663-0179 PD AAQ-611 "B" Numbers ISN-16216

AGENCY FOR INTERNATIONAL DEVELOPMENT

PROJECT PAPER FACESHEET

TO BE COMPLETED BY ORIGINATING OFFICE

1. TRANSACTION CODE (IX APPROPRIATE BOX)
[X] ORIGINAL [ ] CHANGE [ ] ADD [ ] DELETE

PP

DOCUMENT CODE 3

2. COUNTRY/REGIONAL ENTITY/GRANTEE

3. DOCUMENT REVISION NUMBER

4. PROJECT NUMBER: 663-017-9

5. BUREAU: A. SYMBOL: AFR; B. CODE: 1

6. ESTIMATED FY OF PROJECT COMPLETION: FY 80

7. PROJECT TITLE - SHORT (STAY WITHIN BRACKETS)
[UPPER DIDESA DEVELOPMENT PROJECT]

8. ESTIMATED FY OF AUTHORIZATION/OBLIGATION
A. INITIAL MO. 7 YR. 76; B. FINAL FY 79

9. SECONDARY TECHNICAL CODES (MAXIMUM SIX CODES OF THREE POSITIONS EACH)

10. ESTIMATED TOTAL COST ($000 OR EQUIVALENT, $1 = ____)

A. PROGRAM FINANCING	FIRST YEAR (IQ) B. FX	C. L/C	D. TOTAL	ALL YEARS E. FX	F. L/C	G. TOTAL
AID APPROPRIATED TOTAL						
(GRANT)	(707)	(-)	(707)	(1,500)	(-)	(1,500)
(LOAN)	(115)	(2,455)	(2,570)	(115)	(2,455)	(2,570)
OTHER 1.						
U.S. 2.						
HOST GOVERNMENT		416	416		1,957	1,957
OTHER DONOR(S)						
TOTALS	822	2,871	3,693	1,615	4,412	6,027

11. ESTIMATED COSTS/AID APPROPRIATED FUNDS ($000)

A. APPROPRIATION ALPHA CODE	B. PRIMARY PURPOSE CODE	C. PRIMARY TECH. CODE	FY 78 D. GRANT	FY 78 E. LOAN	FY 77 F. GRANT	FY 77 G. LOAN	FY 78 H. GRANT	FY 78 I. LOAN	ALL YEARS J. GRANT	ALL YEARS K. LOAN
FN	113	220	707	2,570	348		244		1,500	2,570
TOTALS			707	2,570	348		244		1,500	2,570
12. ESTIMATED EXPENDITURES			50		657	632	1,055	968		

13. PROJECT PURPOSE(S) (STAY WITHIN BRACKETS) [X] CHECK IF DIFFERENT FROM PID/PRP

[To establish a comprehensive settlement/resettlement and agricultural/rural development model by settling 6,300 farm families in the Upper Didesa Valley from which tested hypotheses about settlement can be replicated in other lightly populated areas of Ethiopia.]

14. WERE CHANGES MADE IN THE PID/PRP FACESHEET DATA NOT INCLUDED ABOVE? IF YES, ATTACH CHANGED PID AND/OR PRP FACESHEET.

[ ] YES [X] NO

15. ORIGINATING OFFICE CLEARANCE

SIGNATURE: John L. Withers John L. Withers

TITLE: Director, USAID/Ethiopia

DATE SIGNED: MO. 6 DAY 15 YR. 76

16. DATE RECEIVED IN AID/W, OR FOR AID/W DOCUMENTS, DATE OF DISTRIBUTION: MO. ___ DAY ___ YR. ___

AID 1330-4 (5-75)

ETHIOPIA

UPPER DIDESA DEVELOPMENT PROJECT

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ANNEXES

UPPER DIDESA DEVELOPMENT

PART I SUMMARY AND RECOMMENDATIONS

A. Face Sheet

B. Recommendations

The following actions are hereby submitted for AID approval within the Project Paper:

1. LOAN $2,570,000

   Terms:
   40 years, 10 year grace period

   Interest:
   2% during grace, 3% thereafter

2. GRANT $1,500,000

3 Waiver of competitive selection for on-going consulting service 1/

Total new AID obligation $4,070,000

C. Description of the Project

1. Borrower and Executing Agency

The borrower will be the Government of Ethiopia (GOE), acting through the Ministry of Finance. The Executing Agency will be the Land Settlement Authority (LSA) acting under the direction of a board of directors consisting of:

The Minister of Lands and Settlement	Chairman
The Minister of Agriculture & Forestry	Vice Chairman
The Minister of Interior	Member
The Minister of Labor & Social Affairs	Member
The Commissioner of Planning	Member
The Commissioner of Relief & Rehabilitation	Member
The General Manager of the Land Settlement Authority	Member

2. Project Summary

The Upper Didesa Valley Development Project reflects the determination of the GOE to convert the vision of a better life for the rural masses into the reality of higher incomes and improved quality of life. The program will develop a low-cost model for resettlement

1/ See Part III A 4

activities which can be replicated by the GOE in other sparsely-populated areas of the country. The experience gained by the GOE in planning and managing the project will make a significant contribution to Ethiopia's land reform program, and future development of other low-lying rain-fed areas will take form and substance from lessons learned during implementation of the program.

Hypotheses to be tested by the project are:

- Effective malaria control is feasible in low-lying areas under settlement conditions;

- Large-scale tsetse control will permit healthy maintenance of livestock in low-lying areas;

- Large-scale settlement projects drawing on identified pools of potential settlers can be implemented rapidly;

- Peasant Associations will function effectively as channels for receiving agriculutural inputs, delivering production and servicing debt;

- Cooperative farming within and among the Associations will be readily practiced by the settlers.

3. Project Purpose

The purpose of the project is to establish a comprehensive settlement and rural development model by attracting 6,800 farm families to the Upper Didesa Valley in a comprehensive program which can be replicated in other lightly populated agricultural lands of Ethiopia.

4. Project Description

The project will settle 6,800 families in a 340 square kilometer area of low-lying, rainfed under-used land in southwest Ethiopia. The area will be developed in accordance with a special plan including seventeen marketing points, a central storage and market facility, a system of low-cost rural roads connecting marketing points and access to an existing all-weather road connecting the project area with Jima and other regional markets. A total of seventeen Peasant Associations will form the base level organizational structure within which the project will operate.

Project components include the following:

a. Access to improved agricultural technology
b. Storage and marketing facilities
c. Rural roads
d. Water supply
e. Experimental farm, demonstration plot, and seed multiplication program

f. Agricultural extension and training services
g. Credit programs
h. Disease control
i. Management information and evaluation

Related GOE programs integrated with but not AID-financed under this project include the introduction of health stations, schools and police facilities.

D. Summary Findings

On the basis of the analysis contained herein, the USAID Mission to Ethiopia concludes that the project is technically, economically, and financially sound, and recommends that a loan be authorized to the GOE in an amount not to exceed $2,570,000. In addition, a $1.5 million grant is recommended to assist the GOE in meeting the objectives of the project.

The project meets all applicable statutory criteria (see Annex F). The USAID Mission Director in Ethiopia has certified that Ethiopia has the capability to effectively carry out the development of the project (Annex G).

E. Project Issues

The AID/W (ECPR) cable of December 12, 1975 commenting on the PRP review identified certain issues of the program. The recommendations of the GOE Interministerial Committee (Annex B, Exhibit 3) focused on these issues and made appropriate recommendations to resolve them as summarized below:

1. Black Soils

Development and settlement on the "black soils" has been deferred. Eliminating this element from the project has substantially lowered project costs: cost per settler farm family based on total net costs (investment plus recurring costs less GOE returns from project), discounted at 10 percent over the four-year project implementation period (1977-1980), is US $613 (see Part III).

2. Implementation Agency

The program will be implemented by the newly-created Land Settlement Authority which is guided by a Board of Directors consisting of the Ministers of Lands and Settlement, Agriculture and Forestry, Interior, Labor and Social Affairs, and the Commissioners of Planning, and Relief and Rehabilitation (See Part IV).

3. Cooperative Farming

It was suggested by the GOE that a cooperative farming system be used in the project. An integral part of the project is the development of seventeen Peasant Associations farming 1,000 hectares each (800 hectares crop land with 200 hectares set aside for villages, grazing and family gardens). See Part III.

4. Import Parity Prices

It was suggested that import parity prices should be used in the economic analysis. (See Part III D.)

5. Size of Project Farm

The project farm was increased to 800 net arable hectares to better support seed production and research activities directly related to Peasant Association needs. (See Part III.)

6. Settlement Schedule

The settlement schedule was accelerated to 2,000 farm families in the first year and 2,400 families each in the second and third years of the project. (See Part III.)

7. Environmental Assessment

This has been completed. See Part III A 5 and Annex C.

8. Social Soundness and the Role of Women

See Part III C and Annex B Exhibit 6.

9. Project Evaluation

See Part IV G.

F. Project Committee

USAID/Ethiopia
Donald R. Yeaman
Assistant Agricultural
Development Officer

Barry M. Riley
Program Officer

Margaret Bonner
Economist

REDSO/EA
Warren Wolff
Capital Projects
Development Officer

David Gephart
Engineer

William Jones
Legal Advisor

John Lewis
Procurement Officer

PART II - PROJECT BACKGROUND AND DETAILED DESCRIPTION

A. Background

1. Need for Settlement

a. Highland Population Pressure for Land

It is estimated that 85 percent of Ethiopia's population consists of peasant farmers in rural areas, most of whom live in the highlands throughout Ethiopia.

The overcrowding of population in highland regions is an ever present and increasing problem. Where land is limited, population expansion has created pressure to increase the number of farm units for new generations, which has resulted in reducing the size of farms until in many areas the farm family is barely able to support itself. Farmers scratch out increasingly tenuous livelihoods as erosion and soil depletion continue to reduce the yields from inadequate holdings. In all areas of overcrowding, there is considerable underemployment--that is, the labor resources exceed that which is required for the level of production attained on the land. In many cases, young men are forced to seek alternatives to remaining on the family plot and not many alterations are available.

b. Project Population

The project area is very sparsely populated. Primary constraints to spontaneous settlement have been the presence of endemic human and livestock disease. Some historic evidence indicates that the valley was once more heavily settled, but a proliferation of malaria mosquitos and trypanosomiasis infected tsetse flies combined to force survivors to migrate to the surrounding highlands, the elevations of which form effective natural barriers to the insect vectors.

The present population of the project area is estimated at 1,500 representing a density of only about 4.4 persons per square kilometer. Field surveys indicated an average of six people per household, thus, approximately 250 farm families are residing within the project boundaries. For further discussions on population and settlement see Social Soundness Analysis, Part III A, C and Annex B, Exhibit 6.

2. New Programs

In response to accelerating population pressure in the highlands, the Planning and Programming Department of the Ministry of Agriculture and Forestry (PPD/MOAF) in 1972 directed an inter-

ministerial effort in carrying out a reconnaissance survey of the Southwest Region of Ethiopia to identify potential project developments. The purpose of this survey was to locate underdeveloped and largely unsettled areas whose apparent technical and economic potential deserved more attention in the Government's resettlement and agricultural development programs. Areas to be looked at were those that would offer attractive agricultural and livestock benefits, and at the same time, provide large tracts of Government-owned lands for settlement of indigenous groups and resettlement of peasant farmers from the overcrowded highlands. As a result of the 1972 reconnaissance survey, several areas in the Southwest Region were identified for more detailed study.

In 1973, the Government of Ethiopia requested USAID participation in a two-phase study of five areas selected from those identified. USAID in 1974 contracted with Tippetts-Abbett-McCarthy-Stratton (TAMS) to carry out the study. The Phase I pre-feasibility survey of four areas (the fifth area was deleted by the Interministerial Committee with USAID concurrence during the first week of Phase I activities) was completed in August 1974 upon submission of "Prefeasibility Report, Phase I Southwest Development, USAID and GOE," August 1974.

The Interministerial Committee accepted the Prefeasibility Report in September 1974 and the GOE requested USAID to provide continuing support for Phase II activities which comprised in-depth studies of the two recommended project sites, the Upper Didesa Valley and Gambela. Mobilization for Phase II work was initiated in December 1974.

As a result of the TAMS Phase II report, as amended, the GOE requested that a project be initiated in the Upper Didesa Valley that would establish a comprehensive model from which tested hypotheses about settlement can be replicated in other lightly or more populated areas of Ethiopia. (See Annex H.)

3. Rural Development Program

The new Ethiopian Government has undertaken a major effort in rural development in an attempt to speed the pace by which large numbers of the rural poor are able to earn increased income and have access to minimal education, health and other government services.

a. Land Reform

The promulgation of the Land Reform Proclamation of 1975 eliminated, virtually with the stroke of a pen, the feudal land tenure system which had existed in Ethiopia for centuries. Henceforth, no one in Ethiopia could own land, and right to tillage was limited to 10 hectares (25 acres) per family. Tenancy was abolished. Debts to landlords were cancelled. Peasant Associations were decreed: each to

be composed of a few hundred rural families with responsibility to adjudicate local land disputes, to represent the collective wishes of the members in dealings with government officials and eventually to become the primary level of local government. Within a year from the proclamation more than 20,000 Peasant Associations had been established and were functioning. In December 1975, a second proclamation further defined the role and functions of the Peasant Associations.

The final nature of the relationship among the individual, the land he works, the Peasant Association to which he belongs and the various levels of government to which he owes allegiance is still in the process of change. Currently, the government appears to be moving toward a system where the majority of the land of each Peasant Association is farmed cooperatively with each family given an individual garden plot. Supposedly, if this system does not meet with the approval of the association membership after a period of trial, the members may opt to return to a system of individual family tillage.

b. Resettlement

As part of its announced land reform program the government plans to open new lands for settlement by landless rural poor and other groups. These lands have remained unsettled because of the incidence of human and animal diseases and the lack of access. Many of these areas are in Western and Southwestern Ethiopia. A new Land Settlement Authority has been created with responsibility for initiation and implementation of the program. The Authority has been given the mandate to get the program underway in the shortest possible time.

c. Other Donors

The UNDP, particularly through two FAO consultants, has been involved in the formulation of the settlement aspects of this project.

UNDP is also assisting the Ministry of Lands and Settlement by support to the recently established Training and Research Institute. Essentially, the function of the Institute will be to train middle-level land reform officers, and other personnel in the implementation of land reform and settlement programs. The Institute will also deal with training of Peasant Association leaders and will conduct research related to application of land reform and settlement activities.

d. The Minimum Package Program (MPP) Phase I

The MPP has been the principal vehicle for rural development since 1971. Phase I of the program is now ending and the Phase II program is now being designed. A brief look at Phase I is useful at this point.

Before 1971 the Ministry of Agriculture and Forestry had some 120 agricultural agents scattered over Ethiopia. Their main task was to carry out the FAO/Freedom From Hunger Campaign Fertilizer trials which were launched in 1967, and which later included a pilot credit program in some 30 areas. The agents in those days received very little technical support from the head office, and few inputs were distributed. The fertilizer trials demonstrated that crop yields could be considerably increased by fertilizer use. This was corroborated by the success of the SIDA-supported Chilalo Agricultural Development Unit (CADU) program. This was the main reason for the establishment of EPID within the Ministry of Agriculture and Forestry. The Department was established to spread the benefits of fertilizer -- and, where available, improved varieties of seed -- as inexpensively as possible over a wide area of Ethiopia through the MPP.

EPID was created in 1971 in order to achieve "an improvement in the standard of living for the peasant population," directing its activities "mainly toward farmers in the lower income brackets" and to "ensure the participation of the population in its activities," as well as "endeavour to avoid adverse employment effects." EPID was also charged with responsibility for liaison and supervision for the different comprehensive agriculture projects, and the administration of the nation-wide MPP.

The Minimum Package Program has evolved as the keystone in the GOE's strategy to raise production and incomes of small farmers in the highlands. The project has been, and continues to be, designed to increase the output of primarily cereal crops by small farmers through the introduction and spread of simple innovations and extension services, together with short-term credit.

In the period 1971-75 the MPP has been successful in establishing a viable, national organization, and a program to which small farmers have been responsive in increasing numbers. There have been problems, and certain targets have not been achieved, but it is widely recognized both within the GOE and by the donor community that the MPP or some variation thereof is, and will remain for the foreseeable future, the principle vehicle for small farmer agricultural development in Ethiopia. Currently, the MPP reaches approximately 15 percent of the farms and plans have been drawn up to expand the program over a greater area. It is expected that the program will more than double the number of peasant farmers with which it is working by 1980.

In the Didesa Project, the agricultural extension Minimum Package Program will be carried out by EPID under agreement with the Land Settlement Authority and will utilize a package of practices resulting from research developed by the Institute of Agricultural Research.

Settlement

a. Past Settlement Projects

For the twenty year period prior to the Socialist Revolution in Ethiopia, settlement and resettlement programs received occasional attention from government agencies. Among these agencies the Ministry of National Community Development (MNCD) started in the late 1950s with plans for providing settlement plots and initial assistance in lieu of pensions to retiring soldiers.

Starting in the middle 1960's MNCD sponsored a number of low cost schemes intended to move groups of people from overcrowded regions to under utilized land. Other low cost efforts assisted spontaneous or seasonal migration to lowland areas by persons from adjacent areas.

As settlement schemes these efforts attained goals of providing improved subsistence incomes to a relatively small number of peasant farmers (largely due to increased number of hectares per farmer) and of creating farming communities (certainly not flourishing, but at least comparable in services and welfare to other rural communities) where none had previously existed.

These projects, however, failed to make a significant contribution to national development goals of (1) reducing unemployment, and (2) regional community development.

These failures were related to the very limited secondary support provided to settlers in the way of food, oxen, credit, transport, health, extension, etc. which resulted in many cases of settlers turning back or refusing a site because conditions were simply too rough; and to the land holding structure and predominant tenure relations prior to the land reform. For example, a pattern emerged where the first settlers pioneered through the hardship of the first year or so, only to have the more powerful take over part or all of the land they were farming. Thus the expansion of settlement after settlement was thwarted due to the encroachment of claims by individuals after the inception of the settlement scheme.

To the extent there have been limited successes these have resulted from high settler motivation demonstrated most clearly in low input schemes where great hardships were endured to obtain access to land. By far the most pervasive reason for failure in settlement has been inadequate government commitment to helping the most needy rural populations and lack of a coherent policy regarding settlement and its goals. This has especially accounted for the failure to settle a significant number of families and for the failure of settlement projects to contribute to healthy regional development.

b. Present Commitment to Settlement and Rural Development

Since the revolution several changes have affected the settlement picture in Ethiopia.

First, land reform has freed land for settlement, thus removing one of the constraints to expansion. Some of this land was previously cultivated by commercial farmers and is easily settled. Most of the land was held in reserve for future development by landlords.

Second, Peasant Associations (PA) legislation and implementation has created what may become an effective grassroots organizational base for rural activity. Associations have registered virtually all land holders within their jurisdictions and provide a source of information about local conditions. Since their formation they have proven to be an effective mechanism for politicization and for mustering ideological energy for development activities. It has come to be expected that in any future settlement activity, the PA will be the basic organizational unit through which the implementing agency will work to provide inputs and receive feedback.

Third, all PAs are being encouraged to start cooperative farming activity and to work each year to increase the area under cooperatives. Some of the PAs have begun farming 5-20 ha. this past season as cooperatives, and have plans to expand into cultivable land made available by the Land Reform Proclamation. Some have even begun to discuss the gradual collectivization of all the land which belongs to the PA. The trend now appears to be in this direction. All future agricultural/rural development programs will be encouraged to organize along cooperative lines.

Fourth, the creation of the Land Settlement Authority (see Part IV, Administrative Arrangements for details) has finally established an ultimate authority and coordinating agency to deal with all land settlement in the country. An official guideline has been drawn which gives general policy direction to future settlement activities (see Annex B, Exhibit 4).

Finally, the most significant indication of the present government's commitment to settlement is the magnitude of the commitment which this Government has already made. In the fifteen years prior to the revolution the total government settlement effort added up to under 5,000 families. Since the revolution at least 10 projects have been started by government agencies encompassing some 5,000 families and ranging in size from 120 to 800 settlers.

B. Detailed Description

1. Project Goal

To achieve a more equitable income distribution, increase food production and improve the quality of life of the rural farmers

and find the best means of opening up new lands for settlement of large numbers of the landless and/or unemployed peasant farm families of Ethiopia.

2. Project Purpose

The purpose of the project is to establish a comprehensive settlement/resettlement and agricultural/rural development model by settling 6,800 farm families in the Upper Didesa Valley from which tested hypotheses about settlement can be replicated in other lightly populated agricultural lands of Ethiopia.

The program will finance the essential inputs that are required for the settlement of the new area. It will finance the basic infrastructure such as a system of low cost rural roads connecting marketing points, access to an existing all-weather road connecting the project to a major regional marketing center, roads and water supply systems. The program will finance the essential ingredients for supporting small farmer operations such as production and livestock, credit, storage and marketing facilities and extension services.

The program is estimated to cost $6,027,000 consisting of a $2,570,000 AID loan, a $1,957,000 GOE contribution and a $1,500,000 grant to provide on-the-site technical and administrative services, farm machinery, and vehicles. A listing of the project components and their estimated costs is shown on the following page.

TABLE I

A SUMMARY OF ESTIMATED PROJECT COSTS
(US $000)

Loan		AID	GOE	TOTAL
1.	Extension Services	30	296	326
2.	Project Farm	146	224	370
3.	Machinery Pool	257	154	411
4.	Livestock Health Program	53	53	106
5.	Project Loan Fund	730	221	951
6.	Storage and Marketing	222	76	298
7.	Tsetse Fly Control	178	58	236
8.	Roads	745	33	778
9.	Water Supply	97	47	144
10.	Project Support	112	651	763
11.	Survey and Mapping	0	144	144
	Total Loan Program	2,570	1,957	4,527

Grant		AID	GOE	TOTAL
1.	Consultants and IQC	1,035	-	1,035
2.	Training	59	-	59
3.	Commodities	360 1/	-	360 1/
4.	Other Costs	46	-	46
	Total Grant Program	1,500	-	1,500
	Total Program	4,070	1,957	6,027

3. End of Project Status

At the end of the four year project (1980) 6,800 families will have been settled on 17,000 hectares of land and will be involved in self-sustaining agricultural production increasing their net per capita income to nearly US $200. Settlement will have been possible due to the control or elimination of human and animal diseases which now tend to make the areas inhabitable. Surplus production will be able to reach the markets via the upgraded and newly constructed road system which connects the project area to all weather roads. For the agricultural production to have reached its expected level, it is also necessary that Peasant Associations (seventeen by Year Four) would have been established and functioning as vehicles through which public services can be supplied, as well as linkages to the agricultural co-operatives.

1/ Almost $300,000 will finance first year project FX procurement requirements.

4. Important Assumptions

a. The GOE will implement land use and settlement policies that will stimulate development of new lands.

b. Present tax and agricultural price policies and guidelines will continue to be followed to stimulate farmer incentive to produce.

c. Adequate markets will continue to exist which will absorb surplus production not needed in the Didesa Valley area.

d. Land Settlement Authority (LSA) will be effective in coordinating other GOE agencies to work in the Upper Didesa region.

e. Technical conclusions from the TAMS feasibility study are valid and manpower is available and willing to accept training.

f. Sufficient political stability and security will be maintained in the countryside to allow the project to function normally.

5. Planned Outputs 1/

The principal outputs of the project are 85 kilometers of roads, a potable water system, storage facilities, a machinery pool, a credit program, research and extension services and an animal and human health program that are instrumental in settling 6,800 farm families in seventeen Peasant Associations to productively cultivate 17,000 hectares of farm lands with the assurance that a market exists for excess crop production.

