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OFFICIAL PROJECT
DOCUMENT

AGRICULTURAL DELIVERY SYSTEMS

(AID No. 649-0112)

PROJECT REVISION

August, 1983

USAID/Somalia

PROJECT DATA SHEET

1. TRANSACTION CODE

A = Add
 C = Change
 D = Delete

Amendment Number

1

DOCUMENT CODE

3

COUNTRY/ENTITY
SOMALIA

3. PROJECT NUMBER

649-0112

4. BUREAU/OFFICE

AFR

06

5. PROJECT TITLE (maximum 40 characters)

Agricultural Delivery Systems

6. PROJECT ASSISTANCE COMPLETION DATE (PACD)

MM DD YY
09 31 08 6

7. ESTIMATED DATE OF OBLIGATION

(Under 'B:' below, enter 1, 2, 3, or 4)

A. Initial FY 79

B. Quarter 4

C. Final FY 83

8. COSTS (\$000 OR EQUIVALENT \$1 = 15 So Sh)

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	1,500		1,500	8,426	209	8,635
(Grant)	(1,500)	()	(1,500)	(8,426)	(209)	(8,635)
(Loan)	()	()	()	()	()	()
Other						
U.S.						
Host Country		500	500		3,800	3,800
Other Donor(s)	2,070	1,380	3,450	12,700	8,100	20,800
TOTALS	3,570	1,880	5,450	21,126	12,109	33,235

9. SCHEDULE OF AID FUNDING (\$000)

A. APPRO- PRIATION	B. PRIMARY PURPOSE CODE	C. PRIMARY TECH CODE		D. OBLIGATIONS TO DATE		E. AMOUNT APPROVED THIS ACTION		F. LIFE OF PROJECT	
		1. Grant	2. Loan	1. Grant	2. Loan	1. Grant	2. Loan	1. Grant	2. Loan
(1) FN	143	012		7,752	-	883	-	8,635	-
(2)									
(3)									
(4)									
TOTALS									

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

11. SECONDARY PURPOSE CODE

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

A. Code

B. Amount

13. PROJECT PURPOSE (maximum 480 characters)

Increase indigenous food crop production through a strengthened agricultural extension capability linked to applied agricultural research.

14. SCHEDULED EVALUATIONS

Interim MM YY MM YY Final MM YY
 12 82 03 85 08 86

15. SOURCE/ORIGIN OF GOODS AND SERVICES

000 941 Local Other (Specify)

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

Modify the Project design, budget and implementation plan in accordance with the rationale and as described herein.

17. APPROVED BY

Signature

Title

Director, USAID/Somalia

Date Signed

MM DD YY

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

MM DD YY

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I. The Setting of the Project

Historically a society of nomadic herdsmen and coastal traders Somalia is experiencing the often traumatic process of adaptation to the modern world. This is made more difficult by the country's under developed resources, a population growth rate that is estimated at near 3% per year, a largely oral culture, and the ever present threat of devastating drought.

A. Physical Features

Somalia covers a semi-arid to arid area of some 638,000 km² of which 42% are classified as unusable, 45% as rangeland, and 13% as potentially arable land. Except in the mountainous, semi-mediterranean northwest and northeast regions, the climate is tropical-equatorial and windy. Bimodal and erratic rainfall ranges from less than 55 mm to an occasional 600 mm annually, and averages less than 450 mm in the agricultural areas. Only two rivers of importance, the Juba and the Shabelle, flow through the country. Both originate in Ethiopia, and one of them flows only in 10 out of 12 months, on the average. Groundwater resources, though largely unexplored by modern methods, are believed to be limited and of variable quality.

B. Agriculture

Agriculture in Somalia is a high risk activity. Partial or total crop failures caused by inadequate rainfall reportedly occur in some parts of the country in 2 out of 5 years. Only 700,000 hectares (ha), or less than 10%, of the 8.2 million ha of arable land are believed to be cultivated annually. Some 50,000 ha (7%) are under controlled irrigation, mostly in the Shabelle River Valley; 110,000 ha

(16%) are subject to flood recession cultivation; and the remaining 540,000 ha (77%) are wholly rainfed.

Rainfed and flood recession agriculture occupies an estimated 195,000 families that are widely scattered and operate essentially at the subsistence level. Their technology is rudimentary, involves no marketed inputs, and relies on family labor and simple hand tools, most commonly a short-handled hoe. Sorghum, grown in association with various pulses, is by far the most important crop, followed by maize and sesame in the higher rainfall areas. Together, these three crops account for 90% of the cultivated area.

