital city. A system will have to be devised to meet essential project related support requirements and provide other supplies needed to maintain technicians and their families in the field. Satisfactory housing will have to be found or built, and power and water supplied.

The financial assumptions in the paper and the supporting tables in the annexes were based on supplying prefabricated housing to be erected in the field on concrete slabs or footings. This approach was judged to be the most efficient in terms of delivery time and the

availability of the construction materials or lack of it in Somalia. Qualified local construction contractors are available for the on-site work to be done. The prefabricated units will come equipped with furnishings and appliances. Where the local power proves to be inadequate, generators will be installed and in case of water shortage additional water supplies will be provided as needed. We would expect to use the country's established communications system, but as is the case with some GSDR agencies now it may be necessary to install an independent radio/telephone service to maintain field contact.

The USAID has proposed to establish a separate logistic support project to service contract personnel in the field. This approach, with appropriate variations will be relied upon principally to take charge of procurement functions, regular mail service, non-project related transport, maintenance and other necessary support activities. Similar logistic support functions have already been established for field personnel implementing other donor financed projects in remote areas of the country. The USAID contractor-support project will take advantage of the experience gained from these efforts in determining the most effective approach to provide essential services.

Covenants: GSDR Financial and Personnel Support: The project envisions substantial contributions from the GSDR in support of the project. Its contribution will take the form of regular and development budget subventions of approximately US\$6.5 million for the three year life of the project. The Ministry of Agriculture 1978 recurrent budget totals \$13.6 million while an additional \$12.4 million is available from the 1978 development budget. It is partly from these sources that the GSDR financial contribution in support of the project will come. Other support will be provided in kind; i.e. existing facilities, training institutions, and the services of MOA personnel.

It will be essential however that a clear commitment be obtained from the GSDR that suitable MOA personnel will be assigned to participate in the implementation of the project and to serve as counterparts to U.S. project technicians. A further requirement would be a GSDR agreement to identify appropriate staff or new-hire personnel to be considered for advance training and in-service instruction during the life of the project.

While we have received informal assurances that the GSDR will provide the financial, material and personnel support required for the project, we would want to incorporate this understanding in the project agreement. We believe a GSDR undertaking of this nature would be compatible with the financial resource expectations of the GSDR and the current output of suitable candidates from government institutions.

ANNEX I

COUNTRY, PROJECT, STATUTORY CHECKLISTS

9C(1) - COUNTRY CHECKLIST

Listed below are, first, statutory criteria applicable generally to FAA funds, and then criteria applicable to individual fund sources: Development Assistance and Security Supporting Assistance funds.

A. GENERAL CRITERIA FOR COUNTRY

- | | |
|---|--|
| <p>1. <u>FAA Sec. 116.</u> Can it be demonstrated that contemplated assistance will directly benefit the needy? If not, has the Department of State determined that this government has engaged in consistent pattern of gross violations of internationally recognized human rights?</p> | <p>1. This project will directly benefit the poor rural population of Somalia.</p> |
| <p>2. <u>FAA Sec. 481.</u> Has it been determined that the government of recipient country has failed to take adequate steps to prevent narcotics drugs and other controlled substances (as defined by the Comprehensive Drug Abuse Prevention and Control Act of 1970) produced or processed, in whole or in part, in such country, or transported through such country, from being sold illegally within the jurisdiction of such country to U.S. Government personnel or their dependents, or from entering the U.S. unlawfully?</p> | <p>2. No.</p> |
| <p>3. <u>FAA Sec. 620(a).</u> Does recipient country furnish assistance to Cuba or fail to take appropriate steps to prevent ships or aircraft under its flag from carrying cargoes to or from Cuba?</p> | <p>3. Somalia has broken all relations with Cuba.</p> |
| <p>4. <u>FAA Sec. 620(b).</u> If assistance is to a government, has the Secretary of State determined that it is not controlled by the international Communist movement?</p> | <p>4. Yes.</p> |
| <p>5. <u>FAA Sec. 620(c).</u> If assistance is to government, is the government liable as debtor or unconditional guarantor on any debt to a U.S. citizen for goods or services furnished or ordered where (a) such citizen has exhausted available legal remedies and (b) debt is not denied or contested by such government?</p> | <p>5. No.</p> |
| <p>6. <u>FAA Sec. 620(e) (1).</u> If assistance is to a government, has it (including government agencies or subdivisions) taken any action which has the effect of nationalizing, expropriating, or otherwise seizing ownership or control of property of U.S. citizens or entities beneficially owned by them without taking steps to discharge its obligations toward such citizens or entities?</p> | <p>6. No.</p> |

- A
7. FAA Sec. 620(f); App. Sec. 109. Is recipient country a Communist country? Will assistance be provided to the Democratic Republic of Vietnam (North Vietnam), South Vietnam, Cambodia or Laos? 7. No.
 8. FAA Sec. 620(i). Is recipient country in any way involved in (a) subversion of, or military aggression against, the United States or any country receiving U.S. assistance, or (b) the planning of such subversion or aggression? 8. (a) No.
(b) No.
 9. FAA Sec. 620(i). Has the country permitted, or failed to take adequate measures to prevent, the damage or destruction, by mob action, of U.S. property? 9. No.
 10. FAA Sec. 620(i). If the country has failed to institute the investment guaranty program for the specific risks of expropriation, inconvertibility or confiscation, has the AID Administrator within the past year considered denying assistance to such government for this reason? 10. No.
 11. FAA Sec. 620(o); Fishermen's Protective Act, Sec. 5. If country has seized, or imposed any penalty or sanction against, any U.S. fishing activities in international waters,
 - a. has any deduction required by Fishermen's Protective Act been made? 11. (a) No.
 - b. has complete denial of assistance been considered by AID Administrator? (b) No.
 12. FAA Sec. 620(a); App. Sec. 504. (a) Is the government of the recipient country in default on interest or principal of any AID loan to the country? (b) Is country in default exceeding one year on interest or principal on U.S. loan under program for which App. Act appropriates funds, unless debt was earlier disputed, or appropriate steps taken to cure default? 12. (a) No.
(b) No.
 - *13. FAA Sec. 620(s). "If contemplated assistance is development loan (including Alliance loan) or security supporting assistance, has the Administrator taken into account the percentage of the country's budget which is for military expenditures, the amount of foreign exchange spent on military equipment and the amount spent for the purchase of sophisticated weapons systems?" (An affirmative answer may refer to the record of the taking into account, e.g.: "Yes as reported in annual report on implementation of Sec. 620(s)." This report is prepared at the time of approval by the Administrator of the Operational Year Budget.* 13. N/A

* Upward changes in the Sec. 620(s) factors occurring in the course of the year, of sufficient significance to indicate that an affirmative answer might need review should still be reported, but the statutory checklist will not normally be the preferred vehicle to do so.) *

- | | |
|--|---|
| <p>14. <u>FAA Sec. 620(t)</u>. Has the country severed diplomatic relations with the United States? If so, have they been resumed and have new bilateral assistance agreements been negotiated and entered into since such resumption?</p> <p>15. <u>FAA Sec. 620(u)</u>. What is the payment status of the country's U.N. obligations? If the country is in arrears, were such arrearages taken into account by the AID Administrator in determining the current AID Operational Year Budget?</p> <p>16. <u>FAA Sec. 620A</u>. Has the country granted sanctuary from prosecution to any individual or group which has committed an act of international terrorism?</p> <p>17. <u>FAA Sec. 666</u>. Does the country object, on basis of race, religion, national origin or sex, to the presence of any officer or employee of the U.S. there to carry out economic development program under FAA?</p> <p>18. <u>FAA Sec. 669</u>. Has the country delivered or received nuclear reprocessing or enrichment equipment, materials or technology, without specified arrangements on safeguards, etc.?</p> <p>19. <u>FAA Sec. 901</u>. Has the country denied its citizens the right or opportunity to emigrate?</p> | <p>14.</p> <p>15. Somalia is not in arrears in its U.N. obligations.</p> <p>16. No.</p> <p>17. No.</p> <p>18. No.</p> <p>19. No.</p> |
| <p>B. <u>FUNDING CRITERIA FOR COUNTRY</u></p> | |
| <p>1. <u>Development Assistance Country Criteria</u></p> <p>a. <u>FAA Sec. 102(c), (d)</u>. Have criteria been established, and taken into account, to assess commitment and progress of country in effectively involving the poor in development, on such indexes as: (1) small-farm labor intensive agriculture, (2) reduced infant mortality, (3) population growth, (4) equality of income distribution, and (5) unemployment.</p> <p>b. <u>FAA Sec. 201(b)(5), (7) & (8); Sec. 208; 211(a)(4), (7)</u>. Describe extent to which country is:</p> <p>(1) Making appropriate efforts to increase food production and improve means for food storage and distribution.</p> | <p>B.</p> <p>1. (a) An overall strategy statement recently completed by USAID/Somalia has taken these and other socio-economic factors into consideration.</p> <p>(1) This project will assist mainly in food production.</p> |

81b

- (2) Creating a favorable climate for foreign and domestic private enterprise and investment.
- (3) Increasing the public's role in the developmental process.
- (4) (a) Allocating available budgetary resources to development.
(b) Diverting such resources for unnecessary military expenditure and intervention in affairs of other free and independent nations.
- (5) Making economic, social, and political reforms such as tax collection improvements and changes in land tenure arrangements, and making progress toward respect for the rule of law, freedom of expression and of the press, and recognizing the importance of individual freedom, initiative, and private enterprise.
- (6) Otherwise responding to the vital economic, political, and social concerns of its people, and demonstrating a clear determination to take effective self-help measures.

- (2) Recently U.S. and other foreign investors have been exploring investment opportunities.
- (3) The public is very much involved in the development process in Somalia.
- (4)(a) All available resources are placed in development project.
(b) With the very real possibility of armed conflict with a neighbor, Somalia is not making unnecessary military expenditure.
- (5) Somalia is making satisfactory progress on these items.

(b) Somalia is outstanding in this respect

c. FAA Sec. 201(b), 211(a). Is the country among the 20 countries in which development assistance loans may be made in this fiscal year, or among the 40 in which development assistance grants (other than for self-help projects) may be made?

c. N/A

d. FAA Sec. 115. Will country be furnished, in same fiscal year, either security supporting assistance, or Middle East peace funds? If so, is assistance for population programs, humanitarian aid through international organizations, or regional programs?

d. No.

2. Security Supporting Assistance Country Criteria

2. a. N/A

a. FAA Sec. 502B. Has the country engaged in a consistent pattern of gross violations of internationally recognized human rights? Is program in accordance with policy of this Section?

b. N/A

b. FAA Sec. 531. Is the Assistance to be furnished to a friendly country, organization, or body eligible to receive assistance?

c. FAA Sec. 609. If commodities are to be granted so that sale proceeds will accrue to the recipient country, have Special Account (counterpart) arrangements been made?

c. N/A

5C(2) - PROJECT CHECKLIST

Listed below are, first, statutory criteria applicable generally to projects with FAA funds, and then project criteria applicable to individual fund sources: Development Assistance (with a sub-category for criteria applicable only to loans); and Security Supporting Assistance funds.

CROSS REFERENCES: IS COUNTRY CHECKLIST UP TO DATE? IDENTIFY. HAS STANDARD ITEM CHECKLIST BEEN REVIEWED FOR THIS PROJECT? Country Checklist and Standard Item Checklist attached.

A. GENERAL CRITERIA FOR PROJECT.

1. App. Unnumbered; FAA Sec. 663(b)

(a) Describe how Committees on Appropriations 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 figure plus 10%)?

(a) FY 79
Congressional Presentation

(b) Yes.

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

2.(a) Yes.

(b) Yes.

3. 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?

3. N/A.

4. FAA Sec. 611(b); App. Sec. 101. If for water or water-related land resource construction, has project met the standards and criteria as per Memorandum of the President dated Sept. 5, 1973 (replaces Memorandum of May 15, 1962; see Fed. Register, Vol 38, No. 174, Part III, Sept. 10, 1973)?

4. N/A

5. 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 the country's capability effectively to maintain and utilize the project?