6. Planned Inputs 2/

The AID loan finances 43 percent of the project, that is 7 percent of the foreign exchange costs and 56 percent of local costs. The GOE finances 32 percent of the project and 44 percent of local costs. In addition, the GOE will provide essential public services (health, schools and police protection) to the project. The substantial GOE contribution is attributable to the fact that GOE is using the AID project as a "test case" and plans to replicate the program in other areas throughout Ethiopia based on the knowledge and experience that is gained from the project. The loan is supported by an AID grant, amounting to 25 percent of total program costs 93 percent of foreign exchange costs), providing technical and managerial services and farm machinery and vehicles, the first year requirements for project off-shore procurement items (see Part III. A. 3).

1/ For further details, refer to the Logical Framework Matrix Annex D.

2/ Ibid.

PART III - PROJECT ANALYSIS

A. Technical Analysis Including Environmental Assessment

1. Overview

This program does not rely on new technologies for increasing food production, but it does require improved agricultural practices similar to those being used in other areas of Ethiopia and in other developing countries in order to increase employment and improve income in rural areas. Such practices will be introduced into this program through the proposed extension services and technical assistance.

The GOE experience over the past few years in rural road building and maintenance, in developing and adapting agricultural technology, in extending agricultural information, and in making production inputs available to small farmers through the Minimum Package Program demonstrates that Ethiopia has the technical capabilities to undertake this project. However, the complexities of a settlement program strain even the most efficient systems; it is for this reason that the $1.2 million portion of the AID Grant for technical assistance is important in fortifying the GOE effort.

Settlement plans for the program were designed within the context of GOE objectives and are closely related to ecological conditions, particularly soil characteristics, in the project area (see Annex B, Exhibit 2). The following schedules of settlement and land development are proposed for the 17,000 hectares (13,600 hectares under production cropping) under the program:

Project FY	Farm Families	Hectares Under Cultivation
1977	2,000	2,000
1978	4,400	6,400
1979	6,800	11,200
1980	6,800	13,600

The 6,800 farm families are to be settled within seventeen Peasant Associations with 400 families per Association for this program. (The number of families in an Association varies considerably elsewhere.) By the end of the third year all 6,800 families will be producing maize, sorghum and chickpeas on 11,200 hectares, and by the fourth year all 13,600 hectares will be under cultivation. Each Association will be assigned 1,000 hectares of which 200 will be for villages, home gardens, community livestock grazing and a rural service center. The remaining 800 hectares of production cropping will be farmed on a cooperative basis.

The first 2,000 settlers will start arriving on site during the last quarter of CY 1976, the second group a year later and the third another year later so as to stagger orientation, home building, land clearing, association formation, farming assignments and other pre-cultivation activities. Plans call for five of the seventeen Peasant Associations to be formed by March 1977, six by January 1978 and the last six by January 1979. These Peasant Associations are important local entities recently introduced by the new Government. They fill a critically needed local-level social mobilization function in the administrative structure, and are the cornerstone of the GOE rural development strategy. They are the first poor farmers' "institution" and are being organized on a large scale with significant impact. It is felt that about 40,000 Associations could completely organize the rural country-side of Ethiopia; to date some 21,000 have been formed. The Ministry of Agriculture and Forestry (EPID) is currently restructuring its rural development delivery services to support the Associations, and plans to extend coverage by all development services to 15,000 further Peasant Associations by 1980. All costs of developing the associations (including the seventeen under the proposed program) are borne by the GOE; such costs will be over and above the $2 million GOE contribution to this program.

No serious problems are anticipated in finding sufficient settlers for the project. In general, present residents of the valley and those with valid traditional claims in the region will be given priority in relocating by the newly formed associations. New settlers will be recruited from among farm families in the region. Pre-cultivation projects such as land clearance, road construction, tsetse fly control, and establishment of the demonstration and seed multiplication farm will all be labor-intensive, payment for which all meet a large part of family requirements until the first harvest.

The Land Settlement Authority, using GOE approved guidelines, will select and transport the settlers to the project site where they will be organized and cared for by GOE project staff. Settlers will initially be housed and fed at reception centers and then moved to their assigned village sites. Selected settlers will also be given priority as paid unskilled laborers on labor intensive construction activities such as road upgrading, tsetse fly clearing, project farm clearing, etc. This policy will ensure that all settlers are gainfully employed until such time as they are processed through the reception center and settled on their village sites. The GOE guidelines regarding settler selection are set forth below:

a. Priority

1) Priority of settlement will be given to persons residing in the general vicinity of the settlement site.

2) The authority (GOE) shall, in highly congested areas, give priority to those individuals from within, or from the region surrounding the settlement project.

b. Potential Settler Populations:

1) Persons with little or no land.
2) Unemployed persons residing in urban areas.
3) Nomads who desire to settle.
4) Persons who need to be settled for various other reasons.

c. Settler Selection Criteria

1) A person willing to, and interested in, making his living from agriculture.

2) One with an agricultural background.
3) One between ages 18 to 45.
4) One who is healthy.
5) One who will abide by the rules of the GOE and who will accept the obligation to develop.

2. Project Components

A description and technical analysis of each component of the project follows below. A listing of the amount of each component is shown in Part II (Table 1) and Part III-B (Table 3):

a. Surveying and Mapping

In order to implement the first stage of the project it is necessary that photogrammetric mapping or topographical ground survey be carried out and contour maps prepared of the entire area in the first year of the project.

Maps are required to enable layouts of villages sites, cooperative farms, roads, Project Center water supply, the Project Farm, and other items of infrastructure. All survey work will be done by survey parties from the Land Settlement Authority and the Ministry of Lands and Settlement. The Ministry of Lands and Settlement presently has experienced survey teams, with required equipment, available to immediately start survey operations. Survey parties will be required on the following schedule:

Job	Project Fiscal Year 1977	1978	1979
	(Number of Parties)		
Contour Mapping	4	--	--
Boundary Marking	3	3	3

The surveying work performed will include: (1) cross sections and subsequent contour mapping of the entire project area at one meter intervals, except on the steeper lands; (2) boundary marking of the peasant association villages and rural centers; (3) farm boundary markings within the different Peasant Associations; and (4) center-line survey for road improvement (50 km.) into project area.

The standards for mapping will conform to the GOE Maping Institute Criteria. Cost estimates for equipment and field work are listed in Annex B, Exhibit 1 (page 1)

b. Roads and Drainage

To permit early implementation of the project; upgrading of the existing dry weather track (connecting the Kolosuri Project Center to Bedele) to single lane rural road standards, a distance of about 50 kilometers, is required. New internal project roads, consisting of a spine road connecting with Route 39 near the existing bridge and two spur roads, totalling about 35 kilometers, are to be constructed to single lane rural roads standard. With the exception of one bridge crossing required for the Ambelta River (the major tributary to the Didesa) all stream crossings will be by paved ford. Both the external access and internal project road network are required to enable a smooth flow of farm materials and supplies to the Peasant Association, and to transport surplus production to outside markets. External access to the project (through upgrading the existing track) will be provided from the national primary road system at Bedele. The internal project road net is to be kept to a minimum, and will be located to provide road access to within five kilometers of each Peasant Association. Peasant Associations will be encouraged through cooperative effort, to tie their respective villages and service centers to the project roads.

Labor intensive methods under project supervision will be used in upgrading and constructing the roads with a minimum of equipment (one dozer, one grader, one dump truck, and one pick-up leased from the Ethiopian Road Authority or a private source). It is estimated that an unskilled labor force of 500 persons can, with adequate supervision, complete the roads within a four year period with work starting during the last quarter of calendar year 1976 (see Section IV). Because of labor intensive methods that will be used to construct these roads, detailed construction plans are not required for the 50 kilometer section of existing track. Final layouts for the 35 kilometers of spine and spur roads will be made by technical assistance from the Agricultural Engineer on site.

1) On-Site Reconnaissance

Field reconnaissance activities, carried out in February and March 1975 included an inventory of the existing road from Bedele to be upgraded and site inspection of new project spine and spur road corridors. General location of the new project roads were made on the basis of site inspection, air photos, and soils map prepared by TAMS.

In locating the new internal project roads, the black vertisol areas were avoided with the exception of four kilometers which will require special subgrade treatment, consisting of rock and/or sand blending, and gravel surfacing. Rock, sand and gravel are available in stream beds at distances less than one kilometer. Other obstacles include: 1) the Ambelta river which requires a bridge crossing; 2) two tributaries requiring major paved fords (5 by 30 meters); and 3) five small tributaries requiring minor paved fords (5 by 5 meters).

The first 36 kilometers of the external access road from Bedele to be upgraded (at which point it enters the project area) requires: 1) three major paved fords (5 by 30 meters); 2) four minor paved fords (5 by 5 meters); and 3) three major alignment changes of approximately two kilometers each at the three major paved ford crossings to bring grades down to ten percent. The remaining 14 kilometers of the existing road lying within the project area requires two major (5 by 30 meters) and five minor (5 by 5 meters) paved fords but no major alignment changes.

2) Soils and Materials

With the exception of the four kilometers of black vertisols mentioned under 1), above, the new internal project roads are located on adequately drained red/brown soils and will be surfaced initially only at approaches to the paved ford and Ambelta River bridge crossing at which sites ample surfacing material is present in the streams. This method of minimum construction will not guarantee failure-free performance along the entire alignment, and it will, consequently, require repair of localized weak spots and potholes both during the project construction period and subsequent maintenance. Such "construction by maintenance" is considered the most economical method of meeting project road requirements, especially considering the relatively low traffic volume and the desired low-cost project inputs.

The first 14 kilometers of the existing road from Bedele have excellent ridge alignment, and ample side barrow material, consisting of fragmented rock, soil/rock mixtures, and rock outeropping, is available. Of the next 22 kilometers, approximately 15 kilometers will require surfacing due to steeper grades; adequate material is available at six stream crossings and from soil/rock side barrow, and haul distance (haul required primarily at three major alignment changes) will not exceed two kilometers. The 14 kilometers lying within the project area will be as for the internal project roads discussed in the preceeding paragraph.

3) Estimated Traffic Volume

The anticipated annual average daily traffic (AADT) at full agricultural production is estimated at 18 consisting of 12 ten-ton single truck units and six four-wheel drive vehicles and tractors. Peak period average daily traffic (ADT) during November through February is estimated at 25 to 30 ten-ton single truck units. The relatively small AADT of 18 led to adoption of a minimum single-lane rural roads standard with select surfacing only where in-site material is of inadequate strength and on steep grades. Cost analysis indicates that the above minimum section is most economical for AADT up to 30.

4) Road Standards

The following standards will be used for construction of roads:

Right of way requirement		20.0 m
Roadway platform width		4.0 m 1/
Side ditches		
Side slope		2:1
Depth		0.75 m
Embankment slope	2/	varies with material
Select material surfacing		15 cm minimum
Maximum gradient		10%
Minimum curve radius		20.0 m
Design speed		24-40 KPH

5) Drainage Standards

The following standards will be used for the construction of drainage structures: For the Ambelta River bridge the Ethiopian Roads Authority (ERA) standard concrete bridge drawings will be used as the basis for design and construction. ERA standards are based on AASHO H-20-S16 loadings. The primary standards for the bridge are as follows:

Length	30.0 m
Curb to curb width	4.0 m
Full deck width	4.5 m
Spans	2
Design load	H-20-S16

1/ Platform widened to 6.0 m at 500 meter intervals for passing; length of full two lane passing section (excluding transitions) not less than 20.0 meters.

2/ Only where in-situ material and side borrow of inadequate strength.

The Ambelta River bridge will be built either by force account or local competitive contract. Specifications and, if by competitive bidding, bid documents and construction contracts will be developed in detail during the first phase of the project. A Condition Precedent requiring plans, specifications, and a construction contract (if by competitive bid) will be tied to the AID financing of this structure.

Other tributary crossings will be by paved ford constructed of rough mortared stone masonry cribs. Ample rock is readily available at crossing sites for this purpose.

6) Cost Estimates

The total estimated construction cost for roads, including escalation, is US $741,000 (all in local currency). A breakdown of this cost, separated between upgraded and new portions, is given in Annex B, Exhibit 1 (pages 1 and 2).

7) Execution Plan

The following supervisory and work force will be mobilized at the outset of project implementation:

Supervisor	1
Assistant Supervisor	1
Foremen	4
Survey Party	1
Equipment Operators	2
Drivers	2
Mechanic	1
Carpenter	1
Masons	2
Clerk/Timekeeper	1
First Aid Man	1
Laborers[1]	500

Concurrently, the centerline and right-of-way of the 50-kilometer existing road from Bedele to be upgraded will be surveyed and staked out. Next, the three major alignment changes and paved fords, referred to earlier, will be finally located and staked out.

1/ Priority given to selected settlers.

Primary effort during the first construction season (November 1976 to May 1977) will be on upgrading those stretches of the existing road in worst condition and constructing the major alignment changes and paved fords. The equipment, referred to at the beginning of this section, will be engaged chiefly in constructing the major new alignments and excavating approaches to the paved fords. It is noted here that 150 working days can be counted on per construction season.

Also, during the first construction season, approximately five kilometers of new spur road will be finally located, staked out and brought to rough section. Final sectioning and repair of possible failures will be carried out the following season. This spur, together with upgrading the critical sections of the existing road as described in the preceding paragraph, will provide improved access to the first year settlement area, the project headquarters and farm, and the project town.

Standard ERA H-20-516 bridge design and specifications will be adapted to the Ambelta River crossing site and design and construction documents prepared early in project year one. Arrangements will be made concurrently for construction by force account if ERA has forces available. If not, a contract will be awarded, by competitive bidding, to a local contractor during the wet season of year one. In either event, it is planned that the bridge will be built during the second dry season of project implementation.

During the second construction season (November 1977 to May 1978), work will proceed on upgrading and improving the existing road from Bedele and bringing the five kilometers of new road, brought to rough section the previous year, to final dressed section. Approximately 15 kilometers of new project roads will be finally located, staked out and brought to rough section, and two paved fords will be built. Final sectioning and repair of possible failures will be carried out the following season. These new roads will provide improved access to the second year settlement area. Equipment will be used to excavate paved fords and on difficult sections of road upgrading.

During the third construction season (November 1978 to May 1979), work will continue on improving the upgraded road from Bedele, using equipment as necessary over difficult stretches. The 15 kilometers of new road, brought to rough section the year before, will be brought to final dressed section. The last 20 kilometers of new project roads will be finally located, staked out and brought to rough section; six paved fords will be built. Equipment will be used to excavate approaches to the paved fords.

During the last construction season (November 1979 to May 1980), work will continue on improving the upgraded road from Bedele, and the last 20 kilometers if new roads, brought to rough section the previous year, will be repaired as needed and brought to final, dressed section. Equipment will be employed on the more difficult stretches.

Design work, including adaption of the ERA standard bridge drawings and specifications to the Ambelta River crossing site, final new road locations, alignment changes on the existing road, and paved fords, will be carried out by the Agricultural Engineer member of the TA Team and his counterpart Ethiopian Engineer.

The supervisor and assistant supervisor, assisted and advised by the TA Team, will control construction operations, equipment scheduling and use, personnel assignments, and labor recruitment.

Logistical requirements are relatively simple due to the low grade of road to be constructed. The project will procure and deliver hand tools, materials (primarily cement for paved fords), and tents for supervisory personnel and skilled labor. The labor force, many of whom will be accompanied by families, will provide their own temporary tukel or lean-to shelters; they will also be self-sufficient as to preparing their own meals from rations issued as described below.

The project will procure food which will be provided to the laborers at cost. It is estimated that 150 quintals[1/] of grain and six quintals of vegetable oil per month will be required.

Food and cooking for the supervisory and skilled labor personnel will not be an added cost to the project as salaries include per diem allowances which will cover supplies and camp operations.

8) Maintenance Plan

With the minimum input type of construction required for roads, ruts, deformation, and slipperiness have to be expected and accepted, especially during the initial years. It is important that these maintenance problems be handled as soon as possible after rains by grading and adding the best available select material to trouble spots. With constant maintenance it is

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1/ One quintal is equal to 220 pounds

expected that the standard of the roads will gradually improve over the years. Insofar as possible, travel should be avoided, or at least restricted, when the roads are wet.

The only equipment requirements upon completion of road construction will be a leased motor grader for about one month to make one or two passes, full road width, after the heavy rains are over and one leased dump truck for up to five months to haul select material to points of road failure. Other maintenance inputs will be unskilled labor supervised by project staff until such time as other maintenance authority resumes the responsibility.

In general, maintenance of completed portions during construction will be carried out by the construction forces where they repair failures and extend select material surfacing. In addition, US $37,000 equivalent local currency has been budgeted during this four-year period to enable the hiring of more labor and equipment for emergency repairs which would over-extend the construction forces.

As soon as practicable after the four-year project period the responsibility for maintenance of the rural road net within the project area will be turned over to the peasant associations. During the transition period the Project Engineer (trained by the TA Team during the project period) and his assistants will hold training sessions on maintenance operations and requirements with persons selected by the peasant association leaders to plan and supervise road maintenance. The project, however, will continue to provide maintenance assistance and advisory services. Maintenance of these roads, except for project staff salary time and equipment inputs, discussed later, will be at no cost to the project since peasant association manpower will be provided on a community basis which is the present norm in GOE settlement projects.

It is the intent that maintenance of the 36 kilometers of the upgraded road to Bedele lying outside the project area be turned over the GOE's Rural Access Road Organization (RARO) subsequent to the four-year implementation period of the AID loan. Until actual acceptance of maintenance responsibility by RARO, however, the project will continue maintenance utilizing equipment, discussed below, and gratuitous manpower inputs by the peasant associations.

An annual amount of equivalent US $16,000 has been included in the project recurring cost budget for road

maintenance following the four-year implementation period. This amount is adequate to fund the equipment for grading and hauling, discussed earlier, and a small number of skilled, semi-skilled and unskilled labor. This amount would be reduced as RARO takes over responsibility for sections of road.

The foregoing maintenance plan is based on conditions and GOE policy in effect now. Revisions will be made as necessary and a final plan prepared by the grant-funded TA Team prior to completion of road construction activities.

c. Water Supply

The potable water supply facility for the Project Center, Project Farm and the new town will be designed early in the program (first half of CY 1977) by technical assistance funded under the TA component. Construction will start in November 1977 by labor intensive means and the facility will become operational in July 1978. It will be a simple system with minimum maintenance.

1) Source

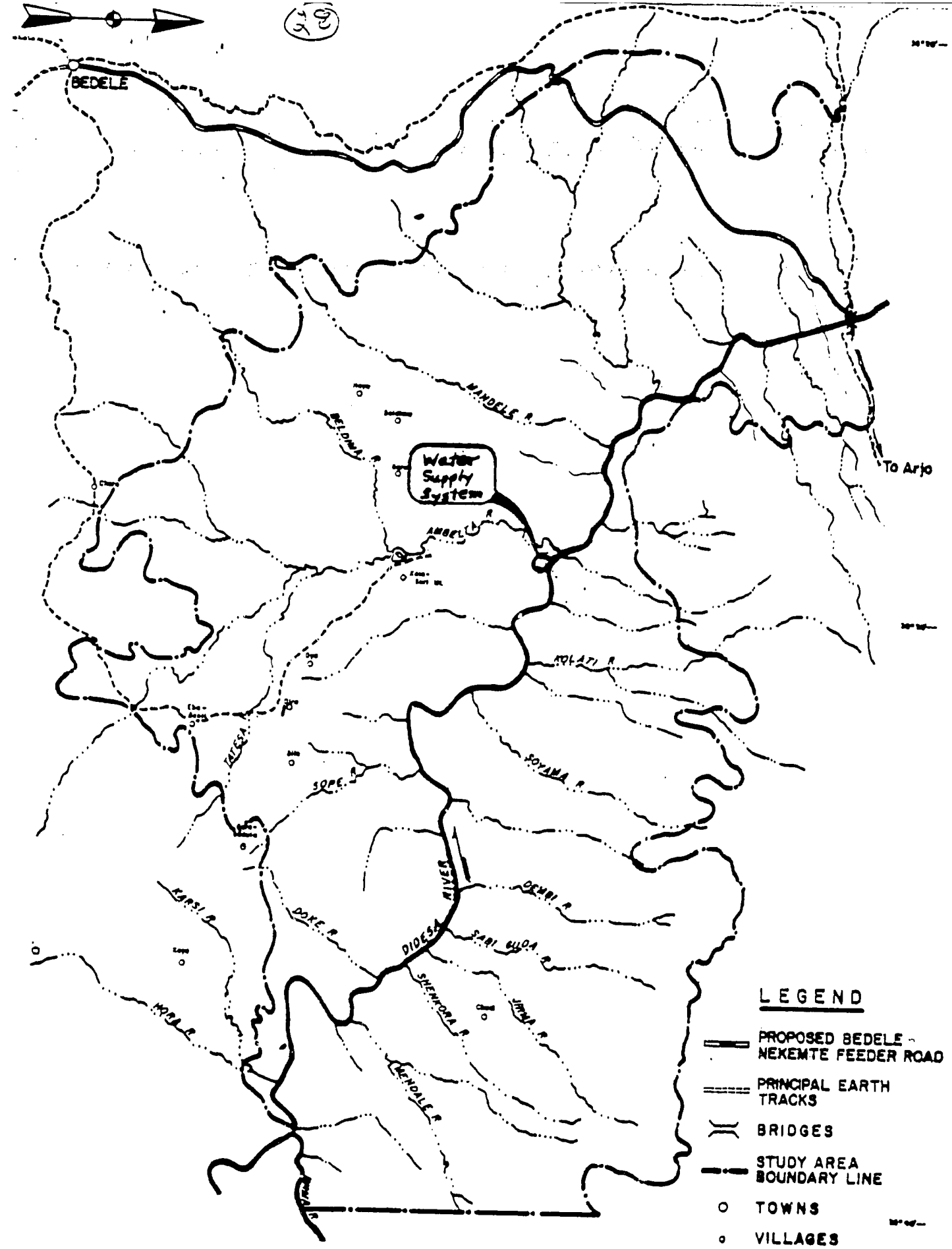
The Didesa River, which has a mean annual runoff of 4,686 million cubic meters (3.8 million acre feet), was selected as the source for the project potable water supply system. Even at the lowest daily flow during the 14-year period of stream gazing record, only some two percent of the river flow is required to supply the system; therefore, the supply is firm.

Other alternatives are: 1) impounding water by constructing a dam on a small, intermittent tributary stream; and 2) possibly groundwater. The first alternative was eliminated on the obvious basis that it is more economical to utilize a water source not requiring the additional cost of impoundment. The second alternative could not be quantitatively analyzed due to the absence of groundwater data (groundwater investigation was not included in the terms of reference of TAMS' contract); however, it is estimated that development of production wells could cost up to four times as much as the simple surface water system selected. In addition would be the cost of groundwater investigation.

2) Design Criteria

Location of the selected water supply system is shown on Figure 1. Generalized plan and profile of the system layout are presented on Figures 2 and 3, respectively.