Irrigated agriculture is practiced mostly in large units that average 600 ha in size which are generally state-controlled and partially mechanized. Few irrigated farms are privately owned and operated. On some irrigated farms, bananas are produced primarily for export and sugar cane is grown for local industrial processing. Citrus is also a popular crop. In most cases, however, maize, rice and sesame are the major outputs. Starting in the early 1970's, and especially after the severe drought of 1973-75, the state farms became a major parameter in the government's attempt to achieve greater food security. Although they have been favored by government investments and preferential, if not exclusive, access to modern production inputs, these farms have been plagued by mismanagement and a shortage of qualified technical personnel. They have become a burden on the national budget.

C. Agricultural Institutions

The lack of qualified manpower also characterized the Ministry of Agriculture and its various subdivisions, including the Agricultural Research Institute (ARI), and the Department of Production and Extension which includes the Extension and Training Service and the State Farm Production Service. During 1977-78 when the multi-donor Project was being designed, the Extension and Training Service had no field agents, and was thus totally incapable of helping farmers to improve their production systems. This was also the case with the Agricultural Research Institute, whose limited and unstable staff was virtually confined to the central, irrigated station at Afgoi and was removed from the problems of rainfed production.

The agricultural training institutions were equally inadequate. At the university level, the Faculty of Agriculture of the University of Somalia, which was established in 1971 with assistance from Italy, by 1977 had produced only 21 graduates who were rated as having a reasonably good theoretical knowledge of agronomy and related subjects, but no practical work experience. The teaching staff at the Faculty consisted largely of Italian visiting professors, the curriculum contained no courses in extension methodology and, of course, Italian was the language of instruction.

Below the university level, the Afgoi Agricultural Secondary School which was created in 1973 with accommodations for 240 students, had not produced any graduates by 1977. Only 38 students were expected to receive their diplomas in 1978. The 4-year school

curriculum was judged to be weak and limited, and the teaching staff inadequate both in quantity and quality. In short, these two main training institutions were considered incapable of producing the qualified scientists, technicians and managers needed to staff the agencies serving the agricultural sector.

II. The Multi-Donor Project

The USAID/Somalia Agricultural Delivery Systems Project is the AID-financed component of a larger set of activities that the Government of Somalia is currently implementing with complementary assistance from IDA, ADF and EEC under the title: Agricultural Extension and Farm Management Training Project. The goal of these multi-donor supported activities is to increase production of the main food crops grown in the country; namely, sorghum, maize, rice and sesame, by raising their average yields and by expanding the cultivated land area.

The Agricultural Extension and Farm Management Training Project was designed in 1977-78 by IBRD with the collaboration of UNDP/FAO and AID. At a meeting that was held in Mogadishu on May 3, 1979, representatives of the Government of Somalia (GSDR) and the participating donor agencies accepted the concept of the Project as well as the recommendations contained in the IBRD Appraisal Report regarding the components of the Project and the arrangements for their implementation and financing. The agreements reached are outlined below.

A. Project Concept

The Project would be based on the following propositions:

1. Somalia agriculture being mainly rainfed, the country could not hope to achieve self-sufficiency or self-reliance in food by continuing to place exclusive emphasis on irrigated agriculture.

2. The main constraint to food crop production was the failure of producers, whether on the small private farms or on the large, State-controlled farms to use adequate technology.

3. In the case of State farms, this failure was compounded by incompetent and inefficient management.

4. In spite of a severe shortage of qualified agricultural manpower and a very limited capability in agricultural research, significant increases in production could be achieved over a period of five to seven years by placing "expatriate" technicians in key positions of responsibility and by using available research recommendations and common sense answers to failures in the farming systems.

5. In the longer term, a cadre of well-trained Somali technicians and a nationwide program in applied research would be required to sustain the increases in production, and

6. In both the short and longer term, better monitoring of activities in the agricultural sector would be required.

B. Project Components

1. The National Extension Service (NES): In order to improve the production technology of the private farmers, the NES would be strengthened through:

- a. the establishment of NES headquarters at Afgoi;
- b. the upgrading of two extension training centers (ETCs), one each at Bonka and Janale, to train field extension agents; and,
- c. the introduction of an extension methodology which emphasized regular contact with farmers and continuous training of extension personnel.