5. Yes

A.

6. FAA Sec. 209, 619. Is project susceptible of execution as part of regional or multi-lateral project? If so why is project not so executed? Information and conclusion whether assistance will encourage regional development programs. If assistance is for newly independent country, is it furnished through multi-lateral organizations or plans to the maximum extent appropriate?
7. FAA Sec. 601(a); (and Sec. 201(f) for development loans). 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; (c) encourage development and use of cooperatives, credit unions, and savings and loan associations; (d) discourage monopolistic practices; (e) improve technical efficiency of industry, agriculture and commerce; and (f) strengthen free labor unions.
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).
9. FAA Sec. 612(b); Sec. 636(h). Describe steps taken to assure that, to the maximum extent possible, the country is contributing local currencies to meet the cost of contractual and other services, and foreign currencies owned by the U.S. are utilized to meet the cost of contractual and other services.
10. FAA Sec. 612(d). Does the U.S. own excess foreign currency and, if so, what arrangements have been made for its release?

6. No.
7. (a) Neutral regarding international trade;
(b) Perhaps;
(c) Yes;
(d) Yes;
(e) of Agriculture.
(f) N/A.
8. U.S. university(s) or private institution will be the primary contractor.
9. Somalia will finance more than 25 percent of the project.
10. No.

B. FUNDING CRITERIA FOR PROJECT

1. Development Assistance Project Criteria
 - a. FAA Sec. 102(c); Sec. 111; Sec. 281a. Extent to which activity will (a) effectively involve the poor in development, by extending access to economy at local level, increasing labor-intensive production, spreading investment out from cities to small towns and rural areas; and (b) help develop cooperatives, especially by technical assistance, to assist rural and urban poor to help themselves toward better life, and otherwise encourage democratic private and local governmental institutions?

- B.
 1. (a) Great;

(b) Cooperatives perhaps, target group - rural poor.

81

b. FAA Sec. 103, 103A, 104, 105, 106, 107. is assistance being made available: [include only applicable paragraph -- e.g., a, b, etc. -- which corresponds to source of funds used. If more than one fund source is used for project, include relevant paragraph for each fund source.]

- | | |
|--|---|
| (1) [103] for agriculture, rural development or nutrition; if so, extent to which activity is specifically designed to increase productivity and income of rural poor; [103A] if for agricultural research, is full account taken of needs of small farmers; | (1) The purpose of the project relates primarily to agriculture productivity. |
| (2) [104] for population planning or health; if so, extent to which activity extends low-cost, integrated delivery systems to provide health and family planning services, especially to rural areas and poor; | (2) N/A |
| (3) [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; | (3) N/A |
| (4) [106] for technical assistance, energy, research, reconstruction, and selected development problems; if so, extent activity is: | (4) |
| (a) technical cooperation and development, especially with U.S. private and voluntary, or regional and international development, organizations; | (a) U.S. University(s), or private contractor. |
| (b) to help alleviate energy problem; | (b) N/A |
| (c) research into, and evaluation of, economic development processes and techniques; | (c) N/A |
| (d) reconstruction after natural or manmade disaster; | (d) N/A |
| (e) for special development problem, and to enable proper utilization of earlier U.S. infrastructure, etc., assistance; | (e) N/A |
| (f) for programs of urban development, especially small labor-intensive enterprises, marketing systems, and financial or other institutions to help urban poor participate in economic and social development. | (f) N/A |

(5) [107] by grants for coordinated private effort to develop and disseminate intermediate technologies appropriate for developing countries.

(5) N/A

c. FAA Sec. 110(a); Sec. 208(e). Is the recipient country willing to contribute funds to the project, and in what manner has or will it provide assurances that it will provide at least 25% of the costs of the program, project, or activity with respect to which the assistance is to be furnished (or has the latter cost-sharing requirement been waived for a "relatively least-developed" country)?

C. To be determined during grant agreement negotiations.

d. 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?

D. No.

e. FAA Sec. 207; Sec. 113. Extent to which assistance reflects appropriate emphasis on: (1) encouraging development of democratic, economic, political, and social institutions; (2) self-help in meeting the country's food needs; (3) improving availability of trained worker-power in the country; (4) programs designed to meet the country's health needs; (5) other important areas of economic, political, and social development, including industry; free labor unions, cooperatives, and Voluntary Agencies; transportation and communication; planning and public administration; urban development, and modernization of existing laws; or (6) integrating women into the recipient country's national economy.

- E.. (1) None
 (2) Great
 (3) 22 Professionals Trained
 (4) None
 (5) Cooperatives
 (6) Some

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 civic education and training in skills required for effective participation in governmental and political processes essential to self-government.

F. The project is designed for Somalia taking into consideration all available resources.

Part I

AID HANDBOOK 3, App 5C	FRANK. SEND NO. 3:19	EFFECTIVE DATE February 15, 1978	PAGE NO. SC(2)-5
------------------------	-------------------------	-------------------------------------	---------------------

81

g. FAA Sec. 201(b)(2)-(4) and -(9); Sec. 201(e); Sec. 211(a)(1)-(3) and -(8). 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; or of educational or other institutions directed toward social progress? Is it related to and consistent with other development activities, and will it contribute to realizable long-range objectives? And does project paper provide information and conclusion on an activity's economic and technical soundness?

G. Productive capacities are in Agriculture, and the project is of course related to other development activities, will contribute to realizable long-range objectives and the PP addresses economic and technical soundness.

h. FAA Sec. 201(b)(6); Sec. 211(a)(5), (6). Information and conclusion on possible effects of the assistance on U.S. economy, with special reference to areas of substantial labor surplus, and extent to which U.S. commodities and assistance are furnished in a manner consistent with improving or safeguarding the U.S. balance-of-payments position.

H. No effect.

2. Development Assistance Project Criteria (Loans only)

2. N/A

a. FAA Sec. 201(b)(1). Information and conclusion on availability of financing from other free-world sources, including private sources within U.S.

b. FAA Sec. 201(b)(2); 201(d). Information and conclusion on (1) capacity of the country to repay the loan, including reasonableness of repayment prospects, and (2) reasonableness and legality (under laws of country and U.S.) of lending and relending terms of the loan.

c. FAA Sec. 201(e). If loan is not made pursuant to a multilateral plan, and the amount of the loan exceeds \$100,000, has country submitted to AID an application for such funds together with assurances to indicate that funds will be used in an economically and technically sound manner?

d. FAA Sec. 201(f). Does project paper describe how project will promote the country's economic development taking into account the country's human and material resources requirements and relationship between ultimate objectives of the project and overall economic development?

FORM NO. SC(2)-6	EFFECTIVE DATE February 15, 1978	FORM REV. NO. 3:19	AID HANDBOOK 3, ADD. SC
---------------------	-------------------------------------	-----------------------	-------------------------

82

e. FAA Sec. 202(a). Total amount of money under loan which is going directly to private enterprise, is going to intermediate credit institutions or other borrowers for use by private enterprise, is being used to finance imports from private sources, or is otherwise being used to finance procurements from private sources?

f. FAA Sec. 620(d). If assistance is for any productive enterprise which will compete in the U.S. with U.S. enterprise, 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?

3. Project Criteria Solely for Security Supporting Assistance

3. N/A

FAA Sec. 531. How will this assistance support promote economic or political stability?

4. Additional Criteria for Alliance for Progress

4. N/A

[Note: Alliance for Progress projects should add the following two items to a project checklist.]

a. FAA Sec. 251(b)(1), -(8). Does assistance take into account principles of the Act of Boyota and the Charter of Punta del Este; and to what extent will the activity contribute to the economic or political integration of Latin America?

b. FAA Sec. 251(b)(8); 251(h). For loans, has there been taken into account the effort made by recipient nation to repatriate capital invested in other countries by their own citizens? Is loan consistent with the findings and recommendations of the Inter-American Committee for the Alliance for Progress (now "CEPCIES," the Permanent Executive Committee of the OAS) in its annual review of national development activities?

AID HANDBOOK 3, App 5C	PAGE NUM. 3:19	EFFECTIVE DATE February 15, 1978	PAGE NO. SC(3)-1
------------------------	----------------	----------------------------------	------------------

5C(3) - STANDARD ITEM CHECKLIST

Listed below are statutory items which normally will be covered routinely in those provisions of an assistance agreement dealing with its implementation, or covered in the agreement by exclusion (as where certain uses of funds are permitted, but other uses not).

These items are arranged under the general headings of (A) Procurement, (B) Construction, and (C) Other Restrictions.

A. Procurement:

- | | |
|---|--------|
| 1. <u>FAA Sec. 602.</u> Are there arrangements to permit U.S. small business to participate equitably in the furnishing of goods and services financed? | 1. Yes |
| 2. <u>FAA Sec. 604(a).</u> Will all commodity procurement financed be from the U.S. except as otherwise determined by the President or under delegation from him? | 2. Yes |
| 3. <u>FAA Sec. 604(d).</u> If the cooperating country discriminates against U.S. marine insurance companies, will agreement require that marine insurance be placed in the U.S. on commodities financed? | 3. Yes |
| 4. <u>FAA Sec. 604(e).</u> If offshore procurement of agricultural commodity or product is to be financed, is there provision against such procurement when the domestic price of such commodity is less than parity? | 4. N/A |
| 5. <u>FAA Sec. 608(a).</u> Will U.S. Government excess personal property be utilized wherever practicable in lieu of the procurement of new items? | 5. Yes |
| 6. <u>MMA Sec. 901(b).</u> (a) Compliance with requirement that at least 50 per centum of the gross tonnage of commodities (computed separately for dry bulk carriers, dry cargo liners, and tankers) financed shall be transported on privately owned U.S.-flag commercial vessels to the extent that such vessels are available at fair and reasonable rates. | 6. Yes |
| 7. <u>FAA Sec. 621.</u> If technical assistance is financed, will such assistance be furnished to the fullest extent practicable as goods and professional and other services from private enterprise on a contract basis? If the facilities of other Federal agencies will be utilized, | 7. Yes |

FORM NO. SC(3)-2	EFFECTIVE DATE February 15, 1978	TRAIL. EDITION 3:19	AID HANDBOOK 3, App. 5C
---------------------	-------------------------------------	------------------------	----------------------------

A7

are they particularly suitable, not competitive with private enterprise, and made available without undue interference with domestic programs?

8. International Air Transport. Fair Competitive Practices Act, 1974

8. Yes

If air transportation of persons or property is financed on grant basis, will provision be made that U.S.-flag carriers will be utilized to the extent such service is available?

B. Construction

1. FAA Sec. 601(d). If a capital (e.g., construction) project, are engineering and professional services of U.S. firms and their affiliates to be used to the maximum extent consistent with the national interest?

1. N/A

2. FAA Sec. 611(c). If contracts for construction are to be financed, will they be let on a competitive basis to maximum extent practicable?

2. Yes

3. FAA Sec. 620(k). If for construction of productive enterprise, will aggregate value of assistance to be furnished by the U.S. not exceed \$100 million?

3. N/A

C. Other Restrictions

1. FAA Sec. 201(d). If development loan, is interest rate at least 2% per annum during grace period and at least 3% per annum thereafter?

1. N/A

2. FAA Sec. 301(d). If fund is established solely by U.S. contributions and administered by an international organization, does Comptroller General have audit rights?

2. N/A

3. FAA Sec. 620(h). Do arrangements preclude promoting or assisting the foreign aid projects or activities of Communist-Bloc countries, contrary to the best interests of the U.S.?

3. Yes

4. FAA Sec. 636(i). Is financing not permitted to be used, without waiver, for purchase, long-term lease, or exchange of motor vehicle manufactured outside the U.S. or guaranty of such transaction?

4. Yes

C.