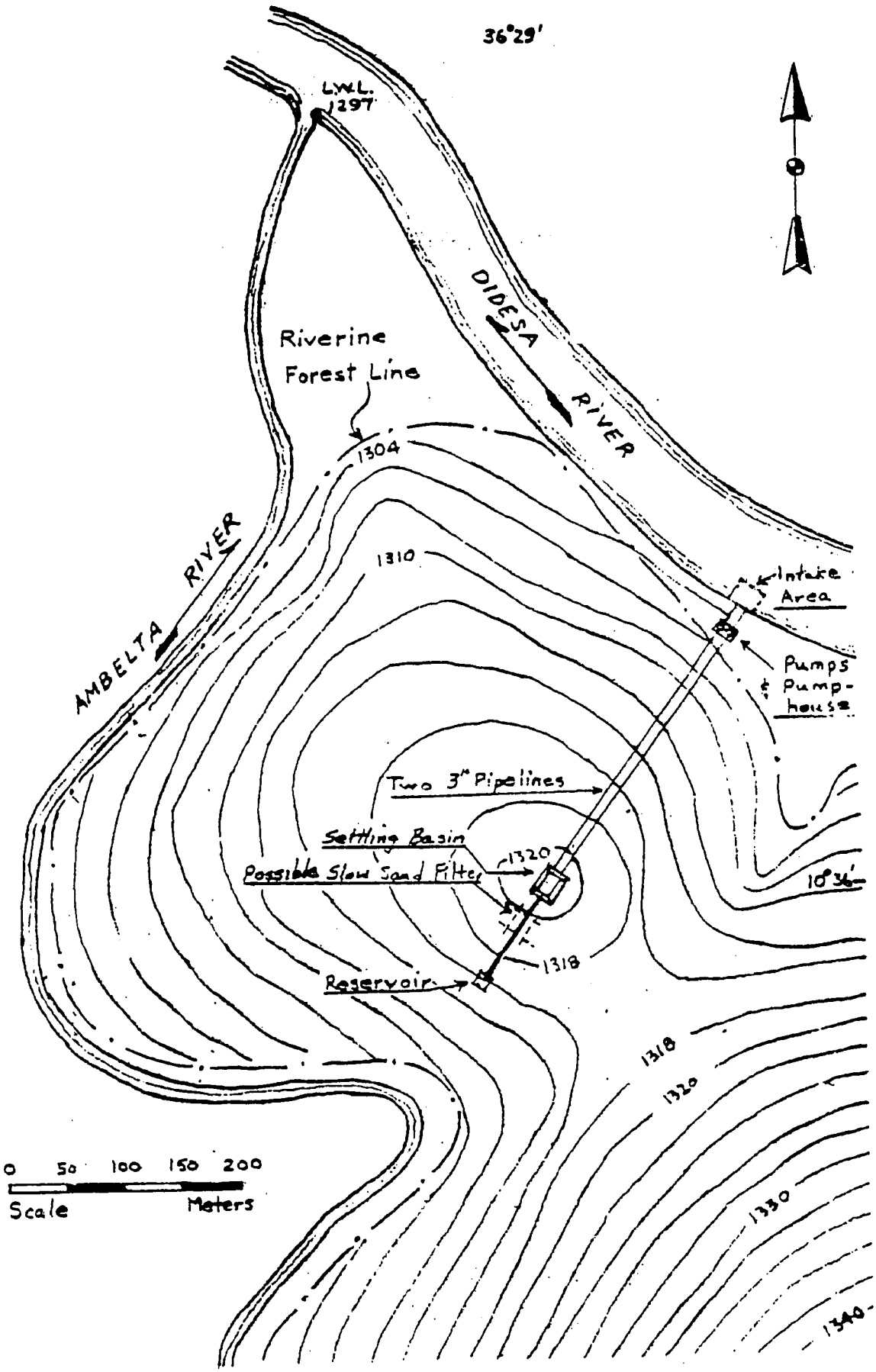
The water will be taken directly from the Didesa River (low water level 1297 meters), via two securely anchored



UPPER DIDESA DEVELOPMENT PROJECT
WATER SUPPLY SYSTEM
LOCATION

FIG. 1

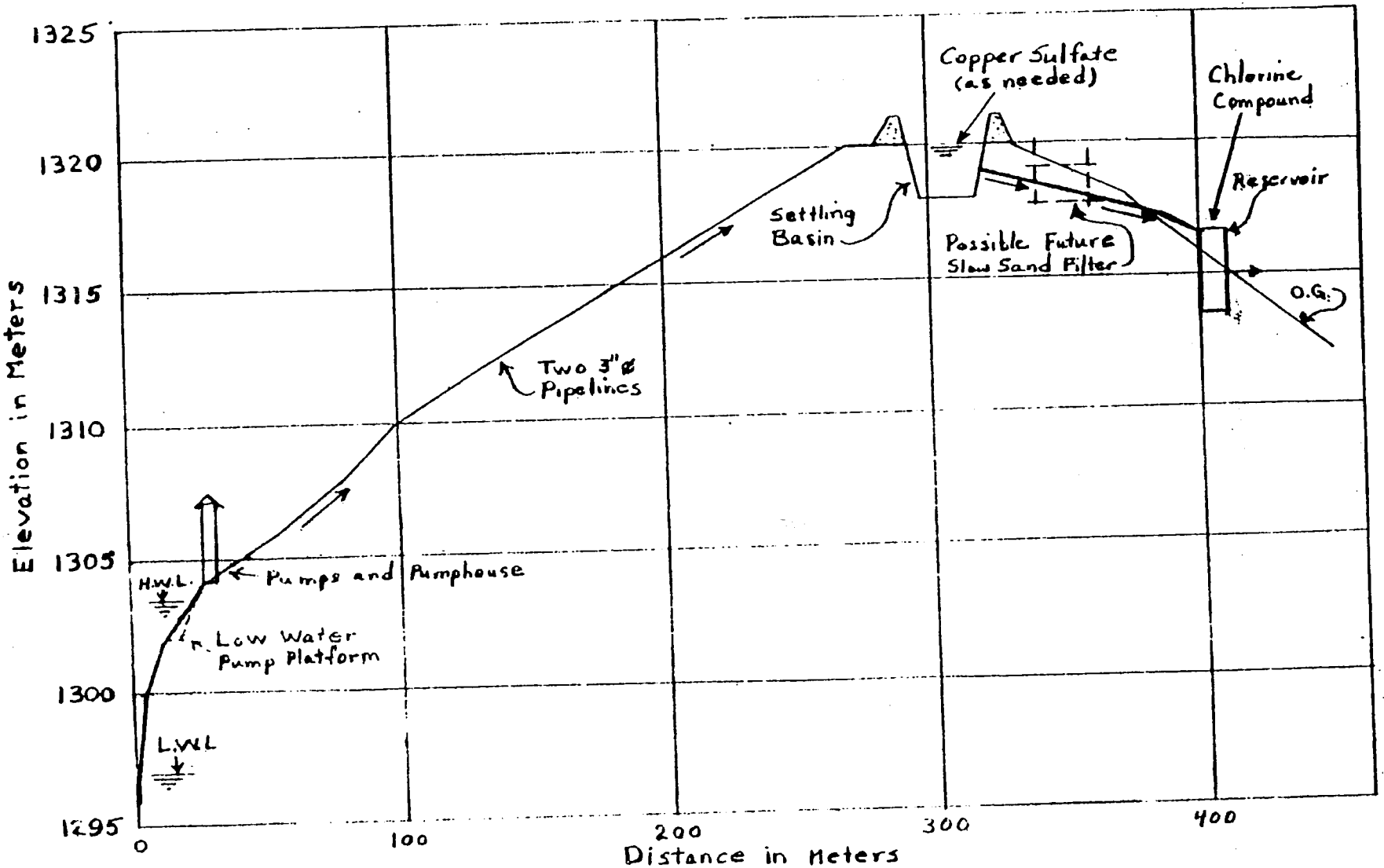
24A



UPPER DIDESA DEVELOPMENT PROJECT
WATER SUPPLY SYSTEM
PLAN

FIG. 2

246



UPPER DIDESA DEVELOPMENT PROJECT
WATER SUPPLY SYSTEM
PROFILE

FIG. 3

(89)

submerged three-inch pipelines with screened bellmouths, two five-liter per second (80 gpm) pumps driven by two five horsepower diesel engines, and two three-inch pipelines 250 meters in length, to a settling basin (elevation 1320 meters) with a capacity of 600 cubic meters. The raw water in the settling basin will be dosed, as required, with copper sulfate to prevent the growth of algae. The water will then flow by gravity, via one four-inch pipeline 80 meters long, to a 300-cubic meter capacity reinforced concrete reservoir at elevation 1316.7 meters. Water will be disinfected in the reservoir by manually adding chlorine compound which is available in Ethiopia. In siting the settling basin and reservoir, sufficient distance (80 meters) and elevation difference (1.3 meters) has been left to permit future installation of a simple slow sand filter (one meter depth of sand over an area of approximately 250 square meters would be required) should such facility be found necessary to remove excessive turbidity.

The total lift of the pumps at low water, including suction lift and friction losses, will be 34 meters. Pumps are assumed to operate at 45 percent efficiency. To keep the maximum suction lift, including friction, within six meters, it will be necessary to operate the pumps from a lower platform (elevation 1302 meters) during the low water season (November through May).

The settling basin will be provided with a gated drain for annual removal of sediment, estimated to be in the order of 85 cubic meters.

The useful storage of the reservoir will be 200 cubic meters from supply valves placed one meter above reservoir bottom. A drainage valve will be installed at reservoir bottom for annual cleaning of the reservoir.

Daily per capita consumption is estimated at 40 liters which is an established high-side norm for developed rural areas in Ethiopia. The daily project year four demand based on 10,000 the maximum population forecast of the project town at the end of the four-year project period, will be 400 cubic meters. The water supply facility is scheduled to become operational in July of project year two at which time the estimated daily consumption will be 160 cubic meters. The project year three daily consumption is estimated at 280 cubic meters. Thus, the reservoir useful storage comprises 50 percent of maximum projected daily consumption. Initially, the pumps will be operated six hours per day, in project year three nine hours, and project year four 12 hours.

The pumphouse and staff quarters will be constructed of local materials (stone) with cement and corrugated metal roofing being supplied by the project.

3) Cost Estimates

The total estimated cost of the facility, including equipment, construction, engineering, contingency and escalation, is US $ 73,000. A detailed breakdown of this cost is given in Annex B, Exhibit 1 (pages 2 through 4). It is noted that one standby pump/engine unti is included.

The water supply system will be constructed using labor intensive methods.

The estimated operating, maintenance, chemicals, fuel, etc. costs of the facility over a ten-year period are given in Table 2.

4) Operation and Maintenance

The proposed operating staff of the water supply system is as follows:

1 Supervisor

1 Attendant

1 Mechanic

6 Permanent Laborers

During the project period the system will be operated under direction of the Project Director. Upon formation of a municipal government in the project town, the operating staff will be transferred to the municipality.

The major maintenance activities will be maintenance and repair of the pumps and engines, annual draining and cleaning of the settling basin and reservoir, clearing the intake site, and checking pipelines and anchors for necessary repairs. Records will be kept of water collected at the reservoir by recipients and tariff will be collected from head of household monthly. However, recipients will have the option of paying cash for water upon receipt.

Operation of such a sedimentary water supply system will be very simple. The staff, listed above, will be recruited approximately six months before completion of construction and trained by the TA Team and its counterparts in pump and engine operation, maintenance, and repair; amounts, methods, and frequency

Table 2
Operating Cost Estimate
Didesa Water Supply System
(US $000)

Item	Operating Year									
	1	2	3	4	5	6	7	8	9	10
Staff Salaries	5.3	10.6	10.6	10.6	10.6	10.6	10.6	10.6	10.6	10.6
Repair & Maintenance	3.1	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2
Fuel and Oil	0.8	2.4	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
Chemicals and Supplies	2.8	8.8	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5
Replacement of Pumps and Engines	-	-	-	-	-	11.0	-	-	-	-
Total	12.0	28.0	30.0	30.0	30.0	41.0	30.0	30.0	30.0	30.0

of manually adding chemicals to the settling basin and reservoir; keeping records and billing procedures; when and how to change pump location to high and low water positions; and frequency and method of sampling reservoir effluent for laboratory analysis to ensure continued potability.

A water tariff of equivalent US$0.21 is estimated to be adequate to meet annual operation and maintenance costs.

Provision of village water will be the cooperative responsiblity of the Peasant Associations, with technical advice provided by the project organization. Village water will be provided by hand dug wells. In areas where ground water is not present in sufficient quantity near the surface, small earthen dams will be placed across minor waterways, to carry through the dry season when tributaries dry up.

d. Tsetse Fly Control

To prevent the incidence of human and animal trypanosomiasis, an effective tsetse fly control program is vital. Control measures to be applied will consist of clearing and spraying five areas: (1) buffer zones at the upstream and downstream project boundaries to an elevation of 1,500 meters; (2) tributaries within the project boundary; (3) strips through the riverine forest to the Didesa River; (4) project farm area; (5) project center area; together with annual spraying of buffer zone fringes, tributaries, fringes of riverine forest along the Didesa River, and fringes of cleared strips. Acreage to be cleared and sprayed over the four years of the project are:

	1977	1978	1979	1980	Total
	(Hectares)				
Buffer Zone	11,500	—	—	—	11,500
Tributaries	200	—	—	—	200
Didesa River Strips	25	25	25	25	100
Project Farm and Center	500	500	—	—	1,000
Total	12,225	525	25	25	12,800

The conventional technology of clearing and spraying was chosen since other measures, e.g., introduction of sterile male flies, are not yet perfected for practical applications. Both the initial work and annual maintenance will be carried out by the project on a labor intensive basis through hired day labor. The estimated annual labor input for initial clearing and maintenance follows:

	Project Fiscal Year			
	1977	1978	1979	1980
	(Person months)			
Skilled	60	12	12	12
Unskilled	8,000	1,040	1,000	960

Tributary buffer zone and strip clearing will be carried out during CY 1977. The downstream project boundary buffer zone will be about 15 kilometers long by five kilometers wide (7,500) hectares, and the upstream buffer zone will be approximately eight kilometers long by five kilometers wide (4,000 hectares). Tributary clearance strips about 100 hectares. Other cleared areas will total approximately 1,000 hectares.

A detailed plan of clearing will be developed with the arrival of the grant-funded TA team. AID funds will finance local cost of hand tools and laborers shown in Annex B, Exhibit 1(page 4).

e. Extension Services

An agricultural extension program will be established with the arrival of the first tranch of settlers. The extension program will be carried out by project personnel. Qualified senior agents will be assigned to the project and will assist in training junior agents recruited locally within the project region. The number of senior and junior "on site" agents to be made available to the project over a four year period appears below:

	1976	1977	1978	1979	1980
Senior	2	4	6	5	2
Junior agents	20	44	58	46	24

Facilities and equipment to be provided by the project for extension services will include: (1) six staff houses built of local materials (stone); (2) one office; (3) one storage shed; (4) two 4WD vehicles; and (5) 74 bicycles.

The cost and basic specifications of these items are shown in Annex B, Exhibit 1 (page 4).

f. Project Farm

The Project Farm, covering a total area of about 1,000 hectares, will be established in 1977, and will be managed and operated by qualified project personnel. All operations will be under the direction of the Project Director through his Farm Manager. The project farm will carry out seed trials and multiplication, nursery and grazing trials, demonstrations of improved cultural methods and extension agent training. The Agronomist under the AID grant-funded technical assistance team (see below) will play a key role in establishing the farm, planning the various trials, organizing the seed multiplication operation, and training. Clearing of the farm area will be carried out by hand labor in coordination with the tsetse fly control program described above.

Seed multiplication will be done by mechanized means. Demonstrations of improved cultural methods will require oxen and their implements to be developed and improved through experimentation. Special attention will be paid to developing methods whereby the deferred black soils can be made productive through ox-power seed-bed preparation.

AID funding will provide for: (1) three staff houses; (2) one office; (3) one shed; (4) one maintenance/equipment storage shed. Buildings will be designed and constructed under project supervision utilizing locally hired skilled and unskilled labor. Local materials (stone) will be utilized and construction will be of mortared masonry with corrugated metal roofing and glazed windows. AID funding will also provide for fences and farm roads, which will be constructed by the project on a labor intensive basis, and all farm machinery and other equipment.

The Project Farm will be the center-focus for operation and control of the machinery pool. Equipment under the machinery pool will be stored and maintained using project farm facilities and maintenance equipment.

A detailed work plan for the farm will be prepared by the Ethiopian staff and TA contract personnel by mid-1977.

The GOE will provide staff beginning in 1977 as follows:

Farm Manager	1
Technical Assistance	2
Secretary	1
Storekeeper	1
Mechanic	1
Tractor Drivers	2
Tractor Driver helpers	2
Driver	1
Labor as required	

Specifications and cost estimates of the housing, equipment and other items to be financed for the Project Farm are shown in Annex B, Exhibit 1 (page 5).

g. Storage and Marketing

Storage facilities will consist of eight one-story, 1,000 ton capacity grain and pulse stores, built of native stone and mortared masonry with corrugated metal roofing. They will have rodent proof dry storage capacity equal to 25 percent estimated surplus grain and pulse production with floor area of 300 square meters, and will be constructed by locally-hired skilled and unskilled labor under

project supervision. One facility will be completed in 1977, another in 1978, three in 1979 and three in 1980. Other items to be financed include sixteen platform scales and three housing units for staff personnel, to be built with the same materials as the storage facilities. Annex B, Exhibit 1 (page 7) shows costs, specifications and design of all items to be procured and constructed for the storage needs of the project.

The LSA project staff for this activity will be assisted by an AID grant-funded marketing specialist. The staff will serve as agent for the project in marketing the farm production of each Peasant Association to private buyers in the vicinity and/or to the Ethiopian Grain Corporation's grain purchase and price stabilization program.

h. Project Support

This activity includes the project headquarters to be established early in the first year of the project, consisting of: (1) one office building; (2) one store; (3) ten staff houses; (4) one house for the Project Director; and (5) one furnished staff house for the TA team. All buildings will be designed and constructed under project supervision utilizing locally hired skilled and unskilled labor. Local materials(stone) will be utilized and construction will be of mortared masonry with corrugated metal roofing and glazed windows.

Local staff, furnishings, fuel and other general expenses for repair and maintenance, including local travel, allowances, vehicle O & M to support TA contract personnel and direct cost to support project management and technical services are provided for under this activity of the project.

Estimated costs for the investment items to be financed under the AID loan are shown in Annex B, Exhibit 1 (page 8).

i. Machinery Pool

Farm machinery will be operated and maintained by LSA personnel assigned to the project. The central pool will be located at the Project Farm. Machinery will be made available to the Peasant Associations for preparing their first year seedbeds on a rental basis. Its use will be coordinated by the settlement officer working through the senior extension agents. The AID loan and grant provide for the funding of equipment, the grant funds financing the needs of the project for the first year.

The Project Farm will have maintenance shop and equipment storage facilities which are available for support of the equipment contained in the machinery pool.

Annex B, Exhibit 1 (page 9) shows a listing of the equipment and its cost to be financed.

j. Livestock Health Program

Early in the second year of the project, each Peasant Association will acquire 270 oxen (135 teams) which will be financed under the Project Loan Fund (see below). During the third year, it is anticipated that each Association will purchase on the average of about 200 head of cattle (192 cows and 8 bulls) with its own resources. Livestock is readily available for acquisition in the proximity of the project area. The expected build-up of livestock during the four year implementation period of the project is shown below:

	1978		1979		1980	
	No.	Cost	No.	Cost	No.	Cost
	(U.S.$000)		(U.S. $000)		(U.S. $000)	
Oxen	1,350	92	1,620	110	1,620	110
Other Cattle	--	--	1,000	44	1,200	53
Total	1,350	92	2,620	154	2,820	163

Animal health services will be provided by a project-assigned animal health assistant and his staff. The facilities financed under the program include: (1) vehicle; (2) equipment; and (3) building. Equipment specifications, costs, etc., of these facilities are described in Annex B, Exhibit 1 (page 10).

k. Project Loan Fund

The Project Loan Fund is the largest ($951,000) and one of the most important activities under the project. Presently, the principal small farmer credit program in Ethiopia is that of EPID. At the present time, a new institution, the Agricultural Marketing Corporation (AMC), is being organized and a restructuring of GOE agricultural credit policy and procedures is under way presumably to incorporate the Peasant Associations. Until such time as an Ethiopian Government mechanism is established which can deliver credit to the Didesa farmers the project will do so. The working assumption is that the credit program will be required for four years with the GOE's national small farmer credit program phasing in during the last year of the project.

Project loans will be extended to Peasant Associations rather than individual farmers, which means that the Associations must be provided with adequate management and technical competence to support their capacity to repay loans.

The Peasant Associations will need to borrow funds "in kind" (there will be no cash transactions) for the usual purposes: crop production, livestock, handtools, working capital, etc. Repayments will be made in cash from proceeds of crop sales.

EPID experience in administering farmer agricultural credit programs has been good and the LSA will develop equal and satisfactory arrangements for the project. In this connection, the Loan Agreement will require a Condition Precedent to Disbursement requiring the submission of operating policies, procedures, terms of financing, eligibility criteria, and administrative and staffing patterns, etc., for establishing the Project Loan Fund. Anticipated loan terms are shown below.

Type of Loan	Term	Interest
Food Allowance	10-14 months	1% per month
Tools & Implements	14 months	10% per annum
Crop Production	2-11 months	1% per month
Livestock (Oxen)	2 years	10% per annum

Estimates of the need for a $951,000 credit program for this project are based on expected annual loan activity by the seventeen Peasant Associations summarized here:

	1977	1978	1979	1980	Total
	(in U.S. $000)				
Loans made	$221	$525	$787	$845	$2,378
Repayments	--	204	479	795	1,478
Annual Net Disbursements	221	321	308	50	900

A credit expert funded under the AID grant will provide technical assistance to the LSA. One office and three staff houses will be constructed for Project Loan Fund activities. See Annex B, Exhibit 1 (page 11) for details.

1. Other Components

1) Public Services

In addition to the seven loan-financed components of the project described above, which will be supported jointly by AID and the GOE, the GOE will further commit itself to financing four specific public service activities through arrangements made between the Land Settlement Authority and various Ministries or agencies. These are:

a) Malaria Control: Ministry of Public Health - The Malaria Control Service plans the expansion of its national control activities to include the project area starting in the Fall of 1976.

b) Health Stations: Ministry of Public Health - Three health stations are planned for the project area - one in 1977, one in 1978, and one in 1979.

c) Schools: Ministry of Education - Planned educational facilities include 17 minimum formal education schools (grade 1 through 4) with a capacity of 200 students each. Five will be available by 1978, six by 1980 and the final six by 1982.

d) Police: Ministry of the Interior - One police sub-station will be established in 1978.

3. AID Grant [1/]

a) The following technical assistance and commodities will be financed under the proposed $1.5 million AID grant:

1) Consulting Services Contract - Through an AID Contract with a U.S. consulting firm, a team of four experts will be made available to the project site as follows:

a). Regional Development Specialist (Team Leader) - He will have broad experience in rural development strategy including project planning, design, implementation, management, administration, operation and maintenance, counterpart training, and team coordination and direction. He will be responsible for:

(1) coordination and direction of all activities of the team of experts;

(2) working directly with, thereby providing counterpart training to, the Project Director who will have the required educational background but is expected to be relatively inexperienced in managing a project with such multi-disciplinary scope including almost the full range of rural development aspects;

(3) assistance in organizing and establishing the responsibilities of, and providing counterpart training by his three team members for, other key members of the assigned project staff;

1/ See Part III-B for a cost breakdown of items to be financed.