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2. The Farm Management Advisory Service (FMAS): To improve the performance of the State Farms, a Farm Management Advisory Service would be established at Afgoi. It would become, ultimately, a branch of the NES. Its functions would be to:

- a. provide technical and managerial back-up to existing and newly trained farm managers; and,
- b. advise government on large scale farming and related issues. The FMAS would operate a 400 ha Demonstration State Farm at Janale and would have access to two other existing State Farms nearby to update their management.

3. The Farm Management Extension Training Center (FMETC): A Farm Management and Extension Training Center, including a 60 ha farm, would be built at Afgoi to provide both classroom and practical training to university and high school graduates in agriculture prior to their employment in the NES as regional officers, subject matter specialists, and district officers, or in the FMAS, as managers, assistant managers, and field managers for the State Farms.

4. Training Abroad: A program of training abroad would be carried out to prepare the Somali technicians who would eventually replace the expatriates and to otherwise strengthen the public agencies serving agriculture. The program would include:

- a. post-graduate training for 38 Faculty of Agriculture graduates;
- b. study trips for 52 District Extension Officers and six senior NES and FMAS personnel, and,
- c. field visits for six senior staff members of the Ministry of Agriculture.

5. Research Strategy: A master plan for strengthening the Agricultural Research Institute and its links with extension would be elaborated. It would serve as the basis for developing research programs for later implementation.

6. CSD and AASS: Technical assistance, training abroad and material and equipment would be provided to strengthen the Afgoi Agricultural Secondary School (AASS) and to the Central Statistics Department (CSD) of the State Planning Commission. The school would be a major supplier of trainees to the FMETC, while the CSD would contribute to the proper monitoring of agricultural sector activities.

7. Project Management Unit (PMU): A Project Management Unit would be established at Afgoi to implement the Project and monitor its progress on behalf of the Ministry of Agriculture.

C. Implementation Arrangements

1. The PMU would be created through publication of a decree. It would consist of a Somali Project Director who would be assisted by expatriate Technical and Financial Managers. The PMU would also require the services of consultants for procurement of goods and services and for supervision of civil works.

2. Internationally recruited staff for the NES, the FMETC and the FMAS would assume full technical responsibility for the running of their particular units until such time when properly trained Somali technicians would be available to take over the responsibility.

3. All internationally recruited personnel would be responsible to the heads of their respective agencies who, in turn, would be responsible to the Project Director through the Technical Manager.

4. Two Somali University graduates would be assigned to the project for every internationally recruited specialist.

5. Establishment of the NES would be phased over a period of seven years. NES operations would be initiated in areas close to the Afgoi NES headquarters and extended progressively to other areas.

D. Critical Implementation Steps

<u>Date</u>	<u>Step</u>	<u>Agency Responsible</u>
9/79	PMU Senior Staff Appointed	GSDR/IDA
	DSF Manager Appointed	GSDR/IDA
9.79	PMU Consultants Appointed	GSDR/IDA/ADF
10/79	Terms of Reference for Research Strategy Approved	GSDR/IDA/USAID
11/79	Procurement of DSF Machinery and Equipment	GSDR/ADF
12/79	Procurement of Vehicles, Equipment and Supplies for FMETC, NES, ETCs, FMAS	GSDR/IDA/ADF/USAID
	FMETC Principal Appointed	GSDR/USAID
1/80	Contract Civil Works Awarded	GSDR/ADF
	Research Strategy Team in Field	GSDR/USAID
2/80	NES Personnel on Board	GSDR/USAID
	FMAS Personnel on Board	GSDR/IDA
5/80	Training Abroad Program submitted for Approval	GSDR/IDA/USAID
5/80	Start of Civil Works at Afgoi, Janale and Bonka	GSDR/ADF
9/80	Research Strategy Report Submitted for Review	GSDR/IDA/ADF/USAID
1/81	FMETC Staff on Board	GSDR/USAID

B. Project Cost and Financing

The cost of the Project during the initial five-year investment period was estimated at \$32.4 million to be financed as indicated in the following tables:

Table I by Source (\$)

	<u>Amount</u>	<u>% Total</u>
GOS	3.9	12.3
EEC	1.5	4.6
AID	7.7	23.4
ADF	8.8	27.4
IDA	<u>10.5</u>	<u>32.3</u>
TOTAL	32.4	100.00

Table II by Component (\$)

	<u>Amount</u>	<u>% Total</u>
FMETC	7.29	22.5
FMAS	5.86	18.1
NES	11.32	34.9
PMU	4.68	14.5
AASS	1.69	5.2
CSD	1.43	4.4
Research	<u>.13</u>	<u>.4</u>
TOTAL	32.40	100.0