- | | |
|--|--------|
| 5. Will arrangements preclude use of financing: | 5. |
| a. <u>FAA Sec. 114.</u> to pay for performance of abortions or to motivate or coerce persons to practice abortions? | a. Yes |
| b. <u>FAA Sec. 620(c).</u> to compensate owners for expropriated nationalized property? | b. Yes |
| c. <u>FAA Sec. 660.</u> to finance police training or other law enforcement assistance, except for narcotics programs? | c. Yes |
| d. <u>FAA Sec. 662.</u> for CIA activities? | d. Yes |
| e. <u>App. Sec. 103.</u> to pay pensions, etc., for military personnel? | e. Yes |
| f. <u>App. Sec. 106.</u> to pay U.N. assessments? | f. Yes |
| g. <u>App. Sec. 107.</u> to carry out provisions of <u>FAA Sections 209(d) and 251(h)</u> ? (transfer to multilateral organization for lending). | g. Yes |
| h. <u>App. Sec. 501.</u> to be used for publicity or propaganda purposes within U.S. not authorized by Congress? | h. Yes |

ANNEX II

LOGICAL FRAMEWORK

LOGICAL FRAMEWORK

ANNEX II

NARRATIVE	OBJECTIVELY VERIFIABLE INDICATORS	ASSUMPTIONS
<p>GOAL: INCREASE AGRICULTURAL PRODUCTION THROUGH AN INTENSIFICATION PROGRAM IMPLEMENTED BY THE NES.</p>	<ol style="list-style-type: none"> 1. SOYBEAN PRODUCTION INCREASED BY 100% NATIONWIDE BY 1995. 2. MAIZE PRODUCTION INCREASED BY 100% NATIONWIDE BY 1995. 3. 400 VILLAGE LEVEL EXTENSION WORKERS IN THE FIELD BY 1985. 	<p>FOR ACHIEVING GOALS</p> <ol style="list-style-type: none"> 1. FURTHER TECHNICAL ADVANCES WILL COME FROM INTERNATIONAL AND LOCAL RESEARCH. 2. SOMALI COMMITMENT TO AGRICULTURE REMAINS HIGH. 3. SOMALI GOVERNMENT DEVELOPS TRUE COMMITMENT TO INTEGRATING MINISTRY ACTIVITIES.
<p>PURPOSE: DELIVER THE EXISTING MINIMUM INPUT TECHNICAL PACKAGE TO PILOT FARMERS IN THE BAY REGION WHILE GAINING EXPERIENCE ON THE GROUND IN DEVELOPING METHODOLOGIES FOR DELIVERING TECHNOLOGY TO THE FARMERS.</p>	<ol style="list-style-type: none"> 1. 2000 FARM FAMILIES ADAPTING THE IMPROVED TECHNOLOGY 2. 4000 HECTARES UNDER INTENSIFIED PRODUCTION IN THE PROJECT. 3. LESSONS LEARNED IN PILOT ACTIVITIES APPLIED IN PREPARING NATIONAL EXTENSION SERVICE PLAN. 4. NEEDS IDENTIFIED IN IMPLEMENTING THIS PROJECT INCORPORATED IN DEVELOPING CURRICULUM FOR NATIONAL TRAINING PROGRAM. 	<p>FOR ACHIEVING PURPOSE</p> <ol style="list-style-type: none"> 1. TECHNICAL PACKAGE ALREADY EXISTING GIVES EXPECTED YIELD INCREASES WITHOUT EXTENSIVE FURTHER DEVELOPMENT 2. NO UNUSUAL RESISTANCE TO ADAPTION AMONG FARMERS 3. STAFF ASSIGNED TO THE PROJECT WILL NOT BE REASSIGNED OUTSIDE THE EXTENSION SERVICE.
<p>OUTPUTS:</p> <ol style="list-style-type: none"> 1. BOTH RAINFED AND DRYLAND DEMONSTRATION PLOTS INSTALLED. 2. TRAINED VILLAGE EXTENSION WORKERS IN THE FIELD. 3. OPTIMUM MINIMUM PACKAGE DEVELOPED. 4. EXTENSION REACHING MAJORITY OF FARMERS IN PILOT AREA. 5. TRAINED NUCLEUS OF SOMALI EXTENSIONISTS TO DEVELOP NATIONAL PROGRAM. 	<ol style="list-style-type: none"> 1. 40 rainfed and 20 irrigated plots 2. 25 BASE LEVEL EXTENSION AGENTS TRAINED AND WORKING. 3. TRAINING MATERIALS DEVELOPED FOR PACKAGE THAT IS MOST EFFECTIVE FOR INCREASING YIELDS AT REASONABLE COST. 4. 12,500 FARM FAMILIES HAVING ACCESS TO EXTENSION INFORMATION. 5. 12 LONG TERM TRAINED SOMALIS, 10 SPECIALLY TRAINED SOMALIS. 	<p>FOR ACHIEVING OUTPUTS</p> <ol style="list-style-type: none"> 1. STAFF PROMISED BY GSDR IS PROVIDED IN TIMELY MANNER. 2. VILLAGES ARE AS COOPERATIVE AS INITIAL INVESTIGATIONS INDICATE.
<p>INPUTS: TECHNICAL ASSISTANCE TRAINING COMMUNITIES CIVIL WORKS OPERATING COSTS</p>	<p>SEE BUDGETS</p>	

ANNEX III

FINANCIAL TABLES

GOVERNMENT BUDGET DETAILED BUDGETS

THE NATIONAL BUDGET

Revenue,	Estimation 1977	Estimation 1978	Difference	Expend.	Estimation 1977	Estimation 1978	Diff.
Current Revenue	\$194,069,510	\$228,305,384	\$ 34,235,874	Current Expenditure	\$145,315,674	\$194,490,333	+49,174,659
Capital Revenue	\$ 4,032,258	-	-4,032,258	Capital Expenditure	52,786,094	33,815,050	-18,971,034
T o t a l	\$198,101,768	\$228,305,384	\$ 30,203,616	T o t a l	\$198,101,768	\$228,305,383	+ 30,203,615

Local Governments Budget

Revenue	<u>1977</u>	<u>1978</u>
Current Revenue	15,748,871	17,033,870
Capital Revenue	<u>1,155,000</u>	<u>1,050,000</u>
Total	<u>16,903,871</u>	<u>18,338,870</u>
Current Expenditure	12,455,483	13,829,193
Capital Expenditure	<u>4,448,387</u>	<u>4,509,677</u>
Total	<u>16,903,870</u>	<u>18,338,870</u>

Ministries	<u>1977</u>	<u>1978</u>	<u>Difference</u>
Presidency	3,823,451	5,436,354	+ 1,604,517
State Planning Commission	-	491,403	+ 491,403
Police	10,032,445	14,673,677	+ 4,641,232
Militia	-	1,710,295	+ 1,710,295
Ministry of Finance	17,030,325	32,196,645	+15,166,320
Ministry of Justice & Rel. Aff.	1,537,173	1,558,370	+ 21,197
Ministry of Foreign Aff.	6,340,228	7,179,117	+ 838,889

<u>Ministries</u>	<u>1977</u>	<u>1978</u>	<u>Difference</u>
Ministry of Defence	32,258,064	40,322,580	+ 8,064,516
Gustodial Guards	3,416,866	5,898,518	+ 2,481,652
<u>Ministry of Local Government & Rural Development</u>			
Budget	1,442,880	6,568,461	+ 5,125,581
Program	<u>241,935</u>	<u>338,709</u>	<u>+ 96,774</u>
Total	1,684,815	6,907,170	+ 5,222,355
	=====	=====	=====
<u>Ministry of Public Works</u>			
Budget	3,323,064	3,405,500	+ 82,434
Programs	<u>4,838,709</u>	<u>6,532,258</u>	<u>+ 1,693,549</u>
Total	8,161,773	9,937,758	+ 1,775,985
	=====	=====	=====

Ministry of Minerals and Water Resources

	<u>1977</u>	<u>1978</u>	<u>Difference</u>
Budget	1,419,048	1,392,554	- 26,494
Programs	<u>4,700,993</u>	<u>3,954,634</u>	- <u>746,359</u>
TOTAL	6,120,041	5,347,188	- 772,853

Ministry of Agriculture

	<u>1977</u>	<u>1978</u>	<u>Difference</u>
Budget	4,604,538	4,479,801	- 124,737
Programs	<u>8,951,612</u>	<u>9,112,903</u>	+ <u>161,291</u>
TOTAL	13,556,150	13,592,704	+ 36,554

Ministry of Livestock

	<u>1977</u>	<u>1978</u>	<u>Difference</u>
Budget	3,044,964	3,018,983	- 25,981
Programs	<u>4,251,290</u>	<u>5,188,870</u>	+ <u>937,580</u>
TOTAL	7,296,254	8,207,853	+ 911,601

Ministry of Fisheries

	<u>1977</u>	<u>1978</u>	<u>Difference</u>
Budget	579,190	595,529	+ 16,339
Programs	<u>1,934,677</u>	<u>1,612,903</u>	- <u>305,434</u>
TOTAL	2,513,867	2,208,432	- 289,095

<u>Ministry of Labour & Social Services</u>			
	<u>1977</u>	<u>1978</u>	<u>Difference</u>
Budget	237,303	451,596	+ 214,293
Program	315,323	495,870	+ 180,547
Total	<u>552,626</u>	<u>947,466</u>	<u>494,840</u>
<u>Ministry of Transportation</u>			
Budget	6,596,840	6,890,549	+ 293,709
<u>Ministry of Posts & Communication</u>			
Budget	3,205,000	3,577,999	+ 372,999
<u>Ministry of Commerce</u>			
Budget	609,300	536,532	- 72,768
<u>Ministry of Education</u>			
Budget	16,392,634	18,860,235	+2,467,601
Program	2,827,114	4,435,483	+1,608,369
Total	<u>19,219,748</u>	<u>23,295,718</u>	<u>+4,075,970</u>
<u>Ministry of Culture and Higher Education</u>			
Budget	3,935,385	5,181,467	1,246,082
Program	<u>392,822</u>	<u>492,129</u>	<u>99,387</u>
Total	<u>4,328,127</u>	<u>5,673,596</u>	<u>1,345,469</u>
<u>Ministry of Information</u>			
Budget	2,950,047	3,194,741	244,694
Program	<u>2,903,322</u>	<u>411,290</u>	<u>120,968</u>
Total	<u>3,240,369</u>	<u>3,606,031</u>	<u>365,662</u>

Ministry of Industry

	<u>1977</u>	<u>1978</u>	<u>Difference</u>
Budget	127,472	165,209	+ 37,737
Programs	<u>7,580,645</u>	<u>6,527,177</u>	<u>-1,053,468</u>
TOTAL	7,708,118	6,692,387	-1,015,731

Ministry of Sea Transport and Ports

	<u>1977</u>	<u>1978</u>	<u>Difference</u>
Budget	220,967	544,975	+ 324,008
Programs	<u>458,879</u>	<u>400,000</u>	<u>- 58,879</u>
TOTAL	679,846	944,975	+ 265,129

Ministry of Health

	<u>1977</u>	<u>1978</u>	<u>Difference</u>
Budget	9,836,014	9,709,016	- 126,998
Programs	<u>419,355</u>	<u>419,355</u>	<u>0</u>
TOTAL	10,255,369	10,128,370	- 126,998

Ministry of Sports

	<u>1977</u>	<u>1978</u>	<u>Difference</u>
Budget	454,541	553,564	+ 99,023
Programs	<u>161,290</u>	<u>64,516</u>	<u>- 96,774</u>
TOTAL	615,831	618,080	+ 2,249

DEVELOPMENT BUDGET

Programs Financed Outside National Budget

State Planning Commission
Documentary Center \$112,903

Ministry of Local Government & Rural Development
Rural Development Program 306,451

Ministry of Public Works
Roads 16,929,032
Bridges 1,999,677
Mogadishu New Port 912,903
Mogadishu Electricity 5,438,064
Construction at Resettlements 2,031,290

Total \$27,310,967

Ministry of Minerals and Water Resources
Tin at Majayahan 1,821,290
Uranium 15,079,112
Mogadishu Water Supply 502,580

Total \$17,402,983

Ministry of Agriculture
Safety of Trees 237,903
Agricultural Research 826,612
N. Western Region 1,435,483
Agriculture of Resettlements 6,552,903
Janale - Bula Marerta Scheme 502,580
Agriculture at Saakow 830,161
Agricultural Machinery 587,741
Grapefruit 1,451,612