(4) in close collaboration with the Project Director, preparation of a comprehensive implementation plan covering all components of the project;

(5) assistance in organizing a data collection system to provide necessary basic feedback for project monitoring and evaluation;

(6) assisting the Project Director and Settlement Officer in the logistics of caring for incoming settler groups;

(7) advising and assisting the Project Director in his day-to-day management, administration, and operation of the project;

(8) assisting the Project Director in the preparation of all reports required to be submitted to USAID; and

(9) carrying out all the terms of the consultant's contract with AID.

b) Agronomist - He will be experienced in extension work and training, soil-crop relationships, crop and fertilizer trials, farm operations, seed production, and mechanized and animal-power farming systems. He will be responsible for:

(1) assistance in establishing and operating the project extension services;

(2) preparation of extension agent training programs and active assistance in training and re-training agents;

(3) preparation of an extension and demonstration plan;

(4) assisting the senior extension agents in their supervision of junior agents at peasant association level;

(5) continued improvement, as required, of the extension plan; and

(6) laying out and sectioning the project farm and assistance in supervision of its operations, in close collaboration with the Farm Manager, including crop, fertilizer, insecticide, nursery and grazing trials; seed multiplication; development of improved oxen implements; experimentation on the deferred black soils; and experimentation with alternative crops and improved seed varieties.

c) Agricultural Engineer - He will be experienced in laying out farms, soil and water conservation measures, basic rural road design, rural water supply layout, and other rural construction activities. He will be responsible for:

(1) planning and generally supervising topographic surveys and Peasant Association and farm boundary markings;

(2) Laying out and providing general supervision of construction of the project rural road net and upgrading of the external project access road;

(3) Laying out and providing general supervision of construction of the project potable water supply and providing technical assistance for villages water supplies to be built by the Peasant Associations on a cooperative basis;

(4) designing and laying out soil conservation measures to be supervised by extension agents and implemented by the Peasant Associations on a cooperative basis;

(5) assistance in siting and provision of general supervision of constructing of project buildings and animal health facilities; and

(6) Laying out and generally supervising clearing operations for the tsetse fly control program.

d) Agricultural Economist - He will be experienced in credit and marketing organization, management, and implementation with both cooperative and small farms and in dealing with either government or private markets. He will be responsible for:

(1) advising and assisting in establishing the operating policies, loan procedures, repayment procedures, and standards to be used in handling the Project Loan Fund designed to provide in kind credit to peasant associations for initial food allowance, oxen, hand tools, fertilizer, seeds, and other production inputs;

(2) assistance in establishing market outlets to private buyers in the project vicinity and/or to the Ethiopian Grain Corporation's grain purchase and price stabilization program; and

(3) reviewing the credit and marketing operations annually and assisting in revising and improving the program as required.

2) Indefinite Quality Contract (IQC)- Through this type of contractual arrangements, AID will procure the services of a Project Evaluation and Management Specialist who in consultant's capacity will advise on project monitoring, problem diagnosis and evaluation,

and set up a project management information system vis-a-vis small farmer involvement in resettlement and rural development programs (see Part IV.C.).

3) Training - AID will fund three 3-month training courses for three GOE project staff members in other countries having comparable rural development programs and two long-term training programs in agricultural research and extension.

4) Commodities - AID will finance two four-wheel drive vehicles, one sedan, camping and radio communications equipment and scientific support material for the U.S. technicians mentioned in 1) above. AID will also finance the first year requirements for project off-shore procurement items, including 8 sets of farm machinery, 7 four-wheel drive vehicles, maintenance tools, and 20 bicycles. See Part III B (Table 3) and Annex B, Exhibit 1 (pages 4, 5, 6, 9 and 11) for lists and cost estimates.

5) Other Costs - Funds will be provided by AID for international travel and per diem for selected project staff to attend international conferences. Lastly, a small reserve fund will be available for miscellaneous emergency supplies.

4. Waiving Competitive Selection of Consulting Services 1/

The Ethiopian Government has requested that AID waive the normal competitive bidding procedures in order to secure the services of TAMS to provide technical assistance personnel for the Upper Didesa Project. The Government feels that TAMS should be awarded the contract principally for two reasons: timing and proven capability.

a. Timing. Due to the desires of the GOE to get settlement activities underway as quickly as possible to help demonstrate to the Ethiopian rural population the veracity of its commitment to rapid economic development for these peoples, the Government is anxious to begin implementation of the Upper Didesa Project almost immediately. It, therefore, greatly desires that the TA personnel be recruited and on site by mid-August, 1976 if the project timetable is to be adhered to. The Government holds the strong opinion that TAMS can provide the required personnel within the time period. Further, the Government is also aware of the lengthy period of time required by the normal U.S. Government bidding, contractor selection, and technician recruitment process. If the AID Loan is approved in July 1976, the first technician recruited under normal AID procedures would probably not arrive in Ethiopia until the spring of 1977. If TAMS can have technicians on board by mid-August or early September, the project will be underway 7-9 months before it would be if AID utilizes its normal contracting procedures.

1/ Refer to Recommendation No. 3, Part I.

b. Proven Capability. TAMS has had considerable experience in Ethiopia in area development and road projects. They surveyed the original five areas proposed for the Southwest Ethiopia resettlement project and undertook the in-depth feasibility studies of the Upper Didesa and Gambela areas. The Ethiopian Government appears to have been pleased with TAMS' performance (presumably in comparison with other potential contractors) since they have requested that they be awarded the Upper Didesa TA contract.

c. Mission Commentary. The Mission concurs with the Government's request. Our own experience with TAMS in the pre-feasibility and feasibility stages has been excellent. In view of the Ethiopian Government's strong preference and our own high regard for the performance of TAMS in the project preparation phases, the Mission proposed that TAMS be contracted to undertake the technical assistance aspects of the project under procedures established in Chapter 7 (Subpart 7-3.101-50, Exceptions to normal negotiation procedures.) of the Code of Federal Regulations No. 41 (July 1, 1975).

The "justification for Noncompetitive Procurement" is based principally upon the GOE's and Mission's judgments that no other possible contractor could provide the needed personnel within the necessary time frame. Further, it is the Mission's view that it is in the best interest of the USG in terms of its overall relations with the GOE to make every attempt to be responsive to this type of Ethiopian Government request. This is the first AID project to be wholly designed in collaboration with the new government. This government is anxious to demonstrate its commitment to rural development and the Upper Didesa Project is one of the first examples of this commitment. If the USG is put in a position of holding up the start of the project through "bureaucratics", it clearly will not be helpful to improved relations between the two governments.

Major activities requiring technical assistance as soon as possible, but not later than September 1976, include: (1) development of a program for, and general supervision of, topographical surveys and Peasant Association and farm boundary marking for the first-year settlers; (2) design of soil conservation measures; (3) detailed layout and general supervision of road upgrading and new construction; (4) specifications for off-shore procurement items (farm machinery, vehicles, etc.); (5) junior extension agent training; (6) project farm layout; (7) assistance in setting up farm credit mechanism; (8) preparation of tsetse fly control program; (9) assistance in the selection and orientation of key project support staff.

Failure to accomplish the above pre-settlement activities will result in the loss of one full crop year since crops must be

planted in April/May and harvested and threshed during October/ December as dictated by the rainy season. The Land Settlement Authority would, as a consequance, have the responsibility of caring for 2,000 non-productive families for one complete year.

5. Environmental Assessment [1/]

The Upper Didesa Valley is a sparsely populated region in Southwest Ethiopia with very little wildlife save for some Nile crocodile and hippopotamus in the Didesa River and small forest dwellers in the wooded valley walls. It is not believed that any rare or endangered species inhabit the area. Neither is there any evidence of the presence of sites of special archaeological, historical or traditional importance in the region.

Once more heavily populated than today, the valley is currently inhabited by some 1,500 peasants maintaining themselves with rudimentary cultivation and cattle grazing. Soil and air quality inevitably have suffered from the peasants' custom of burning off grazing land to encourage new growth, and absence of fertilizers or erosion control have led to soil depletion in the areas presently cultivated. As against these, however, human and animal - both wild and domestic - ecology have long suffered to a much greater degree from the prevalence of the tsetse fly and malaria mosquito which prosper in the valley.

Human intrusion into the current ecosystem through the vehicle of the proposed program will of course change the existing balance, especially during the clearing and construction phases. Tsetse and malaria eradication programs are necessarily drastic in clearing and chemical treatment; all road-building and construction undertakings, however modest, degrade the environment temporarily. When weighed against the alternative of allowing domination of the ecology by insects inimical to mammalian life, however, the threat posed by carefully regulated agricultural development diminishes in intensity.

The GOE is fully cognizant of the need for meticulous control of all chemical operations under the program. Through the Ministries of Education and Public Health, instruction is to be given settlers in proper techniques of waste disposal and disease control, and Peasant Association members will be closely supervised

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1/ This section is excerpted from the environmental assessment report prepared for TAMS by A. Graffe, April 26, 1976. See Annex C.

in using chemicals in cultivation. Regular testing of water supplies, both fluvial and subterranean, will be conducted as an integral part of the development effort.

Far from threatening a pristine natural ecosystem, the Upper Didesa Valley development program will instead use man's skills and energy to create an environment enabling idle land to fulfill its potential in productively supporting human and animal life.

6. Technical Soundness

The engineering technical design was developed by the consultant (TAMS) under the Phase II feasibility study completed in October 1975. The study established the agriculture methodology applicable to the project which in turn established the appropriate standards for the technical design.

The technical designs reflect the conceptual aspect of the highly labor intensive development process for the project.

Estimated costs for the technical designs were prepared by the consultant based on actual developed prices and review of applicable price trends in Ethiopia prevalent during the Phase II study. It is the conclusion from the AID review that the consultant's estimates are adequate, based upon accepted methodology, and sufficiently well prepared to meet the applicable FAA Section 611 requirements.

B. Financial Analysis and Plan

1. Financial Viability

a. Financial Effect on Project Participants

While the ultimate beneficiary of the project will be the small farmers, the basic units used to determine financial viability are Peasant Associations which will comprise, on the average, 400 farm families each. On the basis of production and sales data and operating and investment cost inputs discussed in Annex B, Exhibit 2, a typical Peasant Association cash flow analysis was prepared and is summarized in Table 3 over a ten-year period.

b. Financial Viability of the Project

The project was analyzed utilizing financial costs versus farmgate market prices. This resulted in an internal rate of return of 37 percent and a benefit cost ratio (at 10 percent) of 1.31. A full explanation of the methodology employed is described in the Economic Analysis, Section D, below.

2. Recurring Budget Analysis

Recurrent budget requirements following completion of A.I.D. inputs will amount to approximately $227,000 (Eth$ 466,000), as is shown below:

a.	Project Support Staff (Land Settlement Authority	162,000
b.	Road Maintenance (Highway Authority)	32,000
c.	Project Farm (Ministry of Agriculture)	187,000
d.	Tsetse Control (Ministry of Agriculture)	35,000
e.	Livestock Health (Ministry of Agriculture)	50,000
		Eth$ 466,000 (US$ 227,000)

Table 3
Source and Application of Funds
Model Peasant Association
(US$ 000)

	0	1	2	3	4	5	6	7	8	9	10
Source											
Crop Sales	--	39.9	136.3	210.3	239.0	241.2	241.2	241.2	241.2	241.2	241.2
Livestock Sales	--	--	--	--	--	--	--	15.1	9.2	13.6	14.6
Wages	3.5	35.1	--	--	--	--	--	--	--	--	--
Loan Proceeds											
Food Allowance	2.0	7.8	--	--	--	--	--	--	--	--	--
Implements	0.9	--	--	--	--	--	--	--	--	--	--
Production Loan	--	30.1	37.7	44.7	48.1	51.7	51.7	51.7	51.7	51.7	51.7
Livestock Loan (oxen)	--	--	18.4	--	--	--	--	--	--	--	--
Total Inflow	6.4	112.9	192.4	255.0	287.1	292.9	292.9	308.0	302.1	306.5	307.5
Application											
Operating Costs	--	37.3	55.4	70.5	78.0	82.9	83.4	83.4	83.4	83.4	83.4
Investments	0.9	3.6	20.3	31.1	1.2	3.6	1.6	1.2	1.2	3.3	1.9
Food Expense	2.0	7.8	--	--	--	--	--	--	--	--	--
Debt Service	--	42.0	48.3	55.3	48.1	51.7	51.7	51.7	51.7	51.7	51.7
Total Outflow	2.9	90.7	124.0	156.9	127.3	138.2	136.7	136.3	136.3	138.4	137.0
Cash Balance	3.5	22.2	68.4	98.1	159.8	154.7	156.2	171.7	165.8	168.1	170.5
Land Use Fee	--	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
Agricultural Income Tax	--	0.6	0.6	0.6	0.9	0.9	0.9	0.9	0.9	0.9	0.9
Net Income	3.5	21.0	67.2	96.9	158.3	153.2	154.7	170.2	164.3	166.6	169.0

As can be seen from the above, these costs will be incurred by the Ministry of Agriculture with the exception of road maintenance and project support.

Road maintenance will be in part the responsibility of the Peasant Associations and in part the responsibility of the Rural Roads Organization. The latter is presently being established and should be operable by FY 1977, hence, there is no recurrent budget available. The existing Ethiopian Roads Authority is presently responsible for road maintenance and their budget for this purpose amounted to Eth$27.3 million in FY 1976, which represents an increase of 37% over the Eth$19.9 million budgeted in FY 1974. The total amount necessary for maintenance of this section of road (even assuming no contribution from the Associations)is Eth$32,000, an amount easily covered under the maintenance budget.

The Project Support component will continue as a recurring cost only as long as the LSA deems it a necessity; this can only be determined during implementation of the project.

In relation to the present (FY 1976) and proposed budget for FY 1977 for the LSA, there should be no difficulty meeting the continued Project Support Staff component of the above recurring costs. Present capital and recurrent budgets for the LSA total Eth$3.3 million (2.5 and .8 million respectively) for settling 5,000 families. Their proposed budget for FY 1977 is for Eth$12,000,000 to settle 20,000 families. Even if there are no future increases in the budget, the recurrent costs can be met easily out of their present and proposed future budgets.

The major portion of recurring costs--the Project Farm, tsetse control and livestock health--requires a recurring budget of Eth$272,000. This can easily be assimilated into the Ministry of Agriculture budget which was Eth$17.3 million for FY 1976, a 34% increase from FY 1974.

3. Financial Plan and Budget Tables

The total cost of this four-year project is estimated at $6,027,000, of which $2,570,000 will be financed with AID loan funds and $1,500,000 with grant funds. The GOE will contribute the equivalent of $1,957,000 during the life of the project.

The following three tables illustrate the financial aspects of the project.

Table 4 is a summary cost estimate and financial plan for the project. As indicated, the $6,027,000 program is mainly local cost financing (27 percent foreign exchange), 68 percent to be financed by A.I.D. and 32 percent by the GOE.

Table 5 is an annually time-phased presentation of project expenditures by source and application.

Table 6 presents the financing plan for the project by major output elements as a function of the input activities which contribute to their generation. Reference should be made to the Logical Framework Matrix shown in Annex D.

TABLE 4

SUMMARY COST ESTIMATE AND FINANCIAL PLAN

(US$ 000)

SOURCE	AID		GOE		TOTAL
	FX	LOCAL	FX	LOCAL	
USE					
LOAN					
Extension Service	5	25		296	326
Project Farm	42	104		224	370
Machinery Pool	29	228		154	411
Livestock Health Program	20	33		53	106
Project Loan Fund		730		221	951
Storage/Marketing		222		76	298
Tsetse Fly Control		178		58	236
Roads and Drainage		745		33	778
Water Supply	11	86		47	144
Project Support	8	104		651	763
Surveys and Mapping				144	144
Loan Sub-Total	115	2,455		1,957	4,527
GRANT 1/					
Consultants and IQC	1,035	-			1,035
Training	59				59
Commodities	360				360
Other Costs	46				46
Grant Sub-Total	1,500				1,500
Total	1,615 2/	2,455 2/		1,957	6,027

1/ For a description of the components of the AID Grant refer to Part IIIA 3. Almost $300,000 will finance first year project FX procurement requirements.

2/ The AID Loan includes an escalation factor varying from 6 to 15% depending upon the applicable item covering inflation. The Water Supply Component contains an additional 10% for contingencies. All other cost estimates are firm and do not require a further allocation for contingencies. See Annex B, Exhibit 1 for details. It is felt the 15% inflation factor is adequate to cover both inflation and contingencies.

Table 5

Upper Didesa Development
Scheduled Project Expenditures
(US$ 000)

Inputs	FY 1977	FY 1978	FY 1979	FY 1980	Total
Extension Service					
GOE	58	80	83	75	296
AID	10	9	6	5	30
Project Farm					
GOE	39	49	67	69	224
AID	46	54	23	23	146
Machinery Pool					
GOE	34	51	69	-	154
AID	36	116	105	-	257
Livestock Program					
GOE	-	21	16	16	53
AID	-	23	16	14	53
Credit Loan Fund					
GOE	37	69	73	42	221
AID	201	264	247	18	730
Storage and Marketing					
GOE	10	16	21	29	76
AID	36	25	77	84	222
Tsetse Fly Control					
GOE	9	18	15	16	58
AID	79	81	9	9	178
Roads					
GOE	-	9	11	13	33
AID	208	250	208	79	745
Water Supply					
GOE	-	8	19	20	47
AID	3	75	9	10	97
Project Support					
GOE	177	172	169	133	651
AID	13	71	14	14	112

Table 5 (continued)

Inputs	FY 1977	FY 1978	FY 1979	FY 1980	Total
Surveying and Mapping					
GOE	52	48	44	-	144
AID	-	-	-	-	-
Total Loan Package					
GOE	416	541	587	413	1,957
AID	632	968	714	256	2,570
Technical Assistance					
GOE	-	-	-	-	-
AID	707	348	244	201	1,500
Total Grant	707	348	244	201	1,500
Total Program	1,755	1,857	1,545	870	6,027

Table 6

Costing of Project Outputs/Inputs
(US$ 000)

Project Inputs	Extension Services	Project Farm	Machinery Pool	Livestock Program	Project Loan Fund	Storage & Marketing
AID Funded						
Investment	12	47	-	24	7	216
O & M	13	57	228	9	-	6
Revolving Credit Fund	-	-	-	-	723	-
Technical Assistance	-	-	-	-	-	-
Training	-	-	-	-	-	-
Commodities	29	95	229	20	-	-
Other Costs	-	-	-	-	-	-
Total AID	54	199	457	53	730	222
GOE Funded						
Investment	7	4	-	4	-	-
Salaries	275	78	-	39	44	39
O & M	14	88	154	4	-	37
Revolving Credit Fund	-	-	-	-	177	-
Farm Supplies	-	54	-	6	-	-
Technical Assistance						
Local Salaries	-	-	-	-	-	-
O & M	-	-	-	-	-	-
Other Costs	-	-	-	-	-	-
Total GOE	296	224	154	53	221	76
Total Program	350	423	611	106	951	298

Table 6 (continued)

Project Inputs	Tsetse Fly Control	Roads	Water Supply	Project Support	Surveys & Mapping	Total
AID Funded						
Investment	171	741	63	63	-	1,344
O & M	7	4	23	41	-	388
Revolving Credit Fund	-	-	-	-	-	723
Technical Assistance	-	-	-	1,035	-	1,035
Training	-	-	-	59	-	59
Commodities	-	-	11	91	-	475
Other Costs	-	-	-	46	-	46
Total AID	178	745	97	1,335	-	4,070
GOE Funded						
Investment	-	-	-	16	-	31
Salaries	-	-	27	252	87	841
O & M	58	33	20	55	57	520
Revolving Credit Fund	-	-	-	-	-	177
Farm Supplies	-	-	-	-	-	60
Technical Assistance						
Local Salaries	-	-	-	129	-	129
O & M	-	-	-	117	-	117
Other Costs	-	-	-	82	-	82
Total GOE	58	33	47	651	144	1,957
Total Program	236	778	144	1,986	144	6,027

4. Summary

Based on the analysis set forth in this section, the USAID Mission to Ethiopia concludes that the financial plan is adequate and firm, and that the overall financial soundness of the project and Borrower warrant favorable consideration by A.I.D.

C. Social Soundness Analysis

A detailed analysis is contained in Annex B, Exhibit 6. It represents a heavy investment by the USAID in social science analysis in developing the project, and draws upon three studies:

1. TAMS Feasibility Report of October 1975.

2. "Social Soundness of Agrarian Reforms in Ethiopia" by Allen Hoben, February 1976.

3. "Government Policy on Settlement and Potential Settlers for the Upper Didesa Project" by Gail Simpson, March 1976.

A resume of the analysis follows:

Social analyses are generally made to determine conformity of the project objectives with the existing social and political structure. In Ethiopia, these structures are presently in a state of flux and efforts to establish a new social order are underway. Elements of this project are designed as a testing ground to assist the GOE in developing a viable social order in Ethiopia, centered around the establishment of Peasant Associations.

The design of the GOE's new agrarian reform program is consistent with the objectives of the Social Soundness Analysis in regard to the participation of the rural poor in the development process. Central in this participation are the Peasant Associations, which collectively are becoming a focal point of the Ethiopian socioeconomic system. After necessary initial implementation, the role of the Land Settlement Authority as project overseer will diminish as the Associations become functional and assume decision-making about their own needs.

1. Project Participants

Any resettlement project establishes a new society, and its success is heavily dependent on settler participation from the very beginning. With this in mind, the GOE is exercising great care in selecting settlers for the Upper Didesa Project. Motivation has proven to be the main ingredient of success for a settlement project and is being given as much consideration as economic need. Priority will be given to those families now on the settlement site, and to other needy families in adjoining areas. These families have the necessary agricultural background and it is expected that they will participate enthusiastically in the project, and those in the surrounding region who do not directly participate in the project will significantly benefit from its presence, for social ties created between settlers and neighbors will be invaluable in fostering regional integration and in disseminating new ideas from the project extension services.

Further candidates for resettlement will be drawn from the underemployed and unemployed rural peoples whose only potential source of income is coffee harvesting during a maximum of three months per year. The nearby urban area of Jima, where coffee pickers congregate during off-season, has one of the worst unemployment problems in the country, with a recent estimate of 18,000 idle workers; land reform has reduced the need for hired labor during coffee harvest as the large plantations have been broken up among small holders who manage their own plots. All these potential settlers share an immediate peasant farmer background and a nearly universal desire to return to farming under improved circumstances. They possess the basic farming skills necessary for rural life, and view the settlement project as providing those means to livelihood lacking in their current dilemma. Their motivation is high; recruiting will not be difficult among this group.

2. Potential Problems

The principle of cooperation in farming should pose no problems of acceptance by selected settlers; mutual farm labor exchange is already a way of life within the project area. Historically, population transfers for settlement have granted favored status to one group, but with tillage rights awarded to the Peasant Associations, preferential treatment will be eliminated. Communication between peasants and higher authorities will be facilitated by the GOE junior extension agents who will reside with the settlers and speak the local Oromo language as well as Amharic. To provide for the interaction, the MIS (see Evaluation Plan, Part IV., Section C.) will act as a feedback mechanism to aid bottom-up participation and control.

The GOE is seeking a successful settlement through careful selection of well-motivated as well as needy people and by providing a method for communication between the Peasant Associations and the LSA, both basic requirements for the achievement of the program's goals.

3. Role of Women

Statistics dealing with the economic activity of a population are geared to wage income, and are hard to apply to the traditional contribution made by women in simple agricultural environments. If the role of rural women like the Ethiopian peasant farm wife is taken in terms of real labor, her economic activity is equal to that of her husband. Men prepare the soil and plant; women weed, harvest and thresh. Food preparation and child care are also women's tasks together with dairy chores, weaving and marketing of any surplus.

Women are crucial in peasant farming, and all female settlers in the Upper Didesa Project can expect full participation in the agricultural program. During the early phase of clearing and construction, women will

be occupied in providing food for the workers and for their families, and in homemaking. Many benefits will accrue to women under the program. Of major importance, as expressed by current inhabitants of the valley, is better health for herself and her family, one of the primary objectives of the program.