Table III by Item and Source and Component (\$)

	<u>Amount</u>	<u>%Total</u>	<u>NES</u>	<u>FMETC</u>	<u>FMAS</u>	<u>PMU</u>	<u>CDS</u>	<u>AASS</u>
Technical Assistance	9.8	30.1	AID	AID	IDA	IDA	IDA	EEC
Training Abroad	1.8	5.6	AID	AID	IDA	IDA	IDA	EEC
Commodities	3.6	11.3	AID	AID	ADF	IDA	IDA	EEC
Civil Works	7.2	22.1	ADF	ADF	ADF	ADF	-	-
Local Costs	<u>10.0</u>	<u>30.9</u>	IDA	IDA	IDA	IDA	IDA	-
TOTAL	32.4	100.0	GSDR	GSDR	GSDR	GSDR	GSDR	GSDR

III. The AID-Financed Component

The AID-financed component of the multi-donor project is described in an AID Project Paper entitled: Somalia Agricultural Delivery Systems Project (649-0112). This Project was approved on July 27, 1979 and a grant, not to exceed \$7.752 million, was authorized for its implementation. The original project agreement was signed on August 18, 1979, obligating \$1.5 million. The balance of the grant was obligated through three subsequent amendments to the agreement as follows: May 28, 1980: \$2.0 million; December 23, 1980: \$1.6 million; and May 27, 1981: \$2.652 million. Thus the Project became fully funded.

Through the project agreement, AID is committed to the financing of: (1) the technical services needed for the elaboration of the agricultural research strategy; and, (2) the technical assistance, the training abroad and some of the vehicles, machinery, equipment and miscellaneous other items required for the establishment of the NES and FMETC, as summarized in the table below.

USAID Contribution (\$000)

	<u>Total</u>	<u>NES</u>	<u>FMETC</u>	<u>Research strategy</u>
Technical Assistance	3,240	1,440	1,800	-
Training	866	506	360	-
Commodities	1,371	835	526	-
Research Strategy	111	-	-	111
Contingencies	455	225	218	12
Inflation	<u>1,709</u>	<u>851</u>	<u>825</u>	<u>33</u>
TOTAL	7,752	3,857	3,739	156

IV Implementation Experience

Although significant progress has been made in the training abroad of Somali staff, implementation of the crucial components of the multi-donor project, namely: the NES, the FMAS and the FMETC, has been marred by considerable delays and problems. With one year remaining in the planned, five-year life of the project, it is now quite doubtful that original objectives can be achieved in the planned project life.

A. Delayed Civil Works

The ADF financed civil works include the FMETC plant and a 60 ha irrigated farm, the Demonstration State Farm at Janale, the Extension Training Centers at Bonka and Janale, Regional NES offices, the Afgoi national headquarters for the NES and the FMAS and, in all these locations, numerous staff houses. Plans were that construction of these facilities would begin in May 1980. Actually, work on the sites began only in late February 1983, almost three years behind schedule.

B. Delayed Technical Assistance

The success of the project was predicated on, among other things, the timely recruitment of a sizeable contingent of expatriate technicians. With regard to the NES and the FMETC, it was planned that a team of four specialists would assume technical responsibility for the NES in February 1980, while another team of seven would begin the training program at the FMETC in January 1981. Actually, a host-country contract for the provision of these technical services was concluded with Utah State University in September 1981, two years late. The proposed Technical Director of the NES was fielded that same month, followed by the Communication Specialist in February 1982 and the Plant Protection Specialist in September 1982. The key position in Farming Systems was never filled. A similar pattern was followed in the case of the FMETC specialists and, again, one position, that of irrigated production agronomist, has remained vacant.

C. Unavailability of Trainees for the FMETC

The FMETC was planned to offer a two year program in which 45 Agricultural Secondary School graduates and 30 Faculty of Agriculture graduates would enroll annually. The first year would be divided equally between classroom work and field work, while the second year would be one of internship in the FMAS or the NES. These expected enrollment figures exceeded the average number of graduates produced each year by the two formal education institutions respectively. Moreover, few, if any, of the Faculty of Agriculture graduates who have received their college training in Italian have been proficient in English, the intended language of instruction at the FMETC.

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In other words, the FMETC which was to train the staff of the NES and the FMAS, has not been established. Although a classroom building was leased in Mogadishu, the expected trainees have not been available, nor have the facilities needed for practical work. The system is still only a concept, and is likely to remain so-even though the physical plant may presently be constructed.