Total \$12,424,995

Ministry of Livestock
Animal Health School 141,935
Vaccination Stations 247,580
Poultry Farm - Km 13 1,608,387
Animal Fattening 2,016,129
Range Management 4,210,161
Animal Scheme at Juba 3,016,129
Planning of the Ministry 251,612

Total \$11,491,933

<u>Ministry of Fisheries</u>		
Fishing Cooperative		\$ 645,161
Fishing Development		435,483
Purchase of Boats, Ships & Equipment		5,385,483
Somali Fishing Company		<u>8,064,516</u>
	Total	\$14,530,643
<u>Ministry of Industry</u>		
Cement Factory		3,064,516
Construction of other Factories		7,098,548
Juba Sugar Factory		30,158,225
Improvement of Existing Factories		<u>122,903</u>
	Total	\$40,444,192
<u>Ministry of Transportation</u>		
Somali Airlines		483,870
<u>Ministry of Posts & Communication</u>		
Communication School		319,354
<u>Ministry of Education</u>		
Multi-purpose Programs		2,017,741
Construction of Vocational School		<u>103,870</u>
		\$2,121,611
<u>Ministry of Health</u>		
Enlargement and Improvement of Hospitals		\$3,140,322
<u>Ministry of Labor and Social Services</u>		
Somali Institute for Development of Administration Management		366,451
<u>Ministry of Information</u>		
Radio/Mogadischu		<u>24,193</u>
	GRAND TOTAL	\$130,380,868

ANNEX IV

INITIAL ENVIRONMENTAL EXAMINATION

Project Location: Somalia

Project Title: Agriculture Extension, Training and
Research Project

Funding:

Period of Project: FY 1978 - FY 1982

IEE Prepared By: REDSO/EA

Environmental Action
Recommended: Negative Determination

Concurrence: Charles P. Campbell 8/15/78
C. P. Campbell Date
AID Representative/Somalia

Assistant Administrator's Decision:

Approved _____

Disapproved _____

Date _____

I. BACKGROUND

Somalia is the eastern horn of Africa with an area of more than 637 thousand square kilometers. Its climate is arid to semi-arid with few areas exceeding 500 millimeters (20 inches) of rainfall. The Shebelle and Juba are small rivers which flow from the highlands of Ethiopia toward the Indian Ocean and provide the water for a modest irrigated agriculture. The present population is estimated at 3 to 3.5 million with an average per capita income of 480 to 600 So. Sh. (U.S. \$80 to \$100).

The economy is dependent on agriculture and livestock. Essentially all exports are in the form of agricultural commodities. For the first half of 1977 this consisted primarily of livestock and livestock products (74 percent), bananas (16 percent), and other agricultural products (10 percent). Export of livestock and livestock products and bananas are suffering severe market competition. Total exports declined 26 percent from the first half of 1976 to the first half of 1977. Many consumer goods, energy fuels, durables and basic production inputs must be imported. Recent trends display increasing trade deficits resulting in severe domestic inflationary pressures. Trade deficits have been partially alleviated in the form of grants and loans for several internally funded development projects.

The Government of Somalia has given highest priority to agricultural development with the goals of food self-sufficiency and self-reliance. Performance has been commendable in spite of severe drought and adversity. National agricultural policy has encouraged the development of public sector, large-scale state farms under several programs. Three primary reasons are evidenced for this policy: 1) need for a rapid increase in food production; 2) the need to alleviate unemployment; and 3) the ability to attract monetary support from abroad. The private sector has a few commercial farming operations, particularly in banana and citrus activities. The private sector in agriculture is dominated by small subsistence farms that produce 80 percent of the cereals and oil seeds in the country.

This project is designed to support the improvement in productivity of the small, privately operated farms and farm cooperatives. These units clearly display the ability to double food production if they are provided very modest inputs such as local fertilization and technical assistance in preparation of seed beds and improved seed. Additional benefits could ultimately be obtained in later phases of the program by providing other inputs including fertilizers, chemicals, water, technology, equipment, transport and marketing services.

The land with the highest production potential with respect to soils, rainfall, irrigation waters and existing roads and markets is found along and between the Shebelle and Juba Rivers. This geographic area contains 85 percent of the present land under cultivation and produces over 90 percent of the agricultural products. Much cultivatable land in this area is presently not being farmed. Only 700 thousand of the more than 6 million hectares of arable land in the nation are currently being cultivated.

The dominant project thrust is toward increasing the incomes of small private farmers and farm cooperative members by providing an effective on-the-farm extension program designed to overcome the principle constraints to agricultural production. This extension program will attempt to improve the level of agricultural production to achieve the Government of Somalia's goals of domestic food self-sufficiency and self-reliance by making maximum and effective use of resources currently available to the small farmer, while holding to an essential minimum external inputs that are not readily available in the country. In order to satisfy these objectives, it will be necessary to develop a national extension service which will give primary emphasis on direct assistance to farmers and livestock owners supported by training and applied research. These goals and the formulated project program are consistent with the Congressional Mandate.

II. PROJECT DESCRIPTION

In order to improve productivity on small, privately-owned farms and farmer cooperatives an intensive on-the-farm training program aimed at making the most effective use of locally available, natural and human resources will be introduced.

The program will introduce technologies and adaptations most likely to achieve desired production results without, at the same time, radically changing established life patterns or require expensive inputs difficult to supply. This will require the establishment of a network of farmer training personnel assigned to a specific number of farms in a district. To the extent possible the farmer training personnel will be agricultural graduates, existing extension personnel and possibly experienced farmers. They will be supported and assisted by AID staff who will provide them with intensive in-service training in the field and at Farmer Training Centers. This training will be designed to equip them with ability to transfer appropriate technology and innovations to achieve the desired production yields for small farmers. The program starts with an impact phase which will begin with field visits to the Bay and Shebelle districts to describe the proposed programs to concerned groups and authorities. This would be the essential first step

to obtaining local acceptance and support. This would be followed by the identification of participating farmers and cooperatives in the crop trail program. In addition, direct contacts would be made in other regions to assess approaches to provide agricultural services to farmers and livestock raisers in these areas. We would expect to be able to begin the impact phase before the end of 1978 or early 1979, possible utilizing individual personal services contracts. Procurement of essential supporting supplies and inputs will be initiated and delivered to coincide with arrival of AID agricultural technicians. The initial objective of this phase would be an early increase in cereal production on individual farms. The longer term phase will concentrate on the institutional development process associated with the establishment of a self-sustaining National Extension Service. This will require further contractual arrangements with U.S. institutions or entities.

Farmer Training: (Short and Long-Term Phase)

The principle emphasis will be given to problem solving and production oriented training on the farm. The training program will concurrently help individual small farmers and cooperative members to overcome production constraints and develop a cadre of Somalia agricultural workers which can continue farmer training and extension services country-wide. Training programs will be developed and taught at Farmer Training Centers at Genale, Baidoa and Bura, and other suitable facilities in the Bay Region and possible farms in the northwest. As an element of the on-the-farm training program 40 selected sorghum farms will be identified as test farm demonstration representative of all districts in the Bay Region. Another 20 maize test farms will also be selected in the Lower Shebelli. These farms will also be used for extension training purposes, and for demonstrating use and effectiveness of new inputs and practices. An evaluation of the results on sorghum and maize test farms will be used to assist in the design and establishment of a National Extension Service - the long-term program objective. In addition, other supporting activities credit, equipment, overseas training and assistance to academic institutions will be incorporated in the long-term phase of the programs.

Improvement Goals

Specific five-year improvement goals have been established for various project components:

- (a) Sorghum: The overall goal is to increase sorghum yields from an average of 350 to 500 kg/ha. through use of a minimum package approach emphasizing resource management.
- (b) Maize: To overall project goal is to increase maize for human consumption in the irrigated areas of the Upper and Lower Shebelli Region from approximately 875 kg/ha to 100 kg/ha over the

five-year period. Yields on pulses, which are intercropped with maize, will be increased through use of appropriate inputs and planting techniques.

To implement this project seven (7) long-term and additional short-term agricultural specialist will be provided in various fields of agriculture. There are two sites identified for the proposed implementation of the project: they are Genale, Baidoa. The permanent housing for seven (7) persons sites: Genal and Baidoa. The numbers of housing to be built at those two sites are not determined. But this issue will be resolved shortly after the Somali Government in conjunction with USAID/Somalia decides on the placement of personnel.

III. DISCUSSION OF IMPACTS

A. Land Use Impacts

1. Training/Agricultural Research

As a result of this project, there will be beneficial impacts on land resources. The land with highest production potential is found between the Shebelli and Juba Rivers. Only 700 thousand of the more than 6 million hectares of cultivatable land in the nation are currently being farmed. Small private farmers and farm cooperative members will be provided on-the-farm extension training designed to overcome the principle constraints to agriculture production. The extension program will address the issue of land management to minimize mining of the soil and restore the water-holding capacity to the soil.

2. Construction

The proposed construction of seven (7) 3-bedroom houses will take place at two existing Agricultural Research Stations: Genale and Baidoa, Both sites have been visted by a REDSO engineer, to determine the suitability of utilities and potential impacts on the environment. Due to the present shortage of most building materials, it is recommended to utilize modular/pre-fabricated housing units in lieu of permanent housing units. All sites are located within the perimeter of the existing research stations where utilities like water, electricity, if not adequately available, provisions of generators and water wells will have to be made.

B. Public Health Impacts

The project will have no adverse health impacts.

C. Social-Economic Impacts

A major thrust of the project will be directed toward improving yields among small subsistence farmers by means of an intergrated package of inputs, extension supervision, and a regular monitoring of the adoption and use of the appropriate technology and cultural practices. All available evidence would suggest that farmers in the areas are receptive toward agricultural improvements, have a capacity for producing more and placing more land under cultivation given adequate incentives. The overall project effort is assistance provided will be minimally disruptive to farm households and villages alike.

A national census has been conducted but so far only gross population figures have been tabulated. By rough estimate, between 40 and 50 percent of the nation's population lies within or immediately adjacent to the program areas. Upward of 80 percent of the inhabitants of the programs area are living in rural villages and engaged in semi-subsistence farming. Although population density throughout the country is not high, the inter-riverine and northwest areas contain some of the higher, density levels seem in Somalia (about 100 persons of square mile), which should make the areas a good starting point for assuring that the program will have a higher potential for visibility and for spreading in a relatively short time.

The data available for the project area suggest that the model farm household has between two and eight hectares of land and a per capita income of a \$100/year or less. Land under cultivation ranges from 1 to 100 hectares but more than 90 percent of the farmers fall in the 2 to 8 hectare range.

The project seeks to improve production among small-scale subsistence farmers, mainly in the dryland farming areas of the Bay Region between the Shebelli and Juba Rivers in the south and in the northwest regions. There is a considerable institutional potential for development in both regions and indications that in the past production has been inhibited by limitations placed on the amount of grain farmers were allowed to keep for their own use and on the low prices offered by government purchasing agencies. These constraints on production appear now to have been relaxed.

Self-help and other efforts by the Somali Government have demonstrated, there is clearly here a sound local institutional basis for positive development in the southern Bay Region, despite the placid character of its local population. Here cultivation by hand-hoe has been standard practice for centuries. The local population, speaking a distinctive dialect of Somali, to be taken into account in effective extension work, is of mixed origin. Being much more firmly localized than the northern cultivators, the population is more insulated and traditionally less susceptible to external influences.

Nevertheless, local units are more strongly delineated and provide a sound base for the project's extension work. Settlements here, again based on communally excavated and maintained water tanks, are generally larger than in the north-west. Village affairs are organized by the elders and collective tasks in cultivation, water management (for which a strict code of practice exists), hunting, recreation and ritual assigned to parties of young men under the leadership of a youth of strong character (the Aw Barbar). Above the village level, decision-making is articulated by local "elders" (now called "Peace-Seekers") who are integrated into the provincial organization of the central government. Extension activities can be effectively channelled through these institutions and through the Orientation Centers of the official government party. These organs of innovation should prove an effective medium for successful implementation of the program, since they are specifically designed to secure grass-roots participation. Radio programs, appropriately designed songs and poetry, which are well-established means of influencing opinion in Somalia might be usefully employed in the extension program.