Project infrastructure will reduce the daily time needed for the simplest chores such as providing water for the household, and many domestic tasks will be lightened by the establishment of villages. With home gardens, women will be able to provide their families with improved nourishment. Health centers close at hand will modify infant mortality as well as encourage improved hygiene and basic health care.

A further potential for significantly changing the position of women in this settlement is in the schools to be established, for girls in rural Ethiopia typically have had less access to the country's limited educational facilities than have boys. With adult women's tasks lightened under the program, daughters should have time available to attend school.

The Upper Didesa Project is founded on the GOE's land reform program which specifically confers equality to women in rights of land tillage, and the Peasant Associations are directed to establish women's associations. The formation of a new society in this settlement program should provide the opportunity for these proclamations to actually come into being, bringing the women in this development program into even more active participation than they have traditionally enjoyed.

D. Economic Analysis

1. Introduction

Presented in this section is the economic analysis of the proposed project. Discussions to this point have proceeded in financial terms in that all costs and prices have been given at market values. In this section, the components of the project are aggregated and their costs and benefits compared at economic prices. Costs are evaluated in terms of the estimated net drain on the economy's resources, and benefits are evaluated in terms of their estimated net contribution to the country's economic welfare. Both the internal economic rate of return and the benefit-cost ration are calculated to give an estimate of the relative contribution the project will make to the economy as compared to other projects similarly evaluated.

2. Planning Period

The economic life (period of analysis) of the project was taken to be 20 years; however, in fact, it is reasonable to assume that the economic life will far exceed this period.

3. Project Benefits

In a comprehensive, multi-disciplinary project of this type, both costs and benefits are numerous and varied. The economic analysis must, out of practical necessity, be focused on those costs and benefits which can be identified and evaluated. The estimated project costs were presented in financial terms previously in the Financial Analysis, and the basis for the costs are presented both there and in the Project Description. For purposes of economic analysis, these costs must be evaluated at economic prices.

Many benefits will be derived from the project. There are the obvious benefits of increased farm production which form the quantitative basis upon which the project is analyzed. The incremental gross benefits are determined by simply subtracting the extremely small present production value from the estimated project production value through each of the 20 years in the period of analysis. Many other benefits will also result from implementation of the project which can only be accounted for on a qualitative basis, including:

a. the social benefits in settling nearly 6,800 landless farm families;

b. jobs and income generated in the handling and transport of agricultural produce;

c. spontaneous settlement of adjacent lands outside the project boundary;

d. spontaneous development and other economic activity along the Bedele/Kolosuri road proposed to be upgraded;

e. income to the anticipated non-farm population (expected to roughly equal the farm population) in providing services and consumer goods to the farm population;

f. jobs and income in construction and construction materials;

g. improved labor productivity due to better health care and educational facilities;

h. value of orchards, gardens, woodlots and small animals on each farm; and

i. time savings of passenger traffic over new roads.

The Peasant Association model presented earlier in this part of the Project Paper was the basic unit from which aggregate benefits were derived (see Financial Analysis, Section 3 above, and Annex B., Exhibit 5). The total annual gross benefits (farmgate value of crops plus livestock sales) were aggregated according to the same schedule as for the settlement of farmers into Peasant Associations (see Part III and Annex B., Exhibit 2). This aggregation resulted in a stream of gross farm benefits due to the project. Present project area production value was subtracted from this stream to yield an incremental gross benefit stream.

4. Valuation of Costs and Benefits

a. Economic Costs

The "Guide to Project Planning in Ethiopia"[1/] was generally followed in converting costs to economic terms for this analysis; however, certain variations were made (most notably unskilled labor) to fit regional conditions. The basic conversion factors calculated by the PCO are as follows:

1/ "A Guide to Project Planning in Ethiopia," Planning Commission Office (PCO), June 1972, Chapter 4.

Transport	1.00	
Electricity	1.30	or 1.70 depending on which power authority is supplie:
Construction	0.90	
Standard Conversion Factor (SCF)	0.85	
Wage Rates	0.70	

Wage rates (unskilled) were shadow priced at 50 percent of the market rate in converting the labor portion of labor intensive estimated construction costs in that the only major alternative employment in the region is seasonal coffee picking which spans about a three-month period; the normal construction season for project works would have at least six months duration each year. In other instances where the PCO Guide was neither specific enough nor did not treat a particular item, a factor was used which was most consistent with the basic approach contained in the Guide.

Conventional project analysis, from the economic point of view, excludes taxes and duties. Nearly all imported farm inputs are duty free, thus, adjustment for duties was not necessary. A major exception is fuel, from which duty was removed to arrive at the economic cost of operating farm machinery. Duty was also removed from vehicles and required fuel in arriving at economic costs for these items.

The following conversion factors were used in shadow pricing all development costs and farm budget items:

Mapping and Surveys	0.85
Heavy Equipment Operation	0.75
Materials	0.85
Management	0.85
Salaries & Skilled Labor	0.85
Unskilled Labor	0.50
Buildings	0.85
Bridge Construction	0.85
Machinery	1.00 [1/]
Vehicles	1.00 [1/]
Farm Machinery	1.00
Fuel	1.00 [1/]
Spare Parts	1.00 [1/]
Public Services	0.85
Credit	1.00
Animals	0.85
Drugs and Chemicals	1.00
Insecticides	1.00
Fertilizer	1.00

1/ This factor was applied after deducting import duties.

Seeds	0.85
Farm Family Labor	0.00
Income Tax	0.00
Debt. Service (Farm Budgets)	0.00
Custom Machine Services (Farm Budgets)	0.00

b. Economic Prices

As per decisions reached during the final meeting of the GOE Interministerial Committee, import parity prices of maize and sorghum, backed up to farmgate, were used to represent economic prices; these prices were computed on the basis of the latest available U.S. FOB Gulf commodity listing and Gulf/Asseb bulk shipping rates. Export parity prices were used to represent economic prices in the case of chickpeas. The resulting economic farmgate prices, in equivalent U.S. dollars per quintal, are listed below.

Maize	18.01
Sorghum	17.53
Chickpeas	13.15

5. Aggregated Economic Costs

The sum of the costs of the various proposed project investments and recurring costs plus the aggregated farm costs constitute the cost stream of the project. The annual costs (both capital and recurring) for each sub-project, the aggregated annual farm investment and operating costs, and the total for the project are given in Table 7. These costs are all converted to economic terms in accordance with the factors discussed earlier in this section. It is noted that the revolving credit fund is returned to the net benefit stream, at its discounted value, in year 20, the end of the period of analysis. Handling and storage charges are included as negative costs, i.e., net revenues.

6. Aggregated Economic Benefits

Economic benefits were determined by aggregating the economic farmgate value of crops and livestock for each year in accordance with the settlement rate discussed in Part II of this Project Paper and the Peasant Association budget analysis presented earlier in this part, and subtracting present project area production value. Except for this present production value, no other alternate forms of income were envisioned. It was assumed that these families would have no alternative employment opportunities due to their present state of under/unemployment. The resulting benefit stream is given in Table 8.

Table 7

Economic Project Investment and Farm Costs
(U.S.$ 000)

Project Year	Roads	Water Supply	Testing & Extension	Credit & Marketing	Tsetse Fly Control	Project Custom Machinery
0	56	-	38	14	--	--
1	198	3	159	265	104	265
2	147	65	163	300	20	93
3	122	2	145	253	19	94
4	11	(6)	111	(75)	17	--
5	11	(6)	87	(225)	16	--
6	11	(6)	75	(258)	14	--
7	11	(4)	79	(232)	11	--
8	11	(6)	78	(254)	11	--
9	11	(6)	72	(254)	11	--
10	11	(6)	73	(254)	11	--
11	11	(6)	83	(244)	11	--
12	11	(4)	75	(254)	11	--
13	11	(6)	79	(254)	11	--
14	11	(6)	78	(254)	11	--
15	11	(6)	68	(254)	11	--
16	11	(6)	75	(254)	11	--
17	11	(4)	72	(254)	11	--
18	11	(6)	71	(254)	11	--
19	11	(6)	82	(254)	11	--
20	11	(6)	81	(1132)	11	--

Table (continued)

Project Year	Surveys & Mapping	Livestock Health	Public Services	Management & Organization	Technical Assistance	Total Farm Costs	Total Costs
0	18	--	--	24	233	4	387
1	53	24	47	152	446	107	1823
2	26	27	121	67	374	417	1820
3	26	17	67	67	287	834	1933
4	--	24	129	67	127	1087	1492
5	--	22	76	67	--	1137	1185
6	--	22	147	71	--	1104	1180
7	--	29	99	94	--	1144	1239
8	--	21	107	67	--	1143	1178
9	--	22	114	67	--	1151	1189
10	--	22	125	67	--	1157	1206
11	--	24	125	75	--	1157	1236
12	--	28	125	67	--	1143	1210
13	--	22	125	94	--	1151	1233
14	--	22	125	67	--	1221	1275
15	--	21	125	67	--	1235	1278
16	--	22	125	71	--	1220	1275
17	--	29	125	61	--	1149	1214
18	--	22	125	67	--	1154	1201
19	--	21	125	94	--	1154	1238
20	--	21	125	67	--	1142	320

Table8

Gross Project Benefits
(U.S.$ 000)

Project Year	Farmgate Sales Value	Present Production Value	Gross Project Benefits
0	--	--	--
1	445	8	437
2	1772	18	1754
3	3795	27	3768
4	5594	27	5567
5	6497	27	6470
6	6758	27	6731
7	6838	27	6811
8	6889	27	6862
9	6955	27	6928
10	6952	27	6925
11	6980	27	6953
12	6985	27	6958
13	6985	27	6958
14	6985	27	6958
15	6985	27	6958
16	6985	27	6958
17	6985	27	6958
18	6985	27	6958
19	6985	27	6958
20	6985	27	6958

7. Internal Economic Rate of Return and Benefit-Cost Ratio

Presented in Table 9 is the basic economic analysis of the project. Total project and farm costs are subtracted from gross benefits to arrive at net economic benefits; this column is the basic economic benefit stream generated by the project.

The internal economic rate of return from the project was found by discounting the net benefit stream, and the benefit-cost ratio was computed by discounting the gross benefit and total cost streams at ten percent[1/] and dividing. The rate of return is 36 percent, and the benefit-cost ratio is 3.64. This high rate of return and benefit-cost ratio are results of relatively low resettlement costs ($613 per farm family) and the full benefits of farm production accruing to the project. These rates are much higher than in the original project proposed by TAMS.

The project was also analyzed using financial costs versus farmgate market prices. The results were: internal rate of return, 37 percent; benefit-cost ratio at 10 percent, 1.81; and net present worth at 10 percent, U.S.$11,533,000.

8. Sensitivity Analyses

In view of the high internal economic rate of return shown by the project, the following sensitivity analyses were made: (a) crop yield reduction of 20 percent, together with cost increase of 20 percent; (b) utilization of market farmgate prices in place of import and export parity prices; and (c) same as (b) with crop yield reduction of 20 percent, together with cost increase of 20 percent. The results of these analyses are tabulated below. The sensitivity analyses utilizing market prices is similar to that previously done for the initial TAMS project proposal. In that instance, the internal rate of return was 32 percent and the benefit-cost ratio was 1.8. It has now increased to 49 percent and 2.29 due to the elimination of black cotton soils from the project.

Even in the extreme case of utilizing market prices and assuming a decrease of 20 percent in production accompanied by an increase of 20 percent in costs, there is still an acceptable rate of return of 27 percent and a benefit-cost ratio of 1.53.

1/ This discounting rate was agreed to by the Planning Commission Office (PCO) of the GOE.

Table 9

Net Project Benefits
Internal Economic Rate of Return
and Benefit-Cost Ratio
(U.S.$ 000)

Project Year	Gross Project Benefits	Total Costs	Net Project Benefits
0	---	387	(387)
1	437	1823	(1386)
2	1754	1820	(66)
3	3768	1933	1835
4	5567	1492	4075
5	6470	1185	5285
6	6731	1180	5551
7	6811	1239	5572
8	6862	1178	5684
9	6928	1189	5739
10	6925	1206	5719
11	6953	1236	5717
12	6958	1210	5748
13	6958	1233	5725
14	6958	1275	5683
15	6958	1278	5680
16	6958	1275	5683
17	6958	1214	5744
18	6958	1201	5757
19	6958	1238	5720
20	6958	320	6638
PW at 10%	40985	11253	29732

NPW at 10% = U.S.$ 29,732,000 B/C Ratio at 10% = 3.64

IERR = 86%

Analyses	IERR	B/C Ratio at 10%	Net Present Worth at 10%
Yield reduction of 20% and cost increase of 20%	54%	2.43	US $19,284,000
Using market prices	49%	2.29	US $14,513,000
Using market prices with yield reduction of 20% and cost increase of 20%	27%	1.53	US $ 7,113,000

9. Income Effects on Beneficiaries

The ultimate beneficiary of the project will be the small farmer organized into Peasant Associations, each comprising 400 farm families, on the average. The positive income (see Part III, Section B, Financial Analyses and Plan) effects on these beneficiaries will include: (a) enjoyment of a higher quality of life; (b) entrance into the cash economy from a subsistence level; (c) an income well above the average for small farmers in Ethiopia; and (d) participation in social and political decision making at the basic, or "grass roots" level of Ethiopian Government.

PART IV - IMPLEMENTATION PLANNING

A. Administrative Arrangements

1. GOE

The Land Settlement Authority (LSA) will be the GOE agency responsible for implementing the project. LSA was established in February 1976 to administer the GOE settlement and rural development program, a part of the national rural development program which is the government's highest development priority. It is headed by a General Manager and acts under the direction of a Board of Directors consisting of the Ministers of Lands and Settlement (Chairman), Agriculture and Forestry, Interior, Labor and Social Affairs, the Commissioners of Planning and Relief and Rehabilitation, and the General Manager of the LSA.

The LSA will name a full-time "on-site" Project Director for the project, a condition to the signing of the Loan Agreement (see Section D.3 below). Under the direction of the LSA General Manager, he will be the USAID's principal contact and will be responsible for coordinating GOE inputs into the various activities of the project. He will be familiar with the AID project documents, requirements therein, and will provide the USAID with periodic reports, etc., that will be required, and will assist in preparing the documents satisfying conditions precedent to disbursement (see Sections B and D).

The LSA staff is growing, currently numbering 35, and has already worked on programs settling about 5,000 people. Its staff is expected to expand to over 200 during the next year, reflecting the high priority being given to improving the life of the rural poor and ability to administer this program. Such priority is also reflected in rising numbers of Peasant Associations being developed and the fact that agricultural production continues strong despite many political disturbances brought on by the revolution during the past two years.

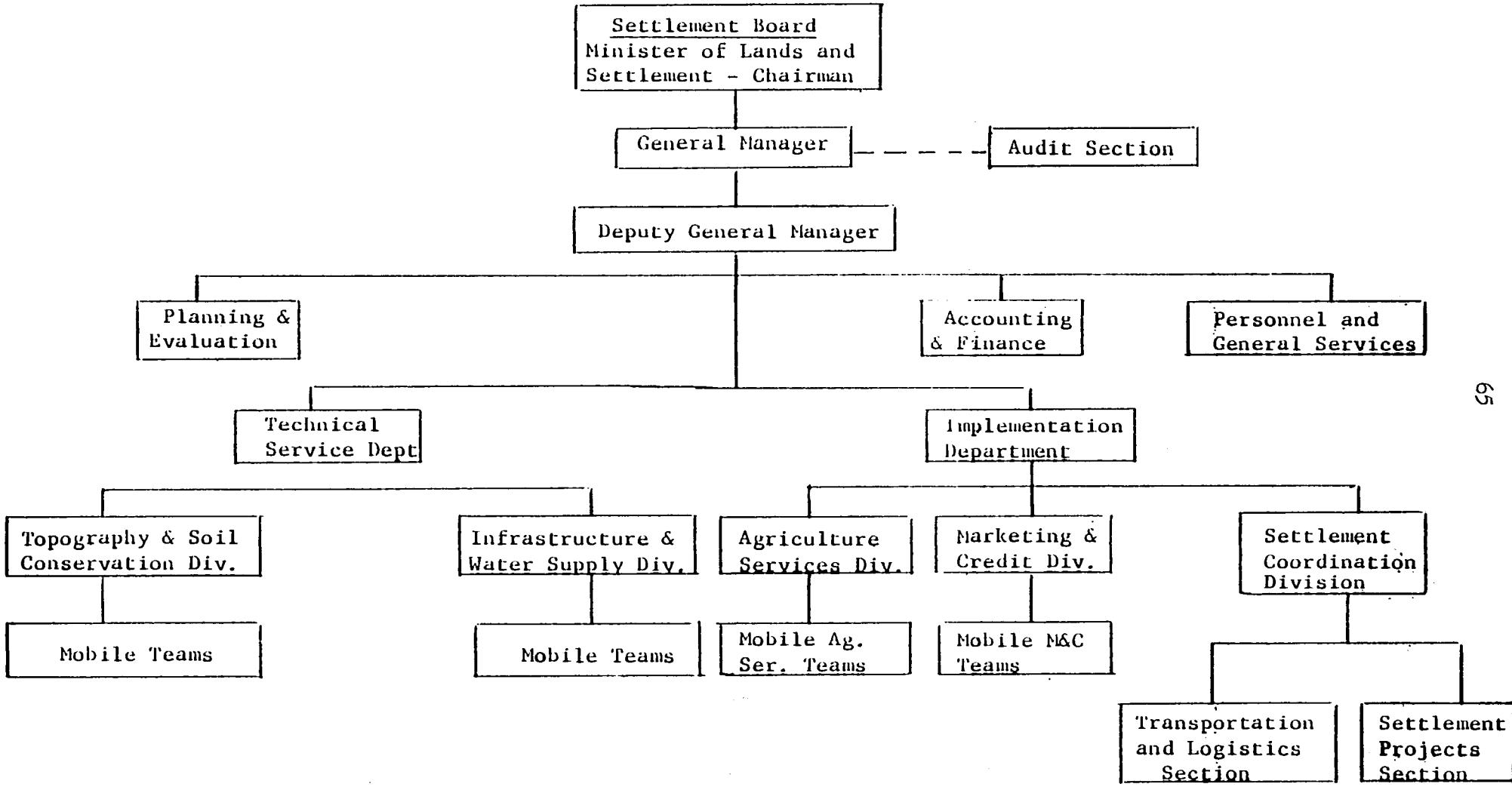
The GOE will be faced with manpower shortages in implementing its settlement plans. The USAID, however, will be assured by the GOE that sufficient personnel will be made available to the project to insure its success. GOE project personnel are listed in Annex J.

The LSA staff will also receive technical support and advice from the five U.S. experts who will be made available under the grant (see Part III. A. 3). This will give the LSA further expertise in specific fields, thereby giving further assurance that project objectives can be reached over the proposed four-year period.

The LSA organization chart is presented on the following page.

ORGANIZATION CHART

NATIONAL LAND SETTLEMENT AUTHORITY



2. AID

The USAID will have primary responsibility for AID's role in implementing and monitoring the project. This responsibility will be delegated to the USAID's Food and Agricultural Division. The division will maintain a close relationship with the LSA Project Director in all matters relating to this project.

REDSO will continue to provide capital development, engineering and legal assistance which will be required to prepare implementation documents, to monitor physical construction and to insure compliance with the program agreements.

B. Implementation

1. Schedule of Major Events

Annex E is the Project Performance Tracking Network, an execution schedule, for the project showing in graphic form the major actions to be taken, with their timing. The plan follows:

1976

June: Project Paper submitted to AID/W.

July: Loan Authorized.

August: Project Agreement and PIO/T(s) issued covering grant-funded technical assistance.

Draft Loan Agreement submitted to GOE.

September: Loan Agreement signed; topographical survey and contour map preparation initiated; temporary project headquarters established; malaria control activities begun. Grant-funded technical assistance team on board.

October: Conditions precedent to initial disbursement satisfied; training of extension personnel underway; project equipment specifications prepared and orders placed; first year's settlers selected and start arriving at project site; labor recruited for road construction.

November: Road construction started; settlers' reception center completed; surveying and marking of Peasant Association farms and homesteads for first-year settlers begun.

December: Credit as required available to Peasant Associations.

1977

January: First year extension agents' training completed; tsetse fly clearing begun; design work on Kolosuri water supply system started.

March: Five Peasant Associations formed and settled; tractor plowing of Peasant Association lands initiated (equipment for first year plowing made available by borrower pending arrival of new project equipment); first health station established.

June: Project Farm established and staffed.

October: Marking of land plots for second-year settlers begun; construction of Kolosuri water system started; second-year extension agents selected and trained; construction of first grain storage facility completed.

1978

January:	Tsetse fly buffer zone cleared; six more Peasant Associations formed; first livestock health facility completed and staffed.
February:	Second-year settlers settled; tractor plowing of their lands begun.
March:	Second health station established.
July:	Kolosuri water system operating; five minimum formal schools established.
October:	Marking of land plots for third-year settlers begun; third-year extension agents selected, trained and in place; second grain storage unit constructed; police sub-station established.

1979

January:	Third-year settlers selected and settled; six final Peasant Associations formed; third health station established.
October:	Third grain storage facility completed.

1980

May:	Fourth and final grain storage unit completed; project roads completed.
June:	Second livestock health facility completed and staffed.
July:	Terminal date for issuing loan commitment documents.
September:	AID project completed, settling 6,800 farm families into 17 Peasant Associations farming 17,000 hectares of land (13,600 hectares in production cropping); per capita net income from farm production: approximately U.S. $202; malaria and tsetse fly control programs operating and effective; road network giving access to all-weather roads and markets; GOE providing public services throughout project area.
October:	Terminal date for loan disbursements (four years after meeting initial Conditions Precedent).

2. Disbursement Procedures

a. Loan

1) Foreign Exchange

The GOE will select a procurement agent (probably the Afro-American Purchasing Center) to purchase the goods identified under the foreign exchange component of the loan. If the procurement agent is AAPC, disbursements will be made under the Direct Letter of Commitment method as it is now being used with AAPC. Otherwise, the standard Letter of Commitment method will be utilized.

2) Local Costs

The Ethiopian Government will name a single government agency (presumably the Land Settlement Authority) which will in turn establish an Upper Didesa Project Account in an Ethiopian bank.

The Upper Didesa Project Director will submit a letter of request to the USAID Mission for an initial advance of funds to be deposited by AID into the Project Account. The initial advance will be for an amount mutually agreed to by AID and the Ethiopian Government in an exchange of letters subsequent to signing of the loan.

The Project Director will submit requests for replenishment to AID on a quarterly basis or at such intervals as funds are required. The format will be as attached to Implementation Letter No. 1.

b. Grant

1) Contract Services

The contractor will be reimbursed directly by the USAID/Ethiopia Mission upon submission of the appropriate vouchers.

2) Participant Training

This component will be handled through normal procedures.

3) Commodities

A small element of support commodities for the contractor (to be included in the contract) and the first-year requirements of farm machinery, maintenance tools, vehicles and bicycles for the project will be procured under normal PIO/C procedures. All other commodities for the project are to be procured under the AID loan.

4) Other Costs

These minor expenditures will be reimbursed to the named agency of the Ethiopian Government as required, upon submission of the proper vouchers.

3. Procurement Procedures

Goods and services procured under the AID Loan shall have both their source and origin in countries included in Code 941 of the AID Geographic Code Book or in Ethiopia and procurement will be made pursuant to procedures contained in AID Handbook 11. Procurement under the AID Grant will be restricted to the United States. For a description of the items to be procured and their costs refer to Part III A and Annex B, Exhibit 1.

The LSA, being a new organization, has no prior experience in dealing with AID procurement procedures with respect to U.S. materials and equipment. Accordingly, the GOE is expected to use the services of the Afro-American Purchasing Center to procure the loan- and grant-funded foreign exchange needs of the program.