D. Lack of Improved Technology

The designers of the project assumed that a number of sound research recommendations were available which, in combination with common sense, could be used by the extension service and the FMAS to raise productivity without increasing risks to the producers. Actually, few recommendations, agronomically and economically adapted to Somali conditions, have been identified. Consequently, extension messages have been based largely on recommendations that have not been verified and on the U.S. experience of the expatriate specialists which, although considerable, is of only marginal use to Somali producers. This is especially true for the small rainfed farmers who normally practice mixed cropping and rely on simple hand tools, and who seldom have access to good quality seed.

The designers of the multi-donor project also recognized that an applied research program was a fundamental requirement for any permanent extension service. Accordingly, the project provided for the elaboration of a research strategy in the first year (1980) of project implementation. However, no provision was made for the strengthening of the existing research institute.

Actually, following two unsuccessful attempts to recruit the technical assistance needed for the elaboration of the research strategy, USAID proposed that the GSDR request assistance from the International Service for National Agricultural Research (ISNAR). ISNAR fielded a team of experts in April - May 1983 and the first phase, a strategy statement, was completed and presented to the Government in August. ISNAR has agreed to address phase II, the definition of priority research activities, beginning in November 1983. This phase will require financial assistance from USAID and is elaborated upon below.

E. Inappropriate Extension Methodology

The project paper prescribed that the NES would adopt a methodology that emphasizes continuous training of extension personnel and regular contact with farmers. This Training and Visitation (T&V) System called for NES headquarters staff to define the messages that should be transmitted to farmers over a given period of time, and to communicate these messages to the regional and district extension officers at monthly training sessions. These officers, in turn, would hold fortnightly training sessions for the field extension agents who would be expected to visit a predetermined number of farmers daily, four days a week. The T&V system also assumed the existence of a network of research stations whose staff would develop and continually expand the content of the messages.

Experience to date indicates that the T&V methodology may not be appropriate for Somalia because of the large size of the country, its poor road network, the high cost of fuel, and the shortage of skills and facilities for vehicle maintenance and repair. This shortage of mechanical skills is so critical that it has been necessary for the project to recruit an expert U.S. mechanic to organize a garage and train its staff. Also, in the absence of improved technology that has been reliably adapted to local conditions, and in the absence of the capacity to produce such technology, both the need for and the high cost of the training sessions may well be questioned.

F. PMU - Contractor Conflicts

Because of the random fielding of the specialists assigned to the NES and the FMETC, and because it was not possible for them to perform their intended function, no distinctive identity has been established by the two groups of contractor personnel. Under the strong leadership of the initial Extension Specialist who was intended to serve as Technical Director of the NES, the USU technicians--with very little LDC experience to draw from--tended to view themselves and to operate as one team, and the PMU came to view them in the same light. In short, contrary to the project concept, the FMETC specialists were absorbed defacto into the NES. This fusion of the two teams has inadvertently encouraged a more rapid deployment of the NES than was planned or was warranted by the human and material resources available. In the process, the USU technicians were called upon to perform ad hoc tasks outside of the project description, and otherwise play the role of trainers and supervisors of NES field agents, a role they were neither

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intended nor equipped to play. Not surprisingly, conflicts have arisen between the PMU and the USU group which have prevented the development of a harmonious relationship between the two parties. Briefly put, the AID-financed technical assistance has been largely misdirected and grossly underutilized in terms of the original project design.

G. Summary Experience

Some encouraging results have been obtained through demonstrations of rice, groundnuts, sunflower and cowpea plantings; the training abroad of Somali technicians is proceeding satisfactorily; and the NES is increasingly being staffed with better trained officers and agents. However, although operating more or less in all ten agricultural regions of the country, the NES is not able to transmit to farmers improved technology that has been verified and proven agronomically and which is economically usable in the Somali setting. Such technology is not available, and the capacity to produce it is at best minimal. In addition, the methodology prescribed for the NES is not tailored to the present physical and financial circumstances in Somalia. Finally, the FMETC, which was to play a key role in the strengthening of the NES, has not been established, and is not likely to be as originally proposed.

To summarize, implementation of the project has not proceeded in accordance with the plans outlined in the project paper, and little significant progress has been made toward developing a Somali capability to promote and support sustained increases in food crop production.