Additionally, discussions with farmers and extension staff and instructors at Farmer Training Centers in the project area have turned up no evidence to suggest an underlying reluctance on the part of small farmers to accept advice, participate in training programs, try new methods, or change their traditional practices when appropriate. To the contrary, farmers are depicted by training center staff and agricultural officials as being dissatisfied with receiving what they essentially consider to be old information and incomplete assistance. At the present time, there is a widespread receptivity toward improvement which should be tapped. Many of the widely held conceptions don't seem to apply to farmers in these areas. Considering the current capacity of the Somali extension service, the farmers' unfamiliarity with use of modern inputs and their insulation from institutional services, small farmers in the project area have demonstrated in the past that they can be relatively productive. There is every reason to believe that given the proper services, inputs, and incentives farmers will respond appropriately.

The importance of cultural factors should not be overestimated. In many cases it has been shown that no more than new knowledge, training, or resource access are necessary to "eliminate" many presumed cultural constraints. Nor should we underestimate the ability of small farmers to make dramatic changes if given the necessary risk protection, resources, and supervision.

As previously indicated, a large part of farmer's family provides the necessary labor for agricultural activities but some non-family are employed. There is thus the potential perhaps for employing more rural labor. In the short run, at least, there is also considerable potential in the program for retention of population in rural areas or at least arrest the drift to urban centers. However, the "pull" of urban living will continue to attract unless some of these advantages can be provided to the rural areas.

The farm test program is likely to have little disruptive effect on the farm household or in the village. All the evidence we have suggests widespread receptivity among farmers to agricultural improvement efforts, and so the underlying motivation appears to be there. In addition, though, participation will be voluntary, farmers won't be required to participate in any forms of social organization, no new unattainable resource demands will be placed on them, they will continue growing a crop they customarily plant, and no population displacement is involved. Nor are large numbers of individuals involved in any village. Local village leaders will initially be completely informed about the program, they will be routinely contacted for advice and kept up to date on the program's progress. It is expected that their involvement will minimize the risk of local resistance or apathy, which could materialize, as noted earlier. There are influential opinion leaders and groups and their support will be essential to ensure the project's success. In every respect the program will be established with the existing socio-cultural system.

Role of Women

It is apparent that women in Somalia, as in much of Africa, are vital to rural development. They make most of the household's sanitation and nutrition decisions and, in agriculture, at least implement, if not make, many of the basic decisions related to crop and livestock production. They customarily perform the lighter cultivation tasks, such as weeding and helping in harvesting. They also look after the sheep and goats and fowls (where these are reared). These are areas in which they exercise a high degree of autonomy. Women also customarily play an important informal role in decision-making. They exercise much influence over their children, and sons have strong ties to their mothers. Polygamy, associated with wealth, and status, is common in the Bay Region. The first wife enjoys considerable authority vis a vis her co-wives. She customarily has charge of the family money-box and her house is the principal home. Co-wives do not normally live under the same roof. Each, with her children, forms a separate economic unit. Farmers customarily allocate separate farming and herding responsibilities

to different wives. Similarly, an extended family or brother acts as a joint farming unit, each brother managing a separate production unit be it land, cattle herd, or camel herd.

Women exercise much more influence than is superficially apparent. The Somali Government is firmly committed to a policy of female emancipation and women have shown that they are ready to participate. Those in the Bay Region are already involved at the local level and can play an important positive role in the implementation of the program. This will be in full accord with their involvement at the local level in the People's Vigilante Corps (The Gulwaadayaal) which coordinates hygiene and welfare inputs at the district and sub-district level.

Incorporating women into project activities should not present a problem, and there is every reason to believe they will be active participants. Government leaders have indicated that women should participate more actively in the development of the nation, and the government has taken steps to give equal rights to women. This is reflected in educational enrollments where the portion of females has gone from 20 percent to 25 percent of total enrollment since 1970. In the 1974-1978 five-year Development Plan, the government indicated a need for expanded educational opportunities, both formal and non-formal, for women. At the present time, there are 16 female students in the Faculty of Agriculture, and 27 in Veterinary Medicine, and females are being nominated as candidates for overseas training.

D. Impacts on Natural and Community Resources

1. Water

Water has always been a critical issue in the Republic of Somalia. The proposed construction of seven (?) houses will have to be provided with adequate water supply. A REDSO engineer has visited the sites for the proposed construction and considers them satisfactory. At Baidoa, the Chinese-built water supply scheme can be extended to the research station to provide adequate water supply to the whole station. At present it does not appear that water requirements will place any additional burden on existing water supplies. Both the Shetelli and Juba Rivers are potential sources of water for human/livestock consumption and agriculture production in Somalia; however, these sources are not developed to their maximum beneficial usage. Although this development is beyond the scope of this project, future irrigation development may result in maximum benefit from water utilization.

2. Power

The existing generators at Baidoa and Genale are already overburdened. It is recommended that a 35 KVA generator be provided at each of these stations.

3. Wastewater Deposit

All existing housing facilities are provided with individual septic tanks and soak pits for sewerage disposal. The same facilities are recommended for the proposed seven houses.

E. Short-Term Impacts

Associated with construction activities, there are short-term environmental impacts such as dust and noise pollution. However, construction of pre-fabricated structures will reduce these effects.

F. Long-term Impacts

The project will have more long-term impacts mostly of a positive nature. The biological transformation involved in agriculture and livestock production are characterized by extremely fragile balances. These relationships in the long term can deteriorate and/or be permanently destroyed if proper care is not provided. The activities to be developed as components of this project generally are either protective or will enhance the quality of the environment.

III. RECOMMENDATIONS

The project will have positive impacts in land use planning, resource management, and public health. At this stage, it is difficult to quantify social and economic impacts resulting from this project although they are expected to be generally positive. Proposed construction activity will not have any significant negative impact. A negative determination is, therefore, recommended for this project.

IMPACT IDENTIFICATION AND EVALUATION FORM

Impact
Identification
and
Evaluation^{1/}

A. LAND USE

- | | |
|--|---|
| 1. Changing the character of the land through: | |
| a. Increasing the population----- | N |
| b. Extracting natural resources----- | L |
| c. Land clearing----- | L |
| d. Changing soil character----- | L |
| 2. Altering natural defenses----- | N |
| 3. Foreclosing important uses----- | N |
| 4. Jeopardizing man or his works----- | N |

B. WATER QUALITY

- | | |
|--|---|
| 1. Physical state of water----- | N |
| 2. Chemical and biological states----- | N |
| 3. Ecological balance----- | N |

^{1/} Use the following symbols: N - No environmental impact
L - Little environmental impact
M - Moderate environmental impact
H - High environmental impact
U - Unknown environmental impact

IMPACT IDENTIFICATION AND EVALUATION FORM

C. ATMOSPHERE

- 1. Air additives-----
- 2. Air pollution-----
- 3. Noise pollution-----

D. NATURAL RESOURCES

- 1. Diversion, altered use of water-----
- 2. Irreversible, inefficient commitments-----

E. CULTURAL

- 1. Altering physical symbols-----
- 2. Dilution of cultural traditions-----

F. SOCIO-ECONOMIC

- 1. Changes in economic/employment patterns-----
- 2. Changes in population-----
- 3. Changes in cultural patterns-----

IMPACT IDENTIFICATION AND EVALUATION FORM

G. HEALTH

- 1. Changing a natural environment----- N
- 2. Eliminating an ecosystem element----- N

H. GENERAL

- 1. International impacts----- N
- 2. Controversial impacts----- N
- 3. Larger program impacts----- N

ANNEX V

ENGINEERING ANALYSIS/611(a)/611(e)

TECHNICAL ANALYSIS (CONSTRUCTION)

A. Description

The project is designed to improve the productivity of small, privately operated farms and farm cooperatives. It will increase the production potential of sorghum, maize, pulses and oil seeds. It will also improve livestock production through improved range management, animal husbandry, and use of crop residues for livestock production. To implement this project, eleven long-term and various short-term technicians will be required. The technicians will be located at two main sites: Baidoa and Genale. Both sites have been inspected by a REDSO engineer. The following is a brief description of the sites and existing facilities.

1. Genale

General

The Agricultural Research Institute located in Genale has some residential facilities, a big guest house, and an office/administration block but no classroom facilities. Some uncompleted (up to roof) houses were observed but the construction has been discontinued due to development of big cracks in the walls because of uneven settlement.

Water

Plentiful water is available from the Shebelli Riber, but a storage tank and small purification plant may be required.

Power

The electricity is provided through an old generating plant (capacity unknown). There are frequent shutdowns of the generator. Depending on the number of housing units, a small generator is recommended.

2. Baidoa

General

The Agriculture Research and Training Institute have several buildings (four student hostels, dinning-kitchen hall, some staff houses, office, classroom block) located at the site. Most of these buildings were built between 1966-1968 under a USAID program.

Site

The ground is fairly level with silty clay soil. Footings will require reinforcement and sand cushioning.

Water

The station has a storage tank of approximately 10,000 gallons. The storage tank is at a low elevation and the water is pumped through a Peerless pump from a bore hole. The water does not reach any of the showers. During the dry months the water level goes down and water shortages are experienced. A Chinese team is now putting in a new water distribution and intake system for the town of Baidoa which should be operational within three months time.

Power

Electricity to the institutional buildings is provided through a 50-year old Lister generator which should be replaced.

B. Construction

Most of the buildings in the country consist of cement block, hollow burnt brick walls, or random rubble masonry walls with concrete roofs (very few buildings have corrugated galvanized iron roofing sheets). A factory near Afgoi produces burnt hollow bricks of excellent quality. Wood of any good quality is scarce in the country resulting in importation of timber (mostly cypress). The country imports nails, hardware and sanitary fittings from Italy. An acute shortage of cement for the last 3-4 months has caused stoppage of practically all construction activities. Until recently, all cement was imported from Russia. The government has placed an order for cement from the U.K. which is still less than 50 percent of present requirements. Delays in completing construction, due to lack of construction materials, ranges from a year to 24 months. Importation of all construction materials is being carried out by a Somali Government Agency.

The REDSO engineer observed construction work in the various parts of the country and was disappointed with the quality of workmanship. Average quality of construction ranges from bad to poor. There are several qualified local contractors available in the country but practically all of them are handicapped due to lack of middle level craftsmen such as masons, plumbers, electricians, etc. Qualified architects and engineers, however, is capable of supplying all needed construction commodities.

C. Engineering Planning

The project calls for seven (7) 3-bedroom houses for long-term technicians.

With the acute shortage of construction materials at present in the country, it has been decided to utilize modular, pre-fabricated houses imported from the United States. A US supplier has recently erected some six hundred houses in Saudi Arabia which have proven quite adequate and suitable for this semi-desert climate.

It has been confirmed by suppliers that these houses are available and that they will provide suitable personnel for erection of these houses, once the footings are completed. The services of a local architect should be utilized to design suitable footing details and sewage facilities for the modular houses. A local contractor should construct the footings and sewage facilities (soak pit and septic tank) for the proposed houses. For costing, all footings will be reinforced due to the soil characteristics (steel is available).

The size of the proposed 3-bedroom houses is 24' x 48'. This conforms with ATCO drawing no. H89. Although 1152 sq. ft. for a 3-bedroom house is not regarded as roomy, it should provide adequate space for the technicians. Since the country is plagued with all material shortages for construction, there does not seem to be any other solution for timely availability of houses except modular homes.

The estimated time required for construction is as follows:

1. Preparation of engineering drawings (foundation and sewage details) and preliminary contract documents for foundations and sewage work	1½ to 2 Months
2. Selection of local contractor and contract award	1 Month
3. Completion of foundation and sewage facilities	4 to 6 Months
4. Shipping of modular homes to site	6 to 8 Months
5. Erection of modular homes, connection of utilities	<u>4 Months</u>
Total	15½ to 20 Months

(This time can be reduced if shipment (item 4) is started prior to or at the same time as items 1-3).