4. Reports

The GOE will submit the following reports which will be required under the Loan:

a. An annual audit report of program expenditures.

b. Quarterly progress reports.

c. Quarterly shipping reports.

d. Final report on program completion.

e. Other reports that may be required by AID.

C. Evaluation Plan

Project Management Information System

Sound rural development project planning demands investment in an information system to provide management with accurate and timely data on project activities and their effects on project beneficiaries. The Management Information System (MIS) is of particular importance in this project because of its function as a "test bed" for GOE resettlement operations with concommitant implications for national development policy.

The MIS for this project is conceived as an integrated mechanism for monitoring project activity, diagnosing operational problems, evaluating results of project activity and carrying out policy-oriented studies to incorporate project experience in identification, design implementation and evaluation of other GOE land settlement and rural development operations.

The MIS for the project will operate under the supervision of the General Manager of the LSA. Its activities will be coordinated with the Planning and Evaluation Unit in the LSA, which will provide technical assistance and policy direction to assure conformity of project MIS activity with broader requirements for the information of the Ministry of Lands and Settlement.

MIS design, including specification of data to be gathered, techniques of data collection, and the nature of analyses and reports to be developed, will be initiated immediately after authorization under the project by GOE and AID. Operations of the MIS will be funded as a regular operating cost of the Settlement Authority. AID will provide consultant services through its Indefinite Quantity Contract arrangements to assist in establishing the MIS program.

Functions of the MIS are briefly outlined below:

Project monitoring involves the gathering and presentation of basic data on project inputs and outputs, related financial and physical accounting and the activities of project participants. Of particular concern in this connection is the rapid and accurate reporting of project participant response in cases where new behaviors are required.

The project monitoring process identifies problems as detected in variations from expected behavior or performance. Diagnosing and solving problems will require specialized information gathering and analysis. A strong capability to diagnose problems is probably critical in this project to insure success. A key to dealing with resettlement projects, in the view of USAID/Ethiopia, is finding and solving problems before they grow so severe as to induce desertion by new settlers. Hence, the emphasis on the MIS to identify and solve problems early.

The third MIS function is evaluation, the systematic assessment of the impact of the project on the target group and the consistency of that impact with the expectations of interested agencies. In this connection the incidence of benefits and burdens caused by the project must be measured, and effects of the project, whether or not intended, must be identified and determined.

The evaluation effort is of particular importance for the GOE in determining the path of its land settlement strategy and in generating credible data as a basis for seeking international financing for future settlement projects.

The fourth MIS function will be the performance of special studies not necessarily limited to the scope of this project, but in conjunction with the Planning and Evaluation Unit. Such studies would relate to policy development or project development to which the experience of this project would be related. The objective of identifying this activity as a separate function is to assure clarity of the intention that the ongoing experience of this project be available for use by the GOE in developing other related activities. Thus, the connection between the Planning and Evaluation Unit and the project MIS Unit should be close and continuing.

D. Conditions, Covenants and Negotiating Status

There is no need for any special Conditions Precedent to initial disbursement. The implementation schedule and the GOE financial contribution have already been worked out with the GOE and will be included in the Description of the Project, an annex to the Loan Agreement (see Annex I).

In addition to the standard conditions and covenants associated with AID lending, the Loan Agreement will include the following:

1. Conditions Precedent to Subsequent Disbursements

a. Prior to the financing of the Project Loan Fund, Borrower shall submit copies of the operating policies, loan procedures and standards to be used for this activity of the project.

b. Prior to the financing of the Ambelta River bridge (Roads and Drainage), Borrower shall submit plans and specifications, bid documents and construction contracts.

2. Covenants

Except as AID may otherwise agree in writing, the Borrower shall covenant:

a. That the GOE will submit to AID an annual evaluation report of the project.

3. Negotiating Status

The USAID will not want to execute the Loan Agreement until the GOE has formally named a full-time Project Director (see Section A.1. above).

Aside from this point, the USAID will encourage prompt signing of the Loan Agreement in order to meet project activities scheduled for the second half of CY 1976.

UPPER DIDESA DEVELOPMENT PROJECT

TABLE OF CONTENTS

ANNEXES

17 December 1975
FM SECSTATE WASHDC
TO AMEMBASSY ADDIS ABABA
STATE 296789

SUBJECT: ECPR of Upper Didesa Development PRP

NAIROBI FOR REDSO

SUMMARY: AA/AFR has concurred in ECPR recommendation following December 1 review of subject PRP that it be accepted as basis for continuing design but that Mission/REDSO submit interim document as outlined below before decision made whether to proceed to PP.

2. As stated in introductory statement to subject PRP, ECPR recognized PRP lacked specifics, USAID analysis TAMS draft study, and final analysis to be provided by TAMS Phase II Feasibility Study which not completed at time PRP submitted. ECPR accepted viewpoint, however, PRP identified critical issues and set forth sufficient detail to serve as basis for continuing design. Nevertheless, ECPR requires Mission/REDSO submit interim document which addresses field reaction to final TAMS report/recommendations, Mission/REDSO definition conceptual framework for projects, as well as response to questions raised in ECPR meeting prior to proceeding with PP finalization and EPMG negotiation.

3. On question of TAMS report, AID/W would like to receive Mission/REDSO and GOE reactions to evaluation of report and how these alter/affect strategy for dealing with issues unresolved in PRP (such as project scope, financing, timing, benefits, etc.). In brief, ECPR requests Mission submit summary its analysis TAMS report and indication basic position it will take in discussions of report with EPMG. In this regard, would expect that activity be scaled down to meet minimum needs of settlers in view of scarce human and financial resource availability to cover rural needs and to develop replicable settlement model.

4. Specifically, interim document should carefully analyze basic question whether proposed project is most appropriate use of resources in view (a) poor history of development agencies in resettlement activities, (b) relative scarcity of both A.I.D. and GOE development funds and human resources for high costs per beneficiary activities which appear to lack significant replicability and (c) need to provide as much assistance as possible to newly formed Peasant Associations so that production does not suffer during transitional period in rural transformation, ECPR was seriously concerned with apparent lack of replicability, high cost per settler and high ratio of trained personnel and administrative capability required for implementation. Analysis this regard should include consideration whether other appropriate development opportunities exist which would allow more effective use of A.I.D. resources having impact on larger numbers of people, as well as GOE priority/commitment to project not just in context this project itself but in context overall development plans.

5. Interim document should also address what mechanism/means will be employed to encourage and provide for local participation in project planning, implementation and evaluation. Important that views and desires of settlers who will be affected by project be taken into account prior to actual resettlement as well as during on-going implementation, planning and evaluation of program.

6. ECPR also raised several technical issues/concerns, paramount among which were:

A) Special significance and importance environmental impact and social soundness statements will assume for project of this nature;

B) The woman resources problem. (This endeavor calls for a high ratio of trained personnel to settlers. In a country where trained (wo)manpower is scarce, question of their maximum utilization must be addressed. Might not more efficient use be made of (wo)manpower in projects affecting a larger percentage of the population?);

C) Need to address those agronomic factors which will most critically affect the economic base of the system (e.g., what research has been undertaken in this area and is it directly applicable to the needs of settlers? What farming systems are most applicable to the area? etc.);

D) Occurrence and proposed control of diseases and parasites affecting man and animals which may hamper project implementation/success;

E) Specific means to be used to select settlers and to control numbers being settled;

F) Plans for design and supervision of road construction and drainage;

G) Responsibility and capability for maintenance of road and drainage systems;

H) Need for and locus of town planning mechanism for proposed settlement of this size; and

I) Size and makeup of GOE contribution for public services to be provided settlement area.

7. Subsequent to ECPR meeting, question has been raised whether TAMS would have undue competitive advantage if it were to bid on project which TAMS itself has developed. Suggest REDSO investigate this problem and advise. Does current TAMS contract contain provision barring contractor from bidding on subsequent contracts with respect to project. If not, need analysis the extent to which TAMS preparation of present report would give it advantage over other potential bidders. Analysis should comment on advantages gained

by having relationship with GOE Ministry selecting future contractors, knowledge of terrain not disclosed in report and other similar factors.

8. It should also be noted that since life of project (i.e., period from signing agreement in FY 1976 to beyond 1980 completion date for delivery of services under the project) more than 5 year this proposal will have to go to DA/AID for final approval (see Handbook 3, Attachment 3-C).

9. PPC/DPRE is attempting locate qualified person to assist Mission in consideration issues raised herein. Believe, however, latest such response should be received in AID/W in order permit FY 76 authorization schedule be met would be end January 1976. Mission should also be preparing CP draft project sheet per State 277061. INGERSOLL

ENGINEERING COST ESTIMATES

I. Mapping and Surveying	FX	U.S. $ (000) Local Cost
A. Ground Surveys		
4 survey parties with four technicians per party. Salaries and per diem for a six month period.		23.0
B. Field Costs		
Wages for 20 unskilled laborers, field and camp operation costs for six month period.		18.0
C. Map preparation, reproductions and office operation.		11.0
D. Boundary marking and surveys		
1. Salary costs and per diem		53.0
2. Labor costs (unskilled) transportation and installing permanent momuments for a six month period		39.0
ESTIMATED TOTAL COSTS		$144.0 1/

II. Roads and Drainage 2/	(US$000) Local Cost		
A. Equipment	Upgrading	New Roads	Total
1. Equipment rental (1 grader, 1 dozer, 1 dump truck and 1 pick-up) based on Ethiopian Roads Auth. established rental rates.	120.0	51.0	171.

1/ Cost estimates based on actual field costs of similar work performed at project site (1975-76) by consultant during Phase II feasibility study.

2/ Estimated costs include upgrading to all-weather surface 50 km. of existing road and new construction of 35 km. spur roads.

	FX	(US$000) Local Cost		
		Upgrading	New Roads	Total
2. Materials, hand tools, wheel barrows, cement, etc.		25.0	26.0	51.0
B. Labor				
1. Supervisory personnel		33.0	33.0	66.0
2. Skilled personnel (equipment operators)		35.0	21.0	56.0
3. Unskilled laborers		100.0	112.0	212.0
C. Escalation				
1. Equipment Rental rates (4 year period) (9%)		11.0	4.0	15.0
2. Wage increases (4 year period) (15%)		25.0	25.0	50.0
D. Bridge				
1. 2-span reinforced concret structure, total length 20 meters (competitive bid, local contractor)		-	120.0 3/	120.0
ESTIMATED TOTAL COSTS		$349.0	$392.0	$741.0

III. Water Supply 4/	FX	(US$000) Local Cost
A. Equipment		
1. Three centrifugal water pump, 5 hps capacity at 120 foot head	2.8	
Spares	0.5	
2. Three diesel engines, 5 hps	3.3	
Spares	0.7	

3/ Cost projected to contract award for October, 1977.

4/ The cost breakdown represents a preliminary design and costing prepared by the Consultant (July 1976) for the project. The site location is firm; however, detailed design and cost estimate will be prepared during the first phase of the project implementation. Construction to be carried out by force account methods using project related personnel.

	FX	Local Cost US $ (000)
3. Pipe and fittings for 700 meters of supply line, 3 in. dia. pipe @ $5.40 per meter, with required fittings, copulings, line anchors.		5.3
4. Tools		1.0
B. Buildings		
5. Reservoir, 300 cu. meter capacity with valves and fittings		32.6
6. Settling basin, 600m^3 capacity with gated drain		1.5
7. Fencing, 120 meters @ $3.50		0.4
8. 2 staff houses @ $1000		2.0
9. Engine and Pump house		1.0
C. Engineering		
17. Design and supervision (local employees)		6.0

		FX	US $ (000) Local Cost	
D.	Escalation, 15%	1.2	7.5	
	SUB TOTAL	$ 9.0	$ 57.3	
E.	Contingency (10% +)	1.0	5.7	
	ESTIMATED TOTAL COSTS	$ 10.0	$ 63.0	
IV.	Tsetse Fly Control			
A.	Buffer zone clearing 11,500 hectares		127.0	
B.	Tributary clearing 200 hectares		8.0	
C.	Didessa River strips clearing 100 hectares		25.0	5/
D.	Project farm clearing 1000 hectares		11.0	
	ESTIMATED TOTAL COSTS		171.0	6/
	(Average cost of clearing hectare - $13.40)			
V.	Extension Service			
A.	Facilities and Equipment			
	1. Two-4WD vehicles (cab type) (CIF Addis Ababa)	15.0		
	Spare parts 20%	3.0		
	2. 74 bicycles (CIF Addis Ababa)	7.4		

5/ Extremely heavy clearing required in the river area.

6/ Cost estimated based on average of 15 person/days required to clear one hectare in Ethiopia. This production rate is from recent observed rates of clearing in Ethiopia for different terrain conditions and densities of growth. Costs include hand tool investments.

	FX	US $ (000) Local Cost
3. 6 staff houses (without furniture) 5 X 6 meters, local material and construction, standards @ est. cost of US$1000 per unit ($34.00 m^2)		6.0
4. one office, with basic furniture, 3 room, total 4 X 10 meters size, local material construction, est. cost of $2500 ($62.50 m^2)		2.5
5. One storage shed, one room, 4 X 4 meters, local materials construction, est. cost $500 ($31.25 m^2)		0.5
	25.4	9.0
6. Escalation, vehicles bicycles, 6 months at 1% per month - 6.2%	1.6	
	$ 27.0	
7. Building cost escalation (3 year period) 15% est. imported items, roofing, glass, etc.		0.5
		$ 9.5

VI. Project Farm

A. Equipment

1. Two rubber-tired tractors 3 pt. hitch, 79 BHP @ $12,000 (CIF Addis Ababa)	24.0
Spares 20%	4.8
2. Two 4 gang disc plows @ $1750	3.5
Spares	0.7

	FX	US $ (000) Local Cost
3. Two disc harrows	5.4	
Spares	1.0	
4. Two planters, 4 row	7.3	
Spares	1.5	
5. One ridger, 4 row	2.8	
Spares	.6	
6. Two trailers, rubber tired tilt, 5 ton	6.2	
Spares	1.2	
7. One 4WD pickup, ½ ton	7.4	
Spares	1.5	
8. 4 backpack sprayer, 5 gal. manual operated	.3	
9. Tool maintenance for equipment (lot)	10.0	
SUB TOTAL	$ 78.2	
10. Escalation, 24 mos. period @ 0.4% per month	7.8	
11. Barbed wire, 2 pt. galvanized, 20,000 meters @ .75 per meter (includes staples, tools, stretchers)		15.0
12. Farm roads, 10 km. (labor intensives, construction)		5.0
13. Three staff houses (without furniture) size 5 X 6 meters, local material and construction standards @ est. cost of US$1000 per unit ($34/m^2)		3.0

	FX	US $ (000) Local Cost
14. One office, with basic furniture, 3 room total, size 4 X 10 meters, local material and construction standards. Est. Cost of $2500 ($62.50 per m^2)		2.5
15. One storage shed, one room, 4 X 4 meters, local materials and construction standards. Est. Cost $500 ($31.25 per m^2)		.5
16. One maintenance shop machinery shed 8 X 20 meters, local materials and construction standards. Est. cost $15,000 ($93.75 per m^2)		15.0
	86.0	41.0

VII. Storage and Marketing

A. Equipment

1. Sixteen platform scales, 0-150 kg., manual operated, min. division 1 kg. reading		4.0

B. Facilities, Buildings

1. Three staff houses without furniture, size 5 X 6 meters, local material and construction standards, Est. Cost $1000 per unit ($34.00 per m^2)		3.0
2. Eight grain storage warehouses, 1000 ton capacity, 10 X 30 meters, @ $22,000 per unit ($73.33 m^2), masonry floor, wood truss, masonry walls.		176.0

	FX	US $ (000) Local Cost
3. Miscellaneous equipment, sprays, fumigator, etc.		3.0
SUB TOTAL		$ 186.0
C. Escalation, estimated 4 yr. period (FY 78) equip. 15% (FY 77-79) buildings - 15%		28.0
ESTIMATED TOTAL COSTS		$ 214.0

VIII. Project Support

A. Buildings

1. One office building with office furniture and equipment. 6 rooms total, 3 X 20 meters, local materials and construction standards est. cost $10,000 ea. ($62.50 per m^2)		15.0
2. One storage building 3 X 10 meters, local materials and construction standards, est. cost $5,000 ea. ($62.50 per m^2)		5.0
3. Ten staff houses without furniture 5 X 6 meters, local materials and construction standards, est. cost $1000 ea. ($34.00 per m^2)		10.0
4. One house (Director's) without furniture, local materials and construction standards, 8 X 10 meters, est. cost $10,000 ea. ($125 per m^2)		10.0

	FX	US $ (000) Local Cost
5. One staff house complete with furnishings for TA team. Local materials and construction standards.		15.0
B. Equipment		
1. Four 4 WD vehicles (Cab type (CIF Addis)	30.0	
Spares	6.0	
2. One 15 KW Diesel Electric generator	6.0	
Spares	1.2	
C. Escalation Costs Estimated for 2 year period		
Building @ 7.5%		4.1
Equipment @ 7.5%	2.7	
ESTIMATED TOTAL COSTS	38.7	59.1
IX. Machinery Pool		
A. Equipment		
1. Eight rubber tired tractors 3 pt hitch, 79 BHP @ $12,000 ea. CIF Addis	96.0	
Spares 20%	19.2	
2. Eight 4 gang plows @ $1750 ea CIF	14.0	
Spares	2.8	
3. Eight disc harrows @ $3700 ea CIF	21.6	
Spares	4.0	
4. Eight trailers rubber tired, tilt, 5 ton @ $3600 ea CIF	28.0	
Spares	4.8	
SUB-TOTAL	191.2	

	FX	US $ (000) Local Cost
5. Escalation 12 months @ 10% per month = 12%	22.8	
ESTIMATED TOTAL COST	$ 214.0	

X. LIVESTOCK HEALTH PROGRAM

A. Equipment		
1. One 4 WD pickup, ½ ton	7.4	
Spares	1.5	
2. Livestock scale, capacity from 0 - 2000 lbs.	2.0	
3. Laboratory equipment (Scientific & testing)	3.0	
4. Five bicycles	.5	
B. Fencing		
1. Barbed wire, 2 pt. galvanized, 6600 meters @ .75 per meter includes staples, etc.		5.0
C. Two Dip/crushes		6.0
D. Two cattle sun shades local materials (pole and thatch construction)		3.0
E. Buildings		
1. Five staff houses without furniture, 5 X 6 meters, local material and construction standards, est. cost $1000 per unit ($34 per m^2)		5.0

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	FX	US $ (000) Local Cost
2. One office/laboratory with basic furniture, 3 rooms total 4 X 10 meters, local materials and construction standards, est. cost @ $2500 ea. ($62.50 per m^2)		2.5
F. Two pole and thatch sheds @ %500 ea.		1.0
G. Escalation		
1. Equipment 15%	2.2	
2. Buildings 15%		2.2
ESTIMATED TOTAL COST	$ 16.6	$ 24.7

XI. PROJECT LOAN FUND

A. Buildings	
1. One office with basic furniture, 3 room total, 4 X 10 meters, local materials and construction standards, est. cost $2500 ($62.50 per m^2)	2.5
2. Three staff houses without furniture, 5 X 6 meters ea. local materials and construction standards, est cost of $1000 ea. ($34.00 per m^2)	3.0
ESTIMATED TOTAL COST	$ 5.5

XII. COMMODITIES, GRANT FUNDED
(Support of TA Team)

A. Equipment	
1. Two 4 WD vehicles @ $7500	15.0

	FX	US $ (000) Local Cost
2. One sedan, 5 passenger	7.0	
3. Camping equipment (Lot) 3 sets - tents, beds, generator, etc. @ $800	2.4	
4. Radio equipment, base set and six walki-talki	1.5	
5. Scientific equipment, i.e., hand calculators, drafting equipment, etc.	1.5	
SUB TOTAL	$ 27.4	
6. Spares (life of project) vehicles, etc.	13.5	
ESTIMATED TOTAL COST	$ 41.0	

SUMMARY COST SHEET

I. Summary Costs	FX	Local Cost
A. Components.		
1. Mapping & Surveying	-0-	144.0
2. Roads	-0-	741.0
3. Water Supply	10.0	63.0
4. Tsetse Fly Control	-0-	171.0
5. Extension Service	27.0	9.5
6. Project Farm	86.0	41.0
7. Storage & Marketing	-	214.0
8. Project Support	46.4	59.1
9. Machinery Pool	214.0	-0-
10. Livestock Health Program	16.6	24.7
11. Project Loan Fund	-0-	5.5
12. Commodities Grant Fund	41.0	-0-
Sub Total	$441.0 1/	$1,472.3 2/
B. Procurement Fees (AAPC Service) for Commodities 7% fee	32.7	
C. Transportation, Commodities CIF Addis Ababa to Project Site		50.2
Estimated Total Costs	$472.0	$1,523.0

1/ Estimated costs include an escalation factor and spare parts as applicable

2/ Estimated costs include an escalation factor where applicable.

BACKGROUND AND AGRICULTURAL PLAN FOR THE UPPER DIDESA VALLEY PROJECT WITH MAPS

Location

The Upper Didesa Valley study area, comprising over 54,000 hectares, is bounded on the southeast (upstream limit) by the confluence of the Didesa and Wama Rivers and on the northwest (downstream limit) by the Bedele-Arjo-Nekemte track (National Route 39) which crosses the Didesa River via a well-constructed bridge.

That portion of the study area southwest of the Didesa River was selected as the initial Project Area for settlement and agricultural development; approximately 34,300 hectares of land are included in this area which is wholly within Buna Bedele Awraja of the Illubabor Administrative Region.

The remainder of the study area, lying to the northeast of the Didesa River and comprising some 20,000 hectares, was analyzed as to its potential for livestock development; however, in view of the relatively low internal financial rate of return (less than ten percent) it was concluded that a future second stage settlement and agricultural development project would be a preferred use of capital.

The general location of the study area is shown on Figure 1, and both the study area and the Project Area are shown on Figure 2.

The Project region is presently connected with the rest of the country by two all-weather primary roads: (1) Route No. 5 extending from Gimbi to Addis Ababa; and (2) Route No. 7 from Addis Ababa, via Jima, to Bonga connecting with the Jima-Bedele-Metu Road (Route No. 43). The Bedele-Arjo-Nekemte feeder road has recently been funded for construction under the Sixth Highway Program. This road, which will cross the Didesa River on the existing bridge at the northwest limit of the Project Area will provide direct all-weather access to regional markets and Addis Ababa by mid-1979. Locations of above routes may be seen on Figure 1.

Climate and Water Resources

The Project Area lies within the highest annual rainfall region in Ethiopia. As no climatological station has been operated within the Project Area, the nearby Dabana Mission Station (formerly called Bedele) is of importance to Project studies because of its length of precipitation record and the similarity of that portion of its record in common with the limited data from Chara, a village near the Project Area at about 1,500 meters elevation.