H. Interim Evaluation

An interim evaluation of the AID component of the multi-donor project was conducted by REDSO/ESA and USAID/Somalia in December 1982. Besides discussing the problems related above, the evaluation report offered some comments on the design of the project and some recommendations. It was very short sighted, the report asserted, to design an extension project with a life-time of only five years and without emphasis on applied research. It was unrealistic to distribute responsibility for implementation of each of the major components of the project among four different donors. Moreover, the evaluation team observed that the capacity of the GSDR to implement the project was over-estimated. In its conclusion, the AID Interim Evaluation Report strongly recommended that USAID/Somalia and the GSDR should seek ways for initiating a program of adaptive research, the lack of which was considered as "the most significant management problem facing the Project".

I. The Revised AID-Component

Starting in January and continuing through May 1983, intensive discussions of the problems and issues that have adversely affected implementation of the AID-financed component of the multi-donor project took place among representatives of the Ministry of Agriculture (MOA), the Project Management Unit (PMU), the Faculty of Agriculture, the Agricultural Research Institute (ARI), the AID-financed host-country Contractor (USU), and USAID. These discussions have led to the understandings that are stated below in which the Vice-Minister of Agriculture, the Dean of the Faculty of Agriculture, the Director of Research of (ARI), and the Somali Project Director

have concurred and the IBRD office in Nairobi has accepted.

A. The FMETC

The FMETC will not be established as originally planned. As a preservice training institution, it would be largely redundant and thus wasteful, since most of the courses it would offer are already being taught at the Faculty of Agriculture and the strengthened Afgoi Agricultural Secondary School. Moreover, courses in agricultural extension are currently being developed by the University Departments of Rural Sociology and Agronomy. The FMETC will become instead an in-service training center and will be headed by the Director of Training of the NES who is presently in training in the U.S. In collaboration with the NES senior staff, the Faculty of Agriculture and the Agricultural Research Institute, the Center will primarily develop and offer orientation programs for newly recruited NES personnel and refresher courses and special courses in technical subjects and management for NES in-service personnel. The FMETC will also organize or host workshops and conferences on the agricultural sector as needed.

Except for the staff of the Training Division of the NES, the FMETC will not have its own permanent staff. Consequently, the AID-financed specialists who are presently in Somalia and were assigned to the FMETC will be phased out as soon as possible. However, AID will still provide for short-term technical assistance for the development of the course and program offerings of the center, as appropriate and needed. To the extent feasible, the Training Specialist who was recruited to serve as Principal of the FMETC and who has assisted in the development of a special course for future trainers at the Extension Training Centers will be invited to serve as

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a consultant to the FMETC.

The workshops and the 60 ha farm that were planned in the original project will be used, when completed, for training, demonstration, and research by the Agricultural Secondary School, the Faculty of Agriculture, the Research Institute and the NES. AID will provide some of the basic commodities needed to equip and operate the center as well as the workshops and the farm.

B. The NES

Experience in implementation of the Agricultural Delivery Systems Project has demonstrated that expatriate specialists, being transients and being deficient in the Somali language, cannot function effectively in line positions either at NES headquarters or in the field.

Experience has also shown that the presence of such expatriates, no matter how competent they may be, is not a substitute for the basic requirements of a strong extension service, namely: (1) the availability of improved technology that farmers can use profitably to increase their production; and, (2) the availability of extension officers and agents who are both technically competent and capable of assisting farmers in the intrinsically risky process of adopting new production practices.

It is recognized that ARI does not presently have the capability, in terms of manpower and other resources, to either generate new technology or effectively adapt to Somali conditions potentially useful technology that has been or may be introduced. Finally, it is recognized that, if Somalia is to achieve a greater degree of food security, the ARI, the Faculty of Agriculture and the NES

must pool available resources and in a cooperative manner, labor to address the needs and problems of the food crop producers.

C. The Applied Research and Extension Program:

Under the Agricultural Delivery Systems Project an applied research and extension program will be established with the following objectives:

1- adapting improved crop production and management practices to Somali conditions so that farmers can economically use these practices; and,

2- developing an extension system that can both serve the Somali farmers and be supported financially by the GSDR. Admittedly, these objectives cannot be fully achieved within the three years that remain in the extended life of the AID Project. Nevertheless, it is felt that with the resources available a more solid beginning can be made toward the goal of greater food security through sustainable increases in food crop production.

The Applied Research and Extension Program will be a cooperative undertaking involving the NES, the ARI, the Faculty of Agriculture and the farmers who are its intended beneficiaries. Its operations will be focused initially in four locations: Afgoi, Janale, and Johar in the Shabelle River Valley, and Bonka in the Bay Region.