D. Technical Soundness

The proposed modular houses are not the best suited either for the country or for the inhabitants; however, given the need for housing in the next year, pre-fabricated modular housing is the most logical solution.

The same units in Saudi Arabia have proved to be very effective and suitable for a semi-desert/desert climate. All housing units are provided with central air conditioning, furniture, stove, refrigerator and other standard amenities. The life of each unit is guaranteed in excess of five years with minimum maintenance and ten to fifteen years with proper maintenance.

The design of the footings will be developed by a local architect based on the footing drawings provided by the supplier. REDSO engineers will be required to approve foundation design before construction begins. Sewage design will also be developed by a local architect.

E. Cost Estimates

The cost of regular residential houses at present in Somalia runs between Somali shillings 1,500 to 1,600 per square meter, or \$22.50 to \$24.00 per square foot. The following costs are based on quotes by ATCO in July 1978, for 3-bedroom modular houses:

(1) 3-bedroom (24' x 48') house (ref. drg. no. H89) with furniture, air conditioning and kitchen utilities complete, F.O.B. U.S. port	<u>Unit Price</u>
	\$35,304.00
Ocean freight	\$11,768.00
Cost of erection	\$17,729.00
Inland transportation	\$ 3,530.00
Cost of concrete footings	\$ 5,000.00
Cost of sewage facilities	<u>\$ 2,500.00</u>
Total for one unit	\$75,831.00
Rounded to	\$75,000.00
Total for seven (7) units	\$525,000.00

(2) Following are cost of utilities (where required), AE/E fees, etc.

(a) AE/E fees for foundation and sewage design including comprehensive contract documents for both services	\$10,000.00
(b) Cost of two (2) 35 KVA generators (at \$9,000) and hookup	\$23,000.00
(c) Grading and Landscaping (2 sites)	\$ 7,000.00
(d) Water storage tank and hookup	<u>\$20,000.00</u>
Total	\$60,000.00
Total construction cost AID	\$585,000.00
Rehab work	<u>\$ 80,000.00</u>
Total	<u>\$665,000.00</u>
Infaltion @151 per annum	<u>108,000.00</u>
	<u>773,000.00</u>

F. Section 611(a) of FAA 1961 (as amended)

The above cost estimates are based on actual quotations received from a US supplier, local contractors and A&E firms and are considered firm and reasonable at the present time. All plans have been made on the basis of existing conditions in Somalia and are considered adequate and reasonable. Based on the technical analysis for construction, it is considered that the requirements of Section 611(a) of FAA 1961 (as amended) have been met.

SECTION 611 (E) CERTIFICATION

AGRICULTURE EXTENSION, TRAINING AND RESEARCH

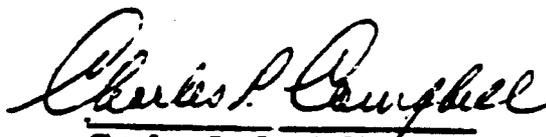
.649-0101

The purpose of the project is to create a viable, integrated self-sustaining National Extension Service. AID will provide eleven technically qualified personnel along with short-term consultants plus other required inputs such as training, commodities and some construction and/or building modifications. The project is primarily directed toward the small farmer in the Bay Region of Somalia, to assist them increase the production of sorghum and corn by at least 100 percent by the end of the five-year project period.

The project is geared to build up the capacity of the Somalia Government to establish and maintain a viable extension service. This will require the development and implementation of an extension training program. Support of this program will require limited construction consisting mainly of pre-fabricated housing and possibly some project-related buildings. By project termination, Somalia will have the human resource capability to maintain and fully utilize the benefits derived from the project. Most future recurring costs will be related to personnel and operation of facilities and will be within the financial resources of the GSDR to support.

As an indication of Somalia's ability to cover recurrent costs, two major projects financed by AID in the 1960's are still functioning effectively. The smoothly functioning projects, the Kisimayu Port and the Mogadiscio Water System, attest to this capability.

This is to certify that the Government of Somalia will have at the end of the project period the capability, the financial and human resources, to operate and maintain a National Extension Service and any facilities constructed by AID financing in support of this project. The GSDR has demonstrated in the past its capability to utilize and support AID projects established in prior years.



Charles P. Campbell
AID Representative

ANNEX VI

LETTER FROM STATE PLANNING COMMISSION

DATED: AUGUST 8, 1978

SUBJECT: PRELIMINARY DRAFT OF THE PROPOSED AGRICULTURAL
EXTENSION, TRAINING AND RESEARCH PROJECT

G 10 NET

JAMHUURIYADDA DIMOQRAADIGA SOOMAALIYA

STATE

PLANNING

COMMISSION

oOo

REF: EA/3DA/3/ 0248: /73

Lama _____ Waxaa ku xiran _____ M-O G A D I S H U: AUGUST 8, 1973.

Jawaabta warq. L. _____

oo _____

Ujeedo:

Dear Mr. Campbell,

SUBJECT: PRELIMINARY DRAFT OF THE PROPOSED AGRICULTURAL
EXTENSION, TRAINING AND RESEARCH PROJECT

I have the honour to inform you that the Government of the Somali Democratic Republic agrees in principle the project aimed to help establish a national extension service to assist the small individual farmers and farm cooperatives in increasing agricultural production. However, we would like the following points to be taken into consideration in finalizing the project document:

1. Training—emphasis should be given to postgraduate and training in fields not offered in our National University for participants going to be sent abroad, while provisions have to be made for participants attending our National University.
2. Extension centre - we feel that there should be some kind of coordination between the World Bank and USAID projects in relation to the construction and other inputs for the farm management and extension training centre. We feel that the US should take over the cost of establishing this centre as well.
3. Operating cost - The US input must also include the foreign component of the operating cost, such as farm supplies, spare parts, etc.
4. Timing - A schedule of timing for the experts and the equipment for the project should also be spelled out in the project document.
5. Oilseeds and Grain legumes - We propose that, from the point of rotation, nutrition and self-sufficiency, oil seeds and grain legumes be included in the scope of the project.

In conclusion we would like the project to be finalized and implemented as soon as possible so that the project activities could be

revised/10/11

realized within the shortest possible time.

Yours sincerely,


(Ahmed Habib Ahmed)
CHAIRMAN OF THE
STATE PLANNING COMMISSION



MR. CHARLES P. CAMPBELL
USAID, REPRESENTATIVE
M O G A D I S H U

ANNEX VII

CABLE - STATE 079867

SUBJECT: SOMALIA AGRICULTURE RESEARCH, EXTENSION, AND
TRAINING (649 0101)

DATE : MARCH 28, 1978

ANNEX VII

NNNN

ACTION COPY

VV ESA942ESA9368PA333

OO PUQMDI

DE RUEHC #9867 032032

ZNR UUUUU ZZR

C 202345Z MAR 78

FM SECSTATE WASHDC

TO RUQMDI/AMEMBASSY MOGADISCIO IMMEDIATE 1235

RUESLM/AMEMBASSY LIMA IMMEDIATE 4532

RUVQC/AMEMBASSY NAIROBI PRIORITY 8282

BT

UNCLAS STATE 279867

AIDAC, NAIROBI FOR REDSO

E.O. 11652: N/A

UNCLASSIFIED

STATE 079867

HM
JMICN
D
ED

TAGS:

SUBJECT: SOMALIA AGRICULTURE RESEARCH, EXTENSION, AND TRAINING (649 2121)

1. AFR BUREAU PROJECT COMMITTEE MET ON MARCH 25, 1978 TO REVIEW PROPOSALS FROM CID AND NUCIA FOR DESIGN/IMPLEMENTATION OF SUBJECT PROJECT. AFTER EXTENSIVE DISCUSSION AID/W MAKING FOLLOWING RECOMMENDATIONS:

(A) FOR MOGADISCIO: REQUEST AVAILABILITY OF OSDR REP. TO PARTICIPATE IN CONTRACTOR SELECTION. IF AVAILABLE, WOULD SUGGEST THAT REPRESENTATIVE(S) ARRIVE AID/W EARLY WEEK OF APRIL 3, 1978 FOR CAMPUS VISITATION AND FINAL SELECTION.

(B) FOR LIMA: REQUEST MILTON LAU FOR IDY AID/W FOR PERIOD OF TWO WEEKS BEGINNING APRIL 3, 1978 TO PARTICIPATE IN FINAL CONTRACTOR SELECTION PROCESS. HOPEFULLY, SOMALIA WILL PROVIDE REPRESENTATIVE FROM MCA OR OTHER APPROPRIATE MINISTRY TO ASSIST IN SELECTION AS WELL AS PARTICIPATE VISITATION TO CAMPUSES.

2. CM/POD/AFR (TO PROVIDE) REPRESENTATIVE TO TRAVEL WITH RESPECTIVE REPRESENTATIVES IN SELECTION PROCESS.

3. PLEASE ADVISE IMMEDIATE. COOPER

BT

#9867

UNCLASSIFIED

ANNEX VIII

AVERAGE MONTHLY AND ANNUAL RAINFALL AT SELECTED STATIONS (mm)¹

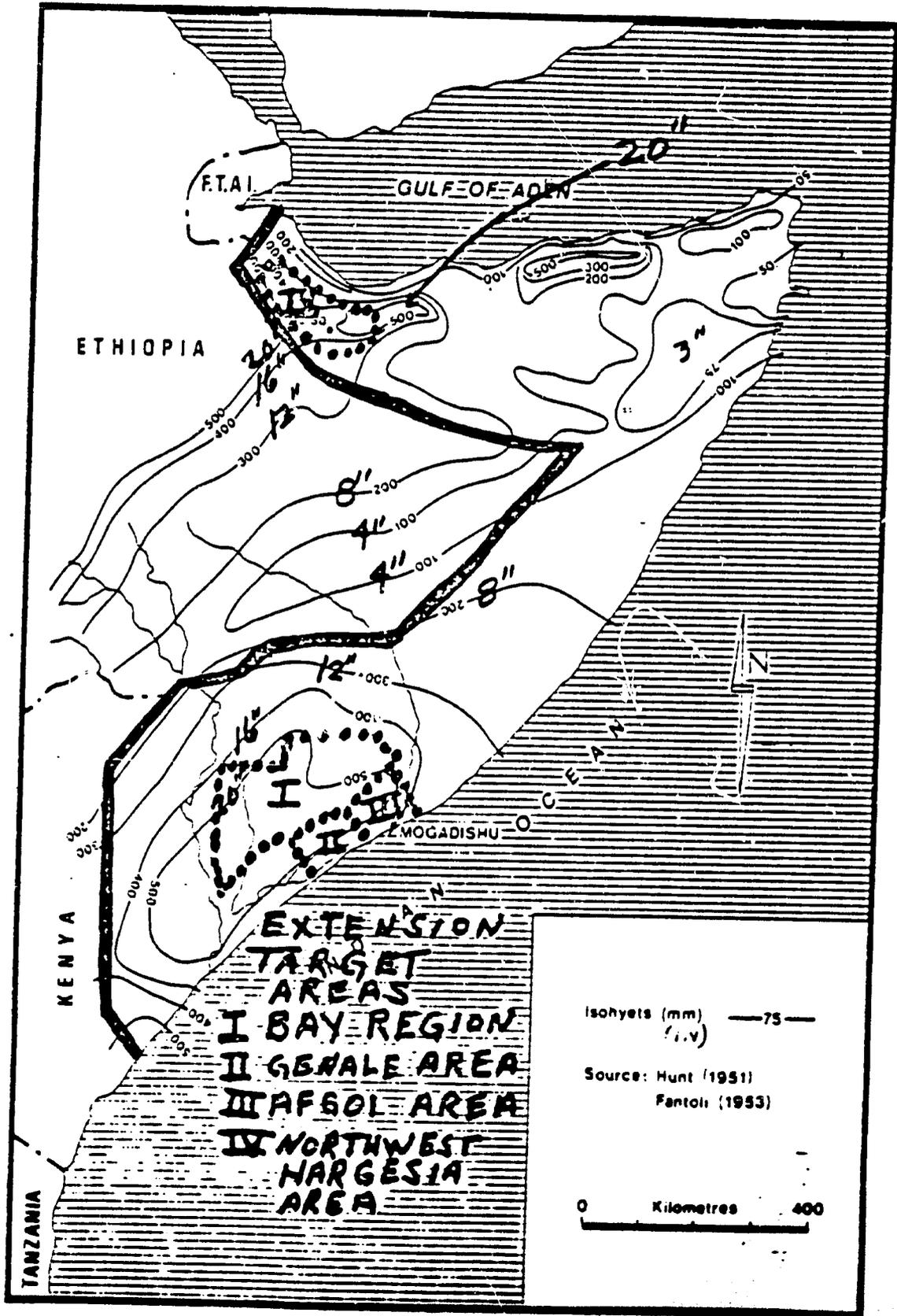
Station	Period of Records	MONTHS												Annual Average
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	
Belet Huen	1964-74	0.0	0.0	2.3	69.0	86.6	16.7	1.2	1.0	5.3	86.8	39.0	1.7	309.6
Baidoa	1954-64	1.0	0.0	30.8	184.0	91.2	10.1	10.0	18.1	9.3	96.3	63.1	27.0	556.5
Afgoi	1964-74	0.0	10.1	6.3	76.0	102.5	69.7	52.8	18.6	6.4	73.1	124.5	25.7	565.7
Mogadiscio	1964-74	0.0	0.0	5.8	39.1	72.3	77.8	74.5	31.1	17.2	52.3	48.2	3.8	422.1
Barbera	1964-72	2.1	1.0	12.7	86.0	55.2	7.0	6.7	0.6	0.2	65.8	93.8	22.7	353.8
Gelib	1953-57	2.8	0.0	4.9	159.7	112.6	47.3	62.6	16.5	3.7	73.1	106.8	55.0	645.1
Margeisa	1963-74	0.8	6.3	44.3	43.7	49.5	32.5	54.5	56.4	54.0	27.6	12.4	1.3	383.3
Borama	1967-74	0.5	25.3	39.0	77.9	50.2	40.0	81.2	117.5	53.3	10.1	14.6	0.0	509.6