The mean annual precipitation at Dabana (Bedele) is nearly 2,000 millimeters distributed as follows:

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
31	40	59	77	251	278	327	328	349	160	64	15	1979

The mean diurnal range in temperature in the Didesa Valley is about 21°C. Mean recorded temperatures (in °C) at the Didesa Valley Station are as follow:

Month	Maximum	Minimum
January	32.9	6.3
February	33.4	7.6
March	34.5	11.9
April	34.1	12.1
May	31.2	10.8
June	28.7	11.5
July	27.3	11.5
August	27.1	11.1
September	28.7	11.2
October	30.3	10.1
November	29.4	8.2
December	30.3	6.1
Year	30.7	9.8
Mean	20.3	

The area covered by hydrologic studies includes the Didesa River basin upstream from the gaging station at the existing bridge, known as "the Didesa River near Arjo", with a drainage area of approximately 9,500 square kilometers. Mean annual runoff for the 14-year period of record is 4,686 million cubic meters, an amount equivalent to 148 cubic meters per second average discharge or 494 millimeters yield from the drainage basin. Mean annual yield from the basin is about 25 percent of mean annual precipitation. Runoff is low during February-April; increases in irregular patterns during May-July; usually is greatest in August or September; and recedes, at first irregularly in October, then more regularly from November to January. Mean monthly and annual flows (in cubic meters per second) are as follows:

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
19	12	9	13	41	105	308	465	418	265	78	35	148

GV

Geology and Geomorphology

The Project Area overlies and is derived from tertiary Trappean lava composed largely of basalts and basaltic tuffs. It is a part of a lengthy valley formed by erosive action of the Didesa River and its numerous tributaries. The surrounding highland plateau elevations average 2,000 meters or more while the valley floor elevations range from 500 to 700 meters lower. The valley lands form a complicated system of low hills which border and interrupt, savannah plains sloping gently towards the river. Numerous Didesa River tributaries, some with near perennial flows, frequently dissect the plains.

Soils and Ecology

Parent material and climate do not vary within the Project Area; consequently, soil formation and differentiation has primarily been influenced by three environmental factors: slope, aspect, and drainage. On the hills, red and brown inceptisols have developed, covering 52.2 percent of the area. On the slightly sloping plains and in the basins, dark grey to black vertisols have formed on 27.5 percent of the area. Adjacent to tributary streams and the Didesa River, alluviums have been deposited; and at the foot of some hills, especially those close to the river, colluvial materials are found. Alluvial and colluvial soils together comprise 16.6 percent of the Project Area, and scattered steep hills account for the remaining 3.7 percent.

As shown on Figure 3, the soils have been grouped into seven soil series which primarily differ in color of top and sub-soil, texture, and cracking characteristics.

Throughout the Project Area, the natural vegetation is closely related to soil types and other environmental factors. In general, the red and brown inceptisol series are characterized by the presence of Combretum glaucescens trees which dominate and by Ficus exasperata when C. glaucescens is absent. Typically, grass species include Hyparrhenia cymbaria, Imperata cylindrica and Panicum sp.

The expanding and deeply cracking black and dark grey vertisols are typically without trees or shrubs and primarily form grassland and sedge meadows. Hyparrhenia cymbaria, I. cylindrica and Panicum sp. grasses predominate. Occasionally, woody species occur, including Rhoicissus erythrodes and Tephrosia sp.

Land Use and Classification

Field and aerial observations and air photo interpretation indic[illegible]he present land use in the Project Area to be as foll[illegible]

	Hectares	Percent
Villages and related farm lands	600	1.5
Lands occasionally grazed	2,400	7.0
Unoccupied savannah plains and low hills	26,300	76.5
Riverine forest and water surface	3,700	11.0
Mountainous intrusions	1,300	4.0
Total	34,300	100.0

Present land use, however, is not a valid indicator of the soils capability to produce economic agricultural returns under sustained agriculture. The soils have been classified for land use capability under rainfed farming as follows: (Also, see Figure 4)

Capability (Subclass)	Area (in hectares) (Rounded)
IIe	6,200
IIIp	2,800
IIIe	13,800
IIId	6,300
IVd	300
Vf	3,600
Vs	1,300
	34,300

Present estimated yields, production and value of principal crops are summarized below. The market prices shown are those obtained at the traditional Chara market, which is isolated from regional and national market systems, and are not indicative of true value.

Crop	Total Area (ha)	Average Yield (qq/ha)	Total Production (qq)	Market Value (E$/qq)	Total Value (E$)
Maize	125	5.8	725	12	8,700
Sorghum	115	6.5	748	1313	9,700
Millet	105	6.3	662	13	8,600
Chick Peas	30	3.5	105	22	2,300
Teff	25	3.7	93	16	1,500
Noug	10	2.2	22	23	500
Berbere	10	3.0	30	22	700
Other	30	3.0	90	20	1,800
Total	450		2,475		33,800

Livestock Production - Due primarily to the prevalence of trypanosomiasis, livestock are generally scarce in the Project Area. Field surveys indicated a present livestock population of approximately 1,250 cattle, 500 sheep and goats, and less than 3,000 poultry. Pastures are undergrazed by the limited number of domestic and wild animals in the valley. Annual burning during the dry season allows for seasonal basal leaf growth on the typical bunch grasses, in particular the dominant Hyparrhenia spp.

Livestock disease has been one of the primary constraints to spontaneous settlement in the Upper Didesa Valley. The endemic and chronic diseases and parasites must be identified, treated and brought to control status before livestock can safely be bred or used to till the land.

Money received from occasional sales of cattle, butter and poultry provides the average farm family with its major source of cash income. The average farmer, with five head of mature cattle, has traditionally sold one immature animal at tax and rent paying time, usually at a depressed price. Milk and eggs are normally consumed as dietary supplements; however, surplus butter and poultry are marketed. The annual sales/barter value of these products is estimated as:

One heifer or young bull	E$40
Butter	8
Poultry	3
Total	E$51

Of the above total, the average farmer historically paid E$20 for taxes and rental, leaving E$31 for family needs.

Agricultural Credit

The institutional framework of agricultural credit is in an immature state of change. Land reform has now made it impossible to pledge land as loan collateral; credit and financial institutions have been nationalized; and policies are being restructured by the Provisional Military Government.

In the past, the major conflict with respect to agricultural credit in Ethiopia has been between development goals with credit evaluation based on ex-ante project return criteria and sound banking principles involving loan criteria based on the pledging of assets. A major objective in nationalizing all credit and financial institutions was to allow the Government to pursue development aims in accord with its revised policies. It is currently believed that this implies major reallocation of Government expenditure towards financing of development projects.

Institutionalized credit activity in the Project Area's marketing region appears to have been confined to: (1) AIDB involvement with five smallholder coffee producer cooperatives; (2) short-term working capital arrangements between commercial banks and traders; (3) limited credit provision from traders to smallholder grain producers; and (4) EPID Minimum Package Programs.

Markets and Prices

A comprehensive review of national and regional markets, marketing and prices is included in Chapter 8, Part I, of the TAMS report. The national picture is important in that Ethiopia's periodic food shortages, the distribution and planned relocation of population relative to available new cropland, and other development projects may have an impact on the markets for surplus commodities produced in the Project Area. The objective of the regional analysis was to determine the proportion of surplus Project production that could be marketed regionally.

Population growth rates, income rates, per capita cereal and pulse consumption data, and assumed income elasticities were projected through 1995 to obtain order-of-magnitude demands for selected cereals and pulses over the next two decades. Should present national average yields remain constant, an additional 2.6 million hectares of land planted to selected cereals and pulses would be required by 1995, considering population effects only. If income effects are also considered, about 3.3 million additional hectares would be needed.

A survey of 19 markets in the Project Area's region showed a net annual grain deficit in 1973 of some 16,000 tons, centered mainly in Jima, Agaro, Nekemte and Gimbi. At Gambela, Nejo and Gimbi, skyrocketing prices, seasonal food shortages, or famine were regular yearly occurrences. Population effects between 1975 and 1980 would increase annual regional consumption requirements by about 150,000 tons. By 1995, regional consumption requirements would be increased by about 85 percent over 1970 levels due to the effect of population alone.

The major crops proposed to be grown are maize, sorghum and chick peas. On the basis of market analyses, it was concluded that surplus production of these crops will be sold in Project region markets.

Planning market prices were based on the latest wholesale price range list for the Jima market region published by the Ethiopian Grain Board in its A New Pricing Policy for Farmers, Wholesalers, and Retailers. Farmgate prices were determined by subtracting transport costs and Project handling and storage charges therefrom. The resulting farmgate prices (in Ethiopian and equivalent United States dollars per quintal) used in Project financial analyses are as follows:

	E$/qq	US$/qq
Maize	17.50	8.52
Sorghum	27.00	13.15
Chick peas	27.50	13.39

Agricultural Development Plan

Recommended Land Use -

The Project Area comprises virtually unsettled and uncultivated land which offers opportunities to devise optimum sized farm models based on more advanced practices than presently used. The proposed land use for the future project, based on the land capability classification described above and on the decisions of the GOE during the aforementioned Interministerial Committee meetings, is as follows:

	Agricultural Land (Ha.)	Project Farm and Non-Agricultural Land (Ha.)
Farming - red/brown soils	17,000	-
Black Soils	8,000	-
Grazing and Forest	-	7,300
Major Settlements, Project Farm and Infrastructure	-	2,000
Totals	25,000	9,300

As discussed in Part III, the Project is to settle 6,300 peasant farmers in peasant association units of 400 families each (1,000 hectares) over a three-year period. Two hundred hectares would be for villages, rural center, home gardens, community grazing and rural centers. The remaining 800 hectares would comprise the cooperative production farming area.

The recommended land use for the Project Area, together with proposed cropping patterns, is discussed in Part III. The simplified cropping pattern selected for cooperative farming in each peasant association area is:

Maize - 400 hectares

Sorghum - 400 hectares

Chickpeas - 400 hectares interplanted with maturing maize

The following, presented in summary form for the selected peasant association model, are (1) yields, production and sales data; (2) required peasant association inputs.

a. Yields, Production and Sales Data

Production estimates for the peasant association model are summarized on Table 1. It is noted that yields are assumed to build up to full production over a period of three years in each peasant association.

TABLE 1

Land Use, Production and Sales Data Sheet
Model Peasant Association

	Model Year				
	1	2	3	4	5 on
Land Use (ha)					
Maize	200	400	400	400	400
Sorghum	200	400	400	400	400
Chick peas (1)	200	400	400	400	400
Other (2)	200	200	200	200	200
Total	600	1000	1000	1000	1000
Yields (quintals/ha)					
Maize	15	25	30	30	30
Sorghum	10	15	20	20	20
Chick peas	6	7	8	8	8
Production (tons)					
Maize	300	800	1100	1200	1200
Sorghum	200	500	700	800	800
Chick peas (3)		120	260	300	320
Home Consumption (tons)					
Maize	120	100	60	40	40
Sorghum	13	13	13	13	13
Chick peas (3)	-	26	26	26	26
Surplus Production (tons)					
Maize	180	700	1040	1160	1160
Sorghum	187	487	687	787	787
Chick peas (3)	-	94	234	274	294
Price (ES/ton)					
Maize	175	175	175	175	175
Sorghum	270	270	270	270	270
Chick peas	-	275	275	275	275
Sales (ES000)					
Maize	31.5	122.5	182.0	203.0	203.0
Sorghum	50.5	131.5	185.5	212.5	212.5
Chick peas (3)	-	25.9	64.4	75.4	80.9
Total Sales (ES000)	82.0	279.9	431.9	49.9	495.4

(1) Interplanted with maize prior to maize harvest.
(2) Villages, grazing areas, home gardens, etc.
(3) Sales in January.

b. Required Peasant Association Inputs

In arriving at peasant association budgets for the proposed project, the following steps were taken:

(1) Determination of basic unit cost for equipment and materials;

(2) determination of farm operating costs utilizing the basic data compiled in step (1); and

(3) compilation of investment expenditures.

(1) Operating Costs

The total operating costs for each model peasant association were arrived at by summing direct production costs, indirect costs, and interest on production loan (extended at one percent per month). Direct production costs include seedbed preparation (by Project custom machine services on 400 hectares in Peasant Association model Year One); seed; fertilizer; spray chemicals; bags; and input and output hauling. Indirect costs include animal health service provided by the Project and repair and maintenance of farm equipment.

Total operating costs for the model peasant association are summarized in Table 2.

(2) Investment Expenditures

The principal investment expenditures to be made by the farmers will be for housing and storage; oxen and cattle; implements; sprayers; and hand tools. The investment schedule is summarized in Table 3

TABLE 2

Operating Cost Summary
Model Peasant Association

	Model Year					
	1	2	3	4	5	6 on
Direct Production Costs						
Maize (E$/ha)	144.42	86.70	104.65	122.10	140.55	140.55
Total (E$000)	28.9	34.7	41.9	48.8	56.2	56.2
Sorghum (E$/ha)	130.30	72.58	90.53	90.53	90.53	90.53
Total (E$000)	26.1	29.0	36.2	36.2	36.2	36.2
Chick peas (E$/ha)	34.21	34.21	34.21	34.21	34.21	34.21
Total (E$000)	6.8	13.7	13.7	13.7	13.7	13.7
Bags & Hauling (E$000)	6.6	23.2	35.5	40.2	40.6	40.6
Total Direct Costs (E$000)	68.4	100.6	127.3	138.9	146.7	146.7
Indirect Costs (E$000)	2.0	5.4	8.3	11.5	13.0	14.0
Interest on Production Loan (E$000)	6.2	7.7	9.2	9.9	10.6	10.6
Total Operating Costs (E$000)	76.6	113.7	144.8	160.3	170.3	171.3

TABLE 3

Investment Schedule
Model Peasant Association

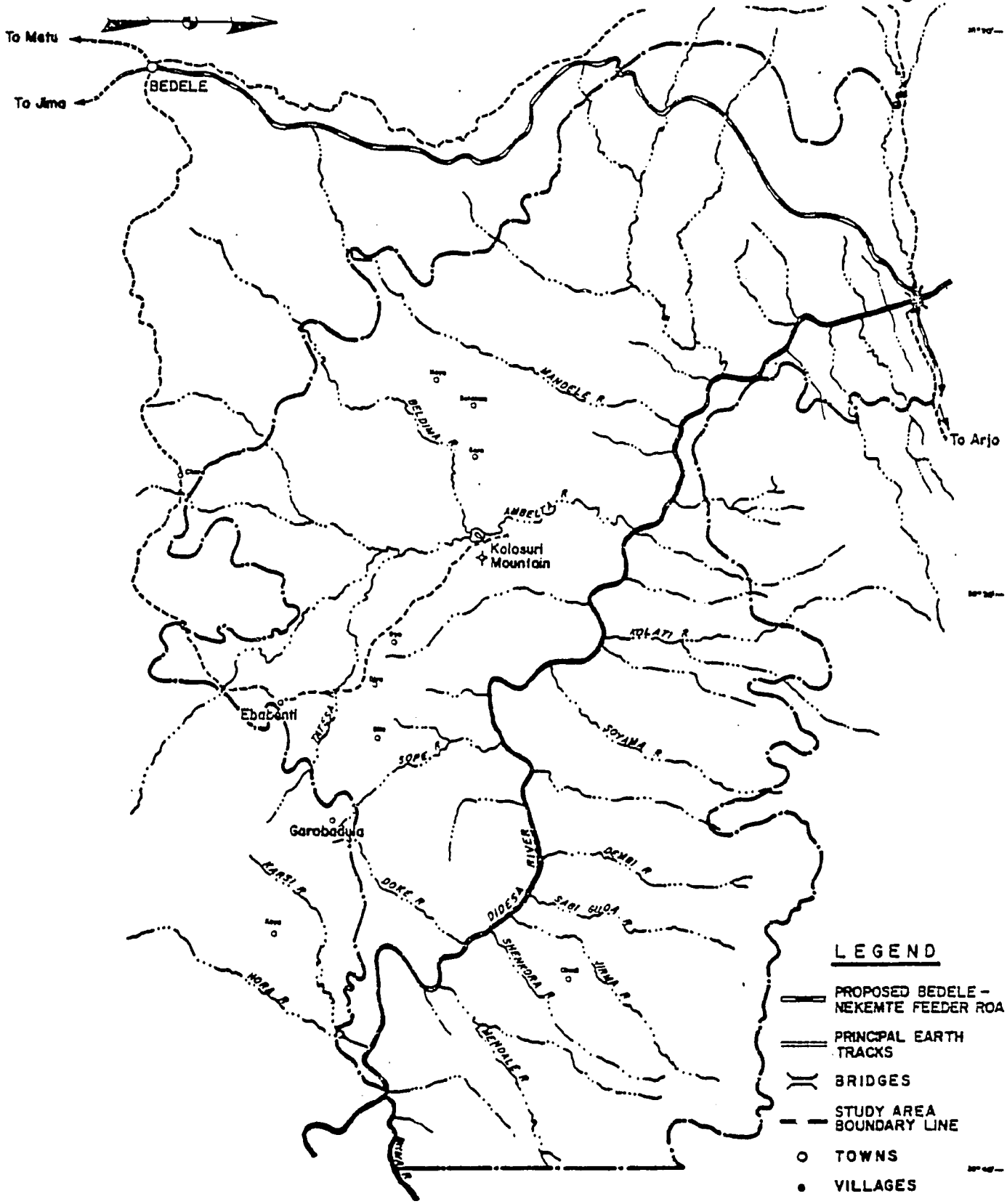
Item	Units	Unit Price (E$)	Outlay (E$000)	Life (Years)	Model Year 0	1	2	3
Tukuls	400	100	40.0	10	-	-	-	40.0
Storage	8	500	4.0	10	-	-	-	4.0
Oxen	135 pr	280	37.8	N/A(2)	-	-	37.8	-
Cattle	200	90	18.0	N/A(2)	-	-	-	18.0
Plows, Ropes & Yokes	135 sets	10	1.4	4	-	-	1.4	-
Back Pack Sprayers	40	125	5.0	4	-	5.0	-	-
Hand Tools	200 sets (1)	33	6.6	3	1.8	2.4	2.4	1.8
Totals (rounded E$000)					1.8	7.4	41.6	63.8

Item	Model Year 4	5	6	7	8	9	10
Tukuls	-	-	-	-	-	-	-
Storage	-	-	-	-	-	-	-
Oxen	-	-	-	-	-	-	-
Cattle	-	-	-	-	-	-	-
Plows, Ropes & Yokes	-	-	1.4	-	-	-	1.4
Back Pack Sprayers	-	5.0	-	-	-	5.0	-
Hand Tools	2.4	2.4	1.8	2.4	2.4	1.8	2.4
Totals (rounded E$000)	2.4	7.4	3.2	2.4	2.4	6.8	3.8

(1) 2,200 units at E$3.00 purchased over 26 months.
(2) Oxen and cattle would be replaced from Peasant Association herds.

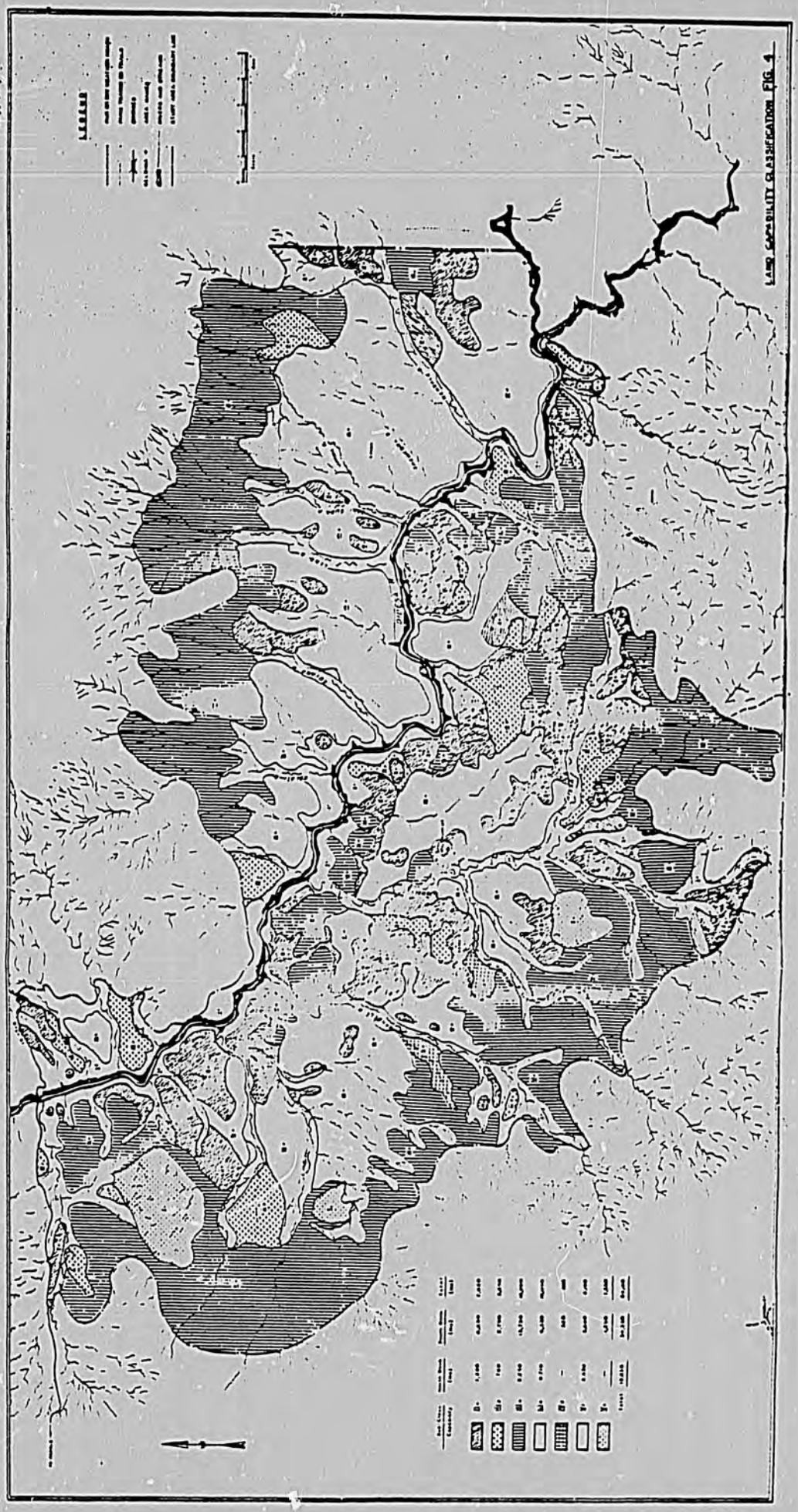
PROJECT LOCATION MAP FIG. I

ANNEX B
EXHIBIT
Page 13



STUDY AREA LOCATION FIG. 2

SOILS MAP FIG 3



RECOMMENDATIONS OF THE INTERMINISTERIAL COMMITTEE ON UPPER DIDESSA (SOUTH WESTERN REGIONAL DEVELOPMENT) PROJECT

February 24, 1976

Members of the Committee:

1.	Ato Wondwossen Messele, Chairman	PPD/MOAF
2.	Ato Mesfin Kinfu	LSA
3.	Ato Argaw Truneh	EHA
4.	Ato Bisrat Debebe	EPID
5.	Ato Mulugetta Taye	PCO
6.	Ato Ibrahim Y. Bule	PCO
7.	Ato Fekadu Wakjira	LSA
8.	Ato Atnachew Tiko	PPD/MOAF
9.	Mr. Robert L. Barr	TAMS
10.	Mr. Ronald J. Clark	LSA
11.	Mr. Ivo Juras	LSA
12.	Mr. J. H. Saunders	LAR
13.	Mr. J. Holmberg	EPID

An Interministerial Committee of the above composition to appraise the Upper Didessa (South-Western Rural Development) Project was set up on December 22, 1975. The Committee met on December 22, 24 and 26, 1975. The purpose of this Committee was to see whether the completed project document requires any change before it is implemented. For this reason a series of three meetings were conducted and a fourth one for drafting the final recommendation.

The discussion was based on an outline prepared by the consultants.