Activities will consist primarily of adaptive and verification trials, demonstrations of recommended production and management practices, economic evaluations of these practices under farm conditions, investigations of existing production practices and systems, and training of extension agents and farmers. In the planning and execution of these activities priority will be given

to the food crops commonly grown. Therefore, from the outset, program activities will be closely coordinated with on-going research, particularly the Sorghum project supported by ARI, IDRC, and UNDP/FAO, and the Maize project that is funded by ARI and UNDP/FAO.

The Applied Research and Extension Program is intended to be a permanent, national undertaking. It is understood that as such it must receive priority in the allocation of human and financial resources and also that these resources must be made available on a steady and timely basis. It is further realized that Somalia does not presently have the range of expertise and experience required to establish the program, and therefore, must depend on outside technical assistance. Such assistance, however, will be kept to a minimum to ensure that the national character of the program is not compromised. Responsibility for the program will thus rest properly with the Somali staff who will be trained as rapidly as possible for that purpose.

D. Implementation Arrangements

The Applied Research and Extension Program will function under the supervision of the Director of the Department of Production, who also serves as General Manager of the PMU. It will be headed by the interim Director of NES who also serves as Assistant General Manager of the PMU and will be responsible for coordinating the planning and execution of project activities. Program headquarters will thus be in the NES.

Program field activities will be carried out at the CARS/ETC farm in Afgoi, the Bcnka Station/ETC in the Bay Region, the Janale ETC, and the Johar ETC, and from these stations, in farmers fields.

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The program will be staffed by NES personnel (Subject Matter Specialists, Director of Training, Regional and District Officers and Field Agents) who will be complemented by ARI staff at CARS and Bonka, 3-4 professors in Agronomy, Plant Pathology and Entomology from the Faculty of Agriculture and the specialists funded under the Agricultural Delivery Systems Project. All Somali technicians assigned to the program will receive the salary supplements that are granted by the NES and will be eligible on a competitive basis for training abroad under the project.

Program activities will be carried out on the basis of an annual work plan that will be submitted by the NES Director to the General Manager of the PMU for his approval. Also, an analytical report of activities will be submitted annually by the NES Director to the General Manager of the PMU.

In order to facilitate the operation of the program, the work facilities at CARS and Bonka Station will be improved through a special allocation of local currency funds generated from the sale of PL-480 Title I commodities.

These implementation arrangements will be undertaken in accordance with the schedule which follows:

IMPLEMENTATION SCHEDULE

<u>Time Period</u>	<u>Action</u>	<u>Action Agent</u>
Aug 83	Additional Funds Available (Total LOP &8,635,000)	USAID
Sept	Extension/Training Manager Assigned	PMU
Sept	Two Long Term Participant Trainees Depart	USAID/PMU

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<u>Time Period</u>	<u>Action</u>	<u>Action Agent</u>
Sept	Contractor Expresses Interest to continue with Project as Amended	Contractor
Oct	Preparation & Submission of One Year Work Plan	PMU/Contractor
Oct	PIO/C's for FMETC, ETCs & CARS Prepared Approved & Submitted	PMU/Contractor USAID
Oct	Proposal for Termination of Excess Team Members	Contractor
Oct	Contract Amendment Proposal Submitted	Contractor
Dec	Contract Amendment Negotiated & Signed	PMU/Contractor USAID
Dec	Quarterly Report & Workplan Update (to be Submitted Every 3 months)	PMU/Contractor
Jan 84	Long Term Participant Trainees Begin Returning to Somalia	USAID/PMU
Jan	Agronomist Arrives in Country	Contractor
March	Farming Systems Economist Arrives in Country (Contract fully staffed)	Contractor
March	5 Long Term Participant Trainees Depart	USAID/PMU
June-Aug	5 Short Term Participant Trainees Depart/Return	USAID/PMU
July	Commodities (Ordered Oct 83) Begin Arriving	USAID
Sept	2 Long Term Participant Trainees Depart	USAID/PMU
Sept	Yearly Progress Report Submitted	PMU/Contractor
Oct	Yearly Work Plan Submitted	PMU/Contractor
Feb 85	Project Evaluation	USAID/PMU
June-Aug	5 Short Term Participant Trainees Depart/Return	USAID/PMU
Sept	Yearly Progress Report Submitted	PMU/Contractor