1

Taken from Livestock Sector Review and Project Identification, Vol. 1, Summary and Final Report, p. 6, Hunting Technical Services Limited, 1976.

ANNEX XI

Mean annual rainfall distribution and the extension demonstration target areas of the Bay Region and the Genale-Afgoi areas in the inter-riverine area and in the Northwest Hargeesa area.



ANNEX X

EVALUATION PLAN

RATIONALE

Many of the agricultural improvement programs currently underway or being proposed for Somalia lack specific objectives or plans for systemic evaluation or follow-up. The lack of concise, operational objectives inhibits evaluation efforts, and the lack of evaluation adversely affects institutionalization. Much information can be obtained from understanding failure as well as success. Failure to follow through with a rigorous evaluation deprives project personnel, and administrators, with useful information that can be incorporated into future training and programming, and it may fail to point up some underlying socio-cultural constraints which were initially either unknown or unanticipated.

PLAN

The basic data used in evaluating the overall effect of the test program will be obtained from an initial baseline survey of participant and non-participant farmers, and from two follow-up surveys. Longitudinal data from the two matched farmer samples will permit a general evaluation of impact attributable to the integrated program. The first follow-up survey - after the second year of the program - will provide the basis for evaluating and modifying the program in conception or delivery and determining whether the program should be expanded to other target areas or to different farmers. The second follow-up survey will provide the basis for evaluating overall socio-economic changes in farm household (design details presented in the Annex) generated over time by the development effort.

Evaluation following the initial two-year survey will proceed along several lines: (1) a comparison of yield levels over the initial period; (2) adoption and use of required inputs and practices; (3) examination of hectareage under cultivation; (4) income changes; (5) livestock inventory; (6) inventory of consumer goods; and (7) inventory of on-farm resources. This "evaluation in progress" will provide the data with which to identify both the farmers who are complying with project requirements and those who are lagging. For those who don't demonstrate any significant improvement, every attempt will be made to establish the reasons. These analyses should also provide insights into conception and delivery problems and suggest ways of redesigning the present and future programs.

Comprehensive evaluation of the entire program will take place after the three-year period. It will focus on a complete replication of the baseline survey, with whatever additional ex post facto information is desired.

The survey instrument used in the baseline and follow-up surveys will be comprehensive enough to permit an evaluation of impacts beyond those identified for the agricultural sector and which are the primary program objectives. By employing a broader range of evaluation categories, to include a variety of social dimensions, the evaluation effort will permit a determination of the effectiveness of the development strategy being employed for improving the level of living of subsistence farmer households.

Extension activities will be evaluated at several levels and on the basis of several general criteria. Extension staff will be evaluated by project staff and, less formally, by local village leaders and farmers in the test program. Evaluation criteria will be: quantity of effort expended - extent and duration of contact with farmers; performance - the results of their efforts in terms of program objectives; adequacy - how much of the overall extension problem has been solved by the present program; and efficiency - evaluation of extension contribution in light of alternatives. On the latter criterion some attempt will be made to assess the contributions of the extension service to the farmers in the test program by comparing them with the control sample of farmers.

OUTLINE

1. Selection of Target Villages
2. Selection of Farmers
 - A. Test Group
 - B. Control Group
3. Design of Baseline Survey Instrument
4. Interviewers Selection and Training
5. Follow-up I
 - Analysis of Results
6. Follow-up II
 - Analysis of Results

1. Selection of Target Villages

A total of 45 test farms are to be selected in villages from each of the four Districts (Baïdoa, Bar Acaba, Dinsour, and Quansah Dheere) of the Bay Region.

Villages are to be selected on the basis of the following criteria: geographic spread, size and accessibility. Geographic dispersal will provide a wider range of agricultural conditions, greater project visibility, and a broader base from which the program can eventually be disseminated. A concentration, at least initially, on larger villages will make it possible to expand the program much more rapidly once its effectiveness has been determined. At least initially, extension contact with farmers in the program will be frequent and intensive. It will be

necessary, therefore, to select villages which are relatively accessible throughout the growing season. In the initial phase of the program it is critical that regular contact be maintained with farmers; travel problems must be kept to a minimum.

2. Selection of Farmers

A. Test Group

Farmer selection in the target villages will be carried out with the assistance of local village committees. These committees will be asked to suggest names of farmers who might participate in the program. A predetermined number ($N = 15$) of participants in each village will be randomly chosen from this original set of farmers and they will be approached to determine their interests. The program and all that it entails will be explained fully, and farmers will be informed that their participation is voluntary. All reasonable provisions will be made to ensure that no village-level pressure is exerted on them to participate and that they are not an "unrepresentative" sample of farmers. Other possible selection biases must also be guarded against.

B. Control Group

The control sample will be made up of farmers selected from the same villages and will be matched with the target group on the basis of production resources, age, education and family size. Some of the control sample may be obtained from the original set of proposed participants while others may have to be obtained from further searching. For evaluation purposes it is imperative that the control group be as comparable to the target group as possible on the critical variables set out above.

3. Design of Baseline Survey Instrument

The survey instrument will be designed to provide as comprehensive a look as possible at how the program impacts the farm household over the duration of the project. It is expected that the impact assessment will extend beyond the primary intended effect - improved yields and farm income - to include an assessment of impact on a variety of non-economic, non-agricultural aspects of daily life. It is necessary, therefore, to design the instrument so that these types of changes, should they occur or fail to occur, will be detected and measured.

Second, the survey instrument should be designed so as to permit an assessment of any "spillover" of new inputs and cultivation practices to other crops or to other plots planted with the same crop. There is some research which shows that highly integrated and closely supervised production schemes have secondary benefits as well. In other words, there is often a voluntary transfer of knowledge to other aspects of the farm

enterprise. This production package has the potential for affecting this type of spread.

Third, the survey instrument should permit an assessment of how effective the farmers themselves will be in diffusing new knowledge and information to other farmers in the local or neighboring villages. If agriculture is to develop extensively in the area, much of the information will have to spread by word of mouth and by demonstration. This two-step flow of information has been shown to occur in many parts of the world where farmers were favorably disposed to new inputs and practices.

As much as possible the survey instrument should focus on obtaining objective information which could be verified independently and on obtaining directly comparable data over time, but some compromises will have to be made. First, it is generally accepted that alterations in objective conditions will alter perceptual reality as well. Farmers may, for example, in light of agricultural change alter their expectations for their children, their attitudes toward family size, conceptions of female roles, and attitudes toward farming as an occupation and toward rural life. Some portion of the survey instrument should focus on these more socio-cultural dimensions. Second, there will be an occasional need to compromise on the direct comparability of all survey items, particularly where items are relevant at only one time period. This becomes especially important when farmers are being asked questions on the final survey which will assess the potential spread effects. It is irrelevant to ask farmers about their diffusion of information from a program prior to its initiation; it is not at all irrelevant, though, to ask these types of questions upon completion of the program.

Items which make up the survey instrument should reflect the cross-disciplinary nature of the project. It is likely that a large number of the items will focus on the economic and social aspects of change, although other data will also be collected.

Some of the suggested areas for which questions will be developed are:

- A. Size of farm and number of hectares allocated to specific crops.
- B. Number of livestock.
- C. Inventory of resources: farm implements available, animal power, family members employed in farming, use of off-farm labor, etc.
- D. Current cropping practices.
- E. Cost yield data.
- F. Allocation of time to various cash crop activities.
- G. Family characteristics: size, age, educational level.

- H. Household decision-making processes.
- I. Current cultivation practices and use of inputs.
- J. Inventory of consumer goods.
- K. Food consumption; nutritional levels.
- L. Allocation of time to social activities; recreation, visiting.
- M. Radius of mobility, distance travelled to engage in various activities.
- N. Socio-cultural dimensions: attitudes toward education, urban-rural life, expectations for children, ideal family size conceptions, etc.

4. Interviewers Selection and Training

Interviewers will be required who can relate to rural people and who may have had some experience in data collection. There is a sufficient number of students in the Faculty of Education and the Faculty of Agriculture which could meet these criteria. Many have undertaken small research projects for the senior papers required for graduation; others have been employed on research projects. The problem, though, is that higher education students are available only during their vacation period which runs from early June to mid-July. The alternative to using university students is to use secondary school graduates currently employed at the Agricultural Research Center, in the Ministry of Agriculture and in other related ministries. The statistics section of the Ministry of Planning, for example, has conducted household surveys in Mogadiscio and may be able to provide trained interviewers. With the proper groundwork, it should not be too difficult to obtain their release for the time when the survey is conducted. They have been used in the past for pre-testing FAO surveys.

There are, thus, some individuals with an exposure to survey work who can be trained in the use of the baseline instrument. It is very important that only those interviewers be selected for training who show promise of being able to relate to farmers, are not inconvenienced by living in villages, and who have the communication skills to be able to relate to farmers and the survey staff. Since the areas are linguistically homogenous there should be few language difficulties, though this must be a matter of attention.

Training will have to be provided to familiarize interviewers with items in the questionnaire and its format, and they will have to be given intensive training in interviewing techniques. Before any actual field work is begun each interviewer should conduct several test interviews with paid respondents under the watchful eye of the trainers. A well-

designed interviewer selection and training process should minimize many of the field problems which could arise.

5. Follow-up I

Analysis of Results

A follow-up survey should be undertaken after two years (four growing seasons) experience with the project. It will include all the participating farmers and the control sample, although it may not involve as extensive an investigation as conducted in the baseline study. This evaluation in progress might be based on a subset of data collected in the baseline survey. The purpose of the first follow-up is both to identify any emerging problems and to determine whether the project should be expanded to adjacent villages and additional farmers. Analyses of these data will provide a preliminary assessment of how well objectives are being met and whether expansion is feasible at that time.