It included:

A. Resources - This part outlines in brief the project location, area of project, soils, climate and water resources, population in project area and present projection value;

B. Agricultural Development - Summary on recommended land use, farm size and land use; cropping patterns, yields, net farm income, proposed settlement schedule, and farmgate prices (planning);

C. Supporting Services - This part includes extension program, project farm, project machinery pool, livestock health program, credit and crop shortage;

D. Infrastructure - Summarizes roads, drainage system, water supply, tsetse fly control, surveys and mapping and public services;

E. Financial Analysis - Covers total estimated cost for 20 years, total estimated cost for five years investment and estimated government cash flow;

F. Economic Analysis - Covers internal economic rate of return, net present worth and benefit-cost ratio.

As can be seen from the above outline the project document was discussed exhaustively. After considering each outline in detail, the discussion centered around what the Committee considered major issues.

In discussing resources it was indicated to the Committee that the approach used in the study was to see the outcome by using the entire resources. But, due to the heavy cost of utilizing the black soil, there was a suggestion from the floor that this part of the project area should be differed if possible. It was also understood that a major reduction in the cost component was possible by differing the black soil.

Income derived from black soil is low and it was explained by the high cost of drainage in relation to red/brown soil.

Farm size and land use was discussed in detail. The project envisaged individual farm plot. But it was the general consensus of the Committee that the project should be based on cooperative farming system.

Cropping pattern on the red/brown soil was said to be very low in cash and protein component and a more diversified cropping pattern was suggested to be included. However, the committee agreed that this is a metter of programming in the implementation stage.

The need for a project farm was explained as a necessary testing and demonstration ground. Maize and sorghum improvement needs a nucleus area to test the performance of these crops with different agricultural practices. Operation on black soil also requires a project farm from which the necessary services are obtained by the settlers. Regardless of such requirements, however, the need for a standard farm would have to be justified in relation to the capital investment incurred in the Lower Didessa farm earlier. The need for a strong coordination between the two must be emphasized. IAR has shown an interest to establish a sub-station in the project area and has indicated that some useful information could be acquired from a nearby area.

The need to demonstrate on a standard size project farm can easily be justified if the right approach is used. The approach should be in such a way that farmers can absorb the desired technology.

The schedule on livestock health program is presented in a practical manner and was accepted by the Committee. There was an indication that the scheduled vaccination can be integrated with the national program. Compartmentalizing of veterinary services in project areas has caused problems in the past. Hence, laboratories for investigation purposes should be handled by veterinary services to have sound feed back. It was revealed that there is a plan to establish a regional disease investigation laboratory in Bedele which the project might use.

Regarding the credit program, a general policy of credit is expected from AID Bank and the project should be flexible enough to adjust to the new policy even after the commencement of implementation. Considering the need for credit, whatever the project stage or level of the farmers' income, it is suggested that there should be a provision after the 8th year. Changes in farm size might also alter the credit program and the impact should be indicated.

The construction of storage facilities should fit into the nationwide grain storage program under plan. The per unit cost and number of storage required should be checked against the ones that are available in the country.

With regard to road construction, it was revealed from EHA that there is a project by EHA which might include the project area in the priority list. Because of the benefit which will be derived from the project EHA's consideration may be strong. Construction is done by the project only to upgrade the existing tracks. The construction work is mainly labor intensive.

In relation to tsetse fly control, the method presented in the project was pointed out as undependable. Therefore, to provide with adequate barrier, the width indicated as a buffer zone should be at least doubled (5 km.). The creation of a clear and unsuitable area for the fly is a necessary condition to maintain the control. The section in the MOAF involved in tsetse fly control should be involved in the practical schedule of the project. The general outline in relation to the tsetse fly control is accepted by the veterinary division as represented in the Committee.

Pertaining to surveys and mapping, the planned flight survey by RRC-LSA for topographic mapping would reduce the cost of mapping significantly. Therefore the project would be responsible only for ground work such as surveying of farm plots and marking farm and village boundaries.

The public service program is accepted in principle as a minimum requirement and would be provided by government with no cost to the project. However, some assistance may be provided from the project. The inclusion of an adult education program into the project is also recommended.

The financial analysis used in the project implies a relatively high foreign exchange component. The foreign exchange component in relation to technical assistance must be evaluated in the light of possible rearrangement.

In the economic analysis, estimated market prices for crop backed up to farmgate were considered to represent economic prices in that maize, sorghum, chickpeas, and teff were all assumed to be marketed in the country. For this reason it is recommended that the economic analysis part of the project be worked again using import parity prices.

In conclusion, some major issues were identified by the Committee which would need to be altered as they appear in the project document. The issues which might change the whole approach used in the proposed project are as follows:

1. Differing Settlement on the Black Soil - The 8,000 ha. under this category is either to be excluded or to be left to settlers for cultivation with conventional practices. However, the virgin black soil is not technically possible to plow with oxen for at least the first time. Considering

the exclusion of settlement on the black soil all related changes should be taken into account. All possible care should be provided to have at least the minimal development of the area when excluding settlement on the black soil. Equipment maintenance and specialists for 28 sets of tractor and implements are not required when settlement on the black soil is excluded. After the project life, mechanization on the black soil would mean a budgetary commitment on the government side or cooperatives and peasant associations should develop the capacity to take over the management and maintenance of the project machinery pool. Therefore, a less capital intensive method should be proposed and this area should be differed until means can be found for cultivation. In the meantime this area could provide forage for settlers' oxen and other livestock when animal disease are controlled in the area. Full development of the black soil areas may be considered in further phases of the project. Settler groups should be encouraged and assisted in seeking ways of cultivating the black soil areas which drain quickly after the rains.

2. Implementation Responsibility - As far as the settlement component of the project is concerned, all responsibility should fall to the National Land Settlement Authority (NLSA). However, due to the package approach of this project, the project farm presents a difficulty. Nevertheless, if the project is considered as a settlement program, the project farm can be operated under NLSA's responsibility with assistance from the related agencies. Selection of settlers should be the sole responsibility of NLSA and it should be on voluntary basis. NLSA should advise all other related agencies beforehand as to their role when implementation starts. The initial extension service should be provided by the respective agency at the start of implementation.

3. Cooperative Farming - The general consensus of the Committee is to base the whole project on a cooperative farming system. However, until such time when a general policy on cooperative farming system is available, the Committee is faced with difficulties to decide. Therefore, the Committee recommends that a separate proposal

should be attached to the project document in relation to cooperative organization of farm production. Levels of production, income, employment as well as members of farm families involved should be revised to reflect the influence of the alternative proposal.

4. Economic Analysis - It is the Committee's recommendation that import parity prices be used in the economic analysis in order to assess the significance of the project on the national economy. The magnitude of technical assistance proposed for the project should be reduced reasonably to lower the foreign exchange component.

5. Agencies Involved - All involved agencies and their respective roles in project implementation should be defined. The NLSA should establish the necessary communication with all related agencies to facilitate their participation in the project implementation.

6. Size of the Project Farm - The size of the project farm seems too small as proposed in the project document. The 330 ha. project farm is found to be inadequate for seed multiplication and other services. Based on the seed requirements for the settler farmers and some reserve for expansion, the size of the project farm must be increased.

TRANSLATION FROM AMHARIC

TEMPORARY

GENERAL DIRECTIVES ON LAND SETTLEMENT

General Objectives

1. It is believed that a settlement program not only complements the implementation of the Public Ownership of Rural Lands Proclamation but is also believed that the Government has the responsibility to settle those farmers who remain with very small or no rural holdings.

2. Ethiopia has a lot of uncultivated and arable lands. Taken that Ethiopia has secured the necessary capital expenditures to promote the economic development of the rural sector by building roads, by controlling diseases and other impediments, it is believed that through these settlement programs it is possible to develop the natural resources of the country and create employment opportunities to the majority of the people.

3. The settlement program will not only enhance the income of the settler but will alsoenable him to participate in monetary economy.

4. To improve the natural resources of an area or to preserve the resources already there, it is necessary to resettle in other areas those persons whose holdings are reserved for the expansion of soil, water and forest conservation programs. The resettlement program will help to preserve the country's wealth.

5. One of the objectives of the settlement program is to enable the country to use its own production and to replace imported products by its own production and eventually to promote the export of its own production. This, on the other hand, will speed up the country's economic development.

Settlement Directives

6. Under all circumstances, the settlement program shall focus on the development of the Country. Nevertheless, efforts shall be made to improve the standard of living of the settlers and their families.

7. In overpopulated areas, priority shall be given to people living within or in the surrounding of the settlement area.

8. Settlers and their families who are selected to participate in the settlement program will be screened according to the directives issued by the Program Authorities. Nevertheless, a settler has to fulfill the following requirements:

a. Has to be willing to farm and live as a farmer.
b. Has to be in the 18-45 age groups.
c. Has to have farming experience.
d. Has to be healthy.
e. Has to be landless or own a very small holding.
f. Prove that has no means to live on.
g. He has to accept the Authority's Directives and the development obligations therein and put them in action.

9. According to Public Ownership of Rural Lands Proclamation, settlers will be the beneficiaries of land holdings.

10. The Settlement Authority will assist to establish loan implements and marketing cooperatives within the settlement area.

11. Within the settlement area, housing and village projects will be undertaken.

12. Within the settlement area, soil and environmental studies will be undertaken. Farming methods and technical advice/ directions will be provided in order to increase the settlers' production.

13. The Settlement Authority within each settlement area shall determine the amount of expenditures to be incurred by the settlers, either fully or partially, and the payment procedures of such credits. To this end, credit facilities will include food, seeds, farming equipment, money to buy oxen, shelters, food storage places, etc. Settlers will be required to refund such credit facilities within a limited period of time.

14. The Settlement Authority shall issue directives and permission to settlements already established or to be established by non-Government Organizations. Directives will also be issued for settlements working through irrigation or rain water systems. When fully organized the Settlement Authority will eventually take over the responsibility of all settlements undertaken by other Government organizations.

15. The families/farmers participating in land settlement programs who have been compelled to leave the area shall be compensated for the improvements they brought in by either the Government Authority or the Settlement Authority. However, should the settler leave on his own will, no compensation shall be paid to him.

16. The settlement program shall be conducted pursuant to Public Ownership of Rural Lands Proclamation No. 31 of 1975, and shall strictly adhere to Article 4, sub-articles 3), 4) and 5); Article 5 and Article 6, sub-article 1).

17. The Settlement Authority shall cooperate with the Ministry of Health, Ministry of Education and other concerned organizations in order to establish clinics, schools for the benefit of settlers and their families in the settlement areas.

18. No settler shall be allowed to leave his holding after having completed the necessary formalities and expenditures incurred for his settlement. In order to control the movements of the settlers, the Settlement Authority shall establish a registration system of all settlers and shall have authority to notify the Police Force and provide a list of settlers who have fled their holdings.

19. The Settlement Authority shall put in effect the aforementioned directives and other guidelines and directives issued subsequently.

Settlement Lands

20. The Settlement Authority shall undertake land settlement programs in accordance with Article 16 of the Settlement Authority Establishment Proclamation No. 78 of 1976.

Peasant Associations and EPID Delivery Structure

A. Peasant Associations - Description in Land Reform Proclamation

The Peasant Associations are the most important local administration change introduced by the new government. They were created because "it is necessary that the broad masses in Socialist Ethiopia administer their own affairs, solve their own local problems and participate directly in the political, economic and social movement." In concept the PAs should add a critical local level social mobilization function to the administrative system. They are being organized on a large enough scale to make a significant impact; they are getting the self-reliance training important to local awareness, which in turn is necessary for self-help improvement; they should institutionalize the poor farmer's perspective where in the past this view has been overshadowed by the now neutralized provincial elites; they should provide the institutional interface needed by the technical change agents; while their initial functions relate to implementing land reform, they are assigned important village development functions and should be an important base for agricultural development; they are being formed fast enough to capitalize on the momentum of the revolution. They are the "chosen institution" of the EPMG and enjoy the government's full support. There are numerous constraints which still limit the effectiveness of the PAs (see below) but on the whole, they should be an important adjunct to the government's administrative system for development.

The land reform proclamation issued in March, 1975 calls for the establishment of Peasant Associations (PAs) at the local, woreda and awraja levels. The purposes of the PAs are "to protect the political rights and economic advantages of peasants under socialism and liaison with other progressive masses." The local PAs are to be formed in a manner suitable for development purposes. Generally a chika shum area is to be the basis of the PA with a minimum area of 800 hectares. After land redistribution, previous land owners (who, like everyone else, will be permitted to work ¼ gasha or 10 hectares) will be permited to join the PA.

1. The local PAs have nine major functions:

   a. Help redistribute land in their area (in order of a given priority).

   b. Implement land-use regulations.

   c. Conserve public property, especially soil, water and forest.

   d. Establish judicial committees to hear land disputes in their area.

   e. Establish marketing and credit coops and self-help labor associations (debo).

   f. Build (with the cooperation of the government) schools, clinics, and similar institutions.

   g. Cultivate holdings of people who cannot cultivate their own holdings.

   h. Undertake village improvement programs.

   i. Exclude mining and forest lands from distributions.

The relevance of this new administrative structure to agriculture and rural development is obvious from its functions. However, given the regional/ethnic variations in the traditional way in which these functions have been performed, the PAs will need to be most flexible in adapting their responsibilities to the regional variations.

The General Meeting is the supreme organ of the PA; it is to appoint (a) an executive committee to function as the PA representative, (b) judges, and (c) delegates to the woreda PA. The General Meeting controls the activities of the foregoing appointees and has dismissal powers.

2. The Woreda PAs are to be formed by delegates from the local PAs; they coordinate the activities of the local PAs. They are to elect judges and establish judicial tribunals to hear appeals from the local "courts". They have the power to change the local boundaries to give the peasants equal holdings. They will have a four-man Executive Committee (chairman, secretary, treasurer, liaison officer) which will function as the woreda PA representative. The General Meeting is again the supreme organ of the

woreda PA and all directives passed by it shall be binding on the local PAs. The General Meeting is seen as the controlling body and will appoint delegates to the Awraja PA.

3. The Awraja PAs follow the same pattern of organization and functions as their lower level bodies, with the following comments. The awraja PA will have the responsibility of liaisoning with the government's development agencies, a function not assigned to lower PAs. Representation on the awraja PA is in proportion to the number of local peasant associations subscribed in each woreda, not on the basis of one delegate for each woreda. The Executive Committee of the awraja PA is to prepare at least one (annual) report covering all the projects undertaken by the PAs together with government agencies at all three administrative levels.

B. Peasant Associations and Cooperatives: December 1975 Proclamation

In December, 1975, the "Peasant Associations Organization and Consolidation Proclamation" (No. 71 of 1975) was issued to clarify and describe in more detail this important institution. Actually, the Proclamation goes beyond this and creates a new structure for rural development coordination. The proclamation strongly reinforces the mandate for popular participation in both the political and economic development process. It gives the PAs a legal identity and states that the government must predicate its activities on the problems and needs of the broad masses, as articulated through the PAs. The PAs' powers to establish judicial tribunals, women's association and defense squads are elaborated in some detail.

Very important from the agriculture point of view, the proclamation was issued because "it is necessary to organize and develop cooperatives--to lay down the foundation for socialist agriculture." Two types of cooperatives are provided for: Service Cooperative Societies and Agricultural Producers Cooperative Societies. (See below.)

It is anticipated that the organization and administration of cooperative societies will be elaborated in yet another proclamation.

The new structure for rural development coordination is the Revolutionary Administrative and Development Committees. At the central level, a "Permanent Central Committee" on implementation and coordination of rural development is established.

Similar committees are to be established at the Provincial, Awraja and Woreda levels. Every development ministry, plus Zemetcha administrators and participants, Police, Finance and the Planning Commission, is represented at the Provincial level. It is their duty to coordinate and execute development programs planned centrally, and locally. The Committee is to be chaired by the Ministry of Interior Provincial Administrator. There is no provision for PA representation at the Provincial level, but the PAs have three members on the awraja and woreda committees. (See attached chart.)

These committees seem to fill the long needed requirement for a horizontal coordination mechanism. They decentralize inter-agency coordination closer to the level of implementation. They strengthen the hand of the local administrators but build a system whereby the PA's wishes can be aired and responded to without going to the cumbersome national level. The structure is not without weaknesses and faces problems. (See Local Administration Report, ASL Evaluation and background paper.)

1. Organization and Membership of Service Cooperative Societies

a. Unless the number of the members is otherwise determined by law, not less than three and not more than ten peasant associations may form a service cooperative society without affecting the legal personality of each association.

b. Service cooperative societies may establish one service cooperative society at Woreda level and where necessary, higher service cooperative societies as may be prescribed by law.

c. Woreda peasant associations shall supervise all service cooperative societies established in the Woreda at any level. However, the peasant association shall not interfere with the day-to-day activities of Service Cooperative Societies.

2. Objectives, Powers and Duties of Service Cooperative Societies

The objectives, powers and duties of a service cooperative society shall include the following.

a. to procure crop expansion services;

b. to market the produce of members at fair prices;

c. to give loans at fair interest rates;

d. to give storage and savings services;

e. to supply consumer goods to the members according to their needs;

f. to give education in socialist philosophy and cooperative work in order to enhance the political consciousness of the peasantry;

g. to supply improved agricultural implements and provide tractor services;

h. to collect contributions;

i. to give flour mills services;

j. to organize craftsmen in order to promote cottage industry;

k. to provide political education with a view to establishing agricultural producers' cooperative societies by forming, promoting and consolidating mutual aid teams like debo;

l. to sue and be sued;

m. to draw up its internal regulations.

3. Objectives, Powers and Duties of Agricultural Producers Cooperative Society

An agricultural producers' cooperative society is a society that is established voluntarily by peasant associations; it shall have the following objectives, powers and duties:

a. to put the main instruments of production under the control of, and when necessary to gradually transfer their ownership to, the society;

b. to divide members into working groups to enable them to work collectively for the society especially by organizing members with special abilities in order to obtain mutual benefits;

c. to give priority to the interests of poor and middle peasants and to ensure that the leadership of the association is drawn from such peasants;

d. to raise production and to gradually improve the instruments of production;

e. to pay the members according to the quality and quantity of their work;

f. to assign a special fund for the welfare and security of the members;

g. to struggle for continuous improvement, democratic rights and unity;

h. to struggle for the gradual abolition of exploitation from the rural areas and to refrain from any kind of exploitation

i. to engage in continuous political movement in order to enhance the political consciousness of its members;

j. to sue and be sued;

k. to draw up its internal regulations.

C. Peasant Associations as Institutional Constraints.

It is estimated that approximately 40,000 Peasant Associations could completely organize the countryside. To date, some 27,000 PAs have reportedly formed, but only 21,000 of them have met frequently. Some PAs are estimated to have as few members as 80, while other PAs reportedly have as high as 3,000 members. The effectiveness of each of these PAs varies greatly as well as the capabilities of their members.

The most serious constraint facing local government administration is the possible over-reliance on the PAs as the new local-level agency for all development implementation. It seems as if every government rural function is to run through them--from agriculture cooperatives, thru census, to security. Nowhere is this proliferation of assignments more evident than in-training. Supposedly they would receive technical training in agriculture, in literacy, in census taking, in Ethiopia Tikdem civics, in health, in cooperatives, in etc. But no one is talking about building the PAs as an effective local institution, per se. All the discussion is to "work through" the PAs. Some serious attention should be given to this need for organizational leadership, management and administration training.

The PAs are new and untried institutions. Over-reliance on them could sink them. Few of the local peasants who will be allowed to come to leadership in the PAs will have experience in the depth necessary to implement all the functions being outlined for them. Work priorities must be set or evolved. If these are set by the government from outside (to achieve its national priorities) local participation will not contribute much differently than it did under a feudal pattern of government.

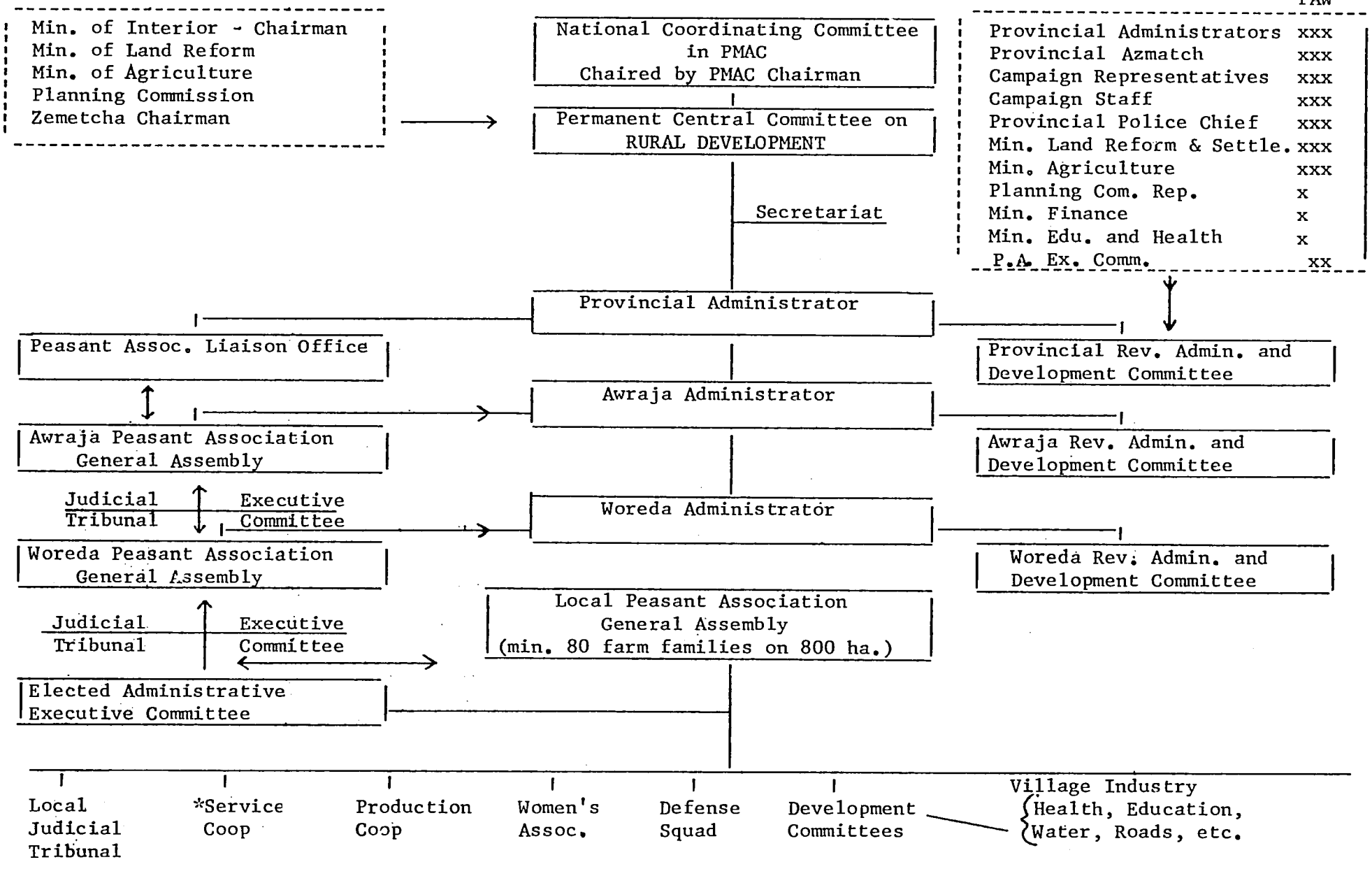
If priorities are established locally, the new government may not have the flexible administrative arrangements to respond, and sustained local participation will dwindle. A solution to this dilemma should be an urgent policy matter for the GOE.

The level of interface between the technical ministries' change agents and the PAs is the Awraja. That is, two administrative levels above the local or implementation level. With almost no full-time technical assistance, and given the anticipated low-level of leadership for the local PAs, itsshould not be expected that they will be a strong institution in the immediate future. The PAs are being created by the Zemetcha who are individually, if