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<u>Time Period</u>	<u>Action</u>	<u>Action Agent</u>
Oct	Yearly Work Plan Submitted	PMU/Contractor
Dec	All Contract Staff, Except Agronomist, Return to the US	Contractor
Sept 86	Yearly Progress Report Submitted	PMU/Contractor
Oct	Yearly Work Plan Submitted	PMU/Contractor
Dec	End of Project Report	PMU/Contractor
Dec	Remaining Contractor Personnel Return to the US	Contractor
Dec	Remaining Participant Trainees Return to Somalia	USAID/PMU

E. The AID Contribution

AID's contribution will include technical assistance needed at Afgoi for the establishment of the applied research and extension program, training abroad at International Centers, notably ICRISAT, CIMMYT, and IITA, and in the U.S., and some of the basic commodities required. It is anticipated that the present contractor, Utah State University, will be able to provide on a timely basis the technical services that will be required to assist the Somali staff in the establishment of the program. Accordingly, the host country contract between the PMU and USU will be amended to terminate all long-term technical assistance to the FMETC and modify the technical services to be provided to the NES as follows:

<u>Specialist</u>	<u>Person Months</u>
1. Agricultural Extension	24
2. Agricultural Engineer	24
3. Farming Systems Economist	24
4. Agronomist (Field Crops)	36
5. General Services	24
6. Short-term Consultant Services: Entomology, Training, Irrigation, Station Development, Vegetable Crops, Plant Pathology	

Among the Somali technicians currently studying in the U.S., three are expected to complete the requirements for their M.S. degrees in Agricultural Extension and return to Somalia in June 1984. They will have the opportunity to work in the program for

a full year, at least, prior to the departure of the U.S. funded Extension Specialist. The latter, however, would be available for consultant services to the program in the final year of the project. Similarly the Specialist in entomology will serve as a consultant for the last two years of the project.

The project will also systematically address the needs of the Agricultural Research Institute (ARI) by assisting the International Service for National Agricultural Research Strategy (ISNAR). ISNAR has already completed Phase I, consisting of a strategy statement to guide the development of an agricultural research system. Phase II will be to define a series of priority research activities, including achievable objectives, methodologies and resources needed. ISNAR has agreed to head up the Phase II program by providing the lead team members from its staff and procuring the services of other team members and logistical support. USAID will provide funds for this procurement.

PROPOSED BUDGET REVISION (\$1000's)

I. TRAINING

A. Earmarked to Date (Long & Short Term)	578	
B. Seven Additional Long Term (MS Training)	300	
C. Thirteen Additional Short Term	130	
Subtotal I		1,008

II. COMMODITIES

A. Earmarked to Date		1,582
B. FMETC Commodities Yet to be Procured:		
1. Workshop (Tools & Training)	80	
2. Machinery & Equipment (School Farm)	100	
3. Irrigation Machinery	100	
4. Shop Furniture & Equipment	13	
5. Office Furniture, Equipment & Supplies	10	
6. Library	15	
Subtotal II.B.		318
C. NES Commodities (Yet to be Procured):		
1. Office Furniture, Equipment & Supplies (Headquarters & Regional)	30	
2. Bonka, ETC.	120	
3. Janale, ETC..	120	
4. Johar, ETC.	120	
Subtotal II.C.		390
D. CARS Commodities (Yet to be Procured):		
1. Workshop (Tools & Training)	100	
2. Machinery & Equipment (Farm Research Demonstration and Training)	200	
3. Lab Equipment	150	
4. Center Furniture, Equipment & Supplies	75	
5. Library	15	
Subtotal II.D.		540
E. Automotive & Farm Equipment Parts & Supplies		175
Subtotal II		3,005

III. TECHNICAL ASSISTANCE

A. Earmarked to Date	3,299	
B. Additional Required	920	
Subtotal III		4219

IV.	<u>RESEARCH STRATEGY</u>	200
V.	<u>OTHER COSTS</u>	161
	Total Base Costs	<u>8593</u>
VI.	<u>CONTINGENCIES & INFLATION</u>	42
	TOTAL COSTS	<u>8,635</u>
	Obligated to Date	7,752
	Additional Funds Required	883

Budget Summary

	<u>Original</u>	<u>Revised</u>
Technical Assistance	\$3,240	4219
Training	866	1008
Commodities	1,371	3005
Research Strategy	111	200
Other Costs	-	161
Total Base Costs	-	8593
Contingencies & Inflation	2,164	42
TOTAL	<u>\$7,752</u>	<u>8,635</u>