The survey instrument in the first follow-up can be shortened to permit ease and speed of interviewing and should concentrate on collecting yield data and information on the adoption practices of farmers. The assumption underlying the project is that agricultural development ultimately generates improvements in social conditions at the household level, and for this reason it is imperative that farm output and income be monitored and increased. This can be assured only by intensive extension efforts and routine monitoring of farmer activities. Follow-up I will provide an early and systematic appraisal of the thrust taken.

Generally, the lag between agricultural improvement and social change is several years or longer and it might thus be premature to expect much change on quality of life dimensions over a two-year period. A thorough look at these evaluation aspects might be dispensed with in the first follow-up survey.

6. Follow-up II

Analysis of Results

A second follow-up will be conducted for the initial test group after the third year and constitute the basis for evaluation of the entire agricultural improvement effort. Contact will be re-established with each farmer by the survey team and the original baseline questionnaire will be administered. The evaluation design will permit an assessment of the program impact on farm productivity income and on the overall standard of living of the test-farm household over time. The test group-control group comparison will provide the assessment of impact attributable to the test program.

EVALUATION SEQUENCE

- Expected Time Frame:**
- 1 to 2 Months** 1. Survey Questionnaire Construction: The major collaborators on survey design and formulation of survey content are likely to be the project Agricultural Economist and Rural Sociologist, although other disciplines should be involved as well.
- The questionnaire should be precoded and reproduced in a quantity sufficient for pre-testing. Duplication facilities either in the US or Somalia can be used. Initial translation and back translation can be done by Somali students in the US.
- 3 Weeks** 2. Selection of Test Program Sites: One village will be selected in each of the seven areas in which the program will concentrate: four districts in the Bay Region, two districts in the Shabeellaha Hoose Region, and one district in the northwest Togdheer Region. In each of these administrative units one test program village will be selected, most likely the largest village near the largest town.
- 3 to 4 Weeks** 3. Farmer Selection: Farmer selection will be preceded by establishing contact and developing rapport with district officials and the economic committees of the local targeted villages. Farmer selection will be conducted through local village governing committees, but with special concern for the types of candidates who are proposed. They should not depart much from what is estimated to be the model farm type in the areas. A control sample of farmers will be matched with farmers in the test program. Approximately 15 control and 15 test farmers will be selected in each location.
- 1 to 2 Weeks** 4. Interviewer Recruitment and Training: Intensive training in interviewing techniques and actual interviewing are essential. Interviewers will pre-test questionnaire on paid farmer respondents not in the test program in order to gain interviewing experience and to test the survey instrument.
- 2 to 3 Weeks** 5. Final Questionnaire Construction: Results from interviewer debriefing are incorporated into new questionnaire; it is assembled and reproduced in sufficient quantity. From the pre-test there should be some idea of a desirable time-length for the interview, and the time of day when interviewing would be easier. Some knowledge of farmers' work schedule is essential.

1 to 2 Months 6. Conduct of Baseline Survey: Interviewing can be done by two interview teams of three to four individuals each.

1 Month 7. Data Reduction: Assemble sample profiles; disseminate profile data to research and extension staff.

Follow-up I

1 Week 1. Revise and Amend Questionnaire: Translate additions, delete portions that are deemed unnecessary in the first follow-up.

1 to 2 Weeks 2. Interviewer Selection and Training

2 Weeks 3. Questionnaire Reproduction and Assembly

1 to 2 Months 4. Conduct Survey

1 Month 5. Data Interpretation and Summarization

6. Evaluation of Progress

Follow-up II

2 Weeks 1. Revise and Amend Questionnaire: Incorporate any items which are to be obtained only on follow-up II survey, and any items which may have been dropped from the first follow-up.

1 to 2 Weeks 2. Interviewer Selection and Training

2 Weeks 3. Questionnaire Reproduction and Assembly

1 to 2 Months 4. Conduct Survey

1 Month 5. Data Analysis and Interpretation

6. Project Evaluation

Annex G

Interrelationships of Donor Efforts in the Agricultural Sector

The development of a viable extension training and research program for the agricultural sector is a long term program requiring varied interventions from numerous donors. Table 1 presents a simplified schematic of how the AID impact project and other planned projects fit into the overall schema of developing an extension service.

It is evident from the schematic that there are two parallel and to some extent inter - related thrusts to the program. The top of the schematic deals with a "production" program which has extension services as one of its components but whose end result is increased production. The center and bottom of the schematic illustrates the " institution building" or system development portions of the overall program.

The GSDR recognizes the need for these two parallel but inter-connected series of actions to accomplish their goals and has asked the donor community to assist them in getting both thrusts underway.

The IBRD has developed and appraised two projects, the Bay Region Development Project in the production stream and the Agriculture Extension and Research project in the institutional development stream. Attachments 1 and 2 present summaries of these two projects. The IBRD is searching for co-financing for these two projects. It has received commitments from the Islamic Fund for Agricultural Development and the African Development Bank and has requested that AID supply the Technical Assistance, Training and commodities for the two projects.

The present AID project is phase I of the Bay Region project and has been discussed at length with the IBRD and we have adapted their approach. The project will have secondary benefits in gaining grass roots experience which can be incorporated into the larger, long term National Extension Program. Ultimately the national program will replace the Ministry of Agriculture as the coordination, training, backstopping and research unit for regional projects.

Other planned AID project which will have direct inputs into the development of this program are the projects which provide our inputs into the expanded Bay Region Project and the National Extension and Training Project. Furthermore, after a research

plan is developed as an output in the early years of the national extension project, AID may be interested in financing a portion fo the research activity.

Three other projects planned by AID are likely to affect the Bay Region project. Our health priject will be providing health services in the Bay region and our water resource development project may provide studies and well point development in the Bay Region. Additionally, through our planned participation in the IBRD rangeland program we will be providing technical backstopping in livestock and rangeland development for the Bay Region Project.

Ultimately, as the projects move along the time line, linkages between the institution building stream and the production stream will become much stronger as a true delivery and feedback systems are developed to link the antral level tightly to the field. Before these links can be developed the various components must be made operational according to the plan.

IBRD BAY PROJECT

DESCRIPTION:

The project is an integrated rural development project for the Bay region. It addresses several major constraints as identified by the FAO under their joint study program with the IBRD and as modified by the Bank appraisal team. The primary thrust of the project is on rainfed agriculture emphasizing the linkage between the livestock sector and the agricultural sector. The project includes the following components:

1. Adaptive research in both range and crops;
2. Agricultural extension with both outreach and training included;
3. Seed multiplication of improved varieties;
4. Veterinary medicine;
5. Ground water development using both deep wells and basins;
6. Roads for access to the area; and
7. Range management.

The project anticipates beginning with pilot programs in certain villages based on a 7,500 hectare crop program including some 1000 farm families. The center of the scheme will be the one main deep well put into the area. A minimum technical package consisting primarily of improved cultural practices, crop rotation, animal traction and deep plowing will be promoted by the two extension agents assigned to the pilot area. More advanced technical packages including imported farm inputs are deemed to be impractical in the area at the present time. The package to be extended is based upon the earlier Wyoming State program which appeared to be relatively successful.

The extension agents will be trained and supervised by district and regional extension staff who are keyed into the National Extension Service (NES) headquarters established under the other IBRD project. The packages to be extended will be passed down from the NES and feedback will be passed back up from the extension agents to stimulate modifications in the package.

The adaptive research component will conduct adaptive research in the area on the technical package. It will focus primarily on testing new varieties and cultivars, husbandry practices, rotations (especially concerning the inclusion of pasture fallows, animal traction use and farm implements, and, improvements to the system of on-farm storage.

The agricultural activities will be complemented by a parallel range and livestock program which will emphasize controlled grazing. Each crop pilot village will also have an approximately 75,000 ha. grazing pilot served by two deep wells. This area is to be demarcated and managed as a controlled grazing plot. This will serve to keep the animals off the cropped land and to preserve some of the crop residues for reincorporation into the soil to maintain organic matter levels. This is deemed to be of critical importance in a minimum package approach which does not utilize chemical fertilizers..

LINKAGE TO THE OTHER IBRD PROJECTS

The Bay project relies on the Agricultural Extension and Farm Management Training project for backstopping of its extension staff by the NES and ultimately for training of their senior staff and district officers at the

-2-

Farm Management and Extension Training Center. It is anticipated that the technical package will be defined at the NES and passed to the region for final testing and distribution. In the early years before the NES is totally functional the package will be developed in the region and until the FMETC is operational the staff will be trained in the field location by project senior staff assisted by NES staff as available.

The Bay project also relies on the Central Rangelands project for the majority of the technical expertise in Range management and Livestock. Since this project is already underway the experience and staff of the Central Rangelands project can be very helpful to the Bay project. The training center under the Rangelands project will be utilized to train certain senior staff of the Bay project.

LINKAGES WITH THE PROPOSED AID PROJECT

The proposed AID Agricultural Extension, Training and Research project is basically providing the extension component of the Bay project. It is somewhat larger than the component of the Bay project in that it proposes 2-3 times as many technical assistants and considerably more training but is focusing on the same area for the most part. The primary conflict between the AID project and the IBRD project is that the AID project is calling for a much more advanced technical package based on imported agricultural inputs. This is an issue which must be resolved before real cooperation is possible.

IBRD POLICY REGARDING COOPERATION:

The Bay project, as developed by the IBRD is too large for them to finance on their own and they are promoting cofinancing with other donors. If we could come to agreement on the question of the technical package and iron out the minor differences in scale, scope and approach, then they would be pleased to see AID pick up the extension, training, and research components of the project. Furthermore, if AID is moving forward with the water resource development project they would be happy to see us involved in the water development component of the project. We appreciate the facts that the US is probably the best source for both technical assistance in extension for dryland agriculture and livestock and in water development in semi-arid areas.

IBRD AGRICULTURAL EXTENSION AND FARM MANAGEMENT TRAINING

DESCRIPTION:

The project proposes to establish a national extension service focusing both on small farmers and on state farms. It starts with the basic thesis that the present training provided by the university and the agricultural secondary school is not truly applicable to the extension of technical packages in the field. Thus they see a need to provide further practical training to graduates of these two institutions. In order to accomplish this training they will develop a Farm Management and Extension Training Center (FMETC) at Afgoi. The center will be staffed by both expatriates and Somalis and will provide a more practical training for those agriculturalists whom are going to regional and district levels. The project also will create a National Extension Service (NES) which will be responsible for developing and managing extension in the country. Under the NES component the project would provide financing for upgrading 2 extension training centers for the training of field extension agents. These two centers would be located in Jannale and Bonka.

The project will also establish a Farm Management Advisory Service (FMAS) which will provide backup and follow on training for farm managers on large state farms.

The project includes funding for management, monitoring and evaluation as well as overseas training for some 20 Somalis.

LINKAGE TO OTHER IBRD PROJECTS:

The closest linkage is between this project and the Bay region Rural Development project. The Extension project will provide the basic backstopping for the extension service under the Bay project through NES. Ultimately the FMETC will provide the training for the senior staff of the Bay project as well as some in service training for the staff. The technical package to be tested in the Bay region will be identified in the NES and modifications based on the findings of the Bay project will be developed by the NES.

LINKAGE TO PROPOSED AID PROJECT:

The proposed AID project will include extension staff who would be managed and backstopped at a central level by the NES. Furthermore the primary specialists in various agricultural disciplines will be located at the NES and these skills will be drawn upon in developing technical packages and in training the staff under the AID project. The NES would serve as the primary link to international research efforts and ultimately to Somalian national research programs which may be strengthened under future projects.

IBRD POLICY REGARDING COOPERATION:

The bank does not have sufficient funds to wholly finance this large project and is looking for cofinancing from other donors. They are particularly interested in finding a bilateral donor interested in funding the technical assistance component of the project. If AID were to pick up the extension portion of the Bay project then it would be a reasonable management approach to pick up the NES as the backstop organization for the extension in the field. The bank also makes a plea for one donor providing the IA for both the NES and the FMETC in order to keep the extension principles consistent between the training and the actual extension service.

SOMALIA AGRICULTURAL DEVELOPMENT SCHEMATIC OF PRESENTLY PLANNED PROJECTS (AID AND IBRD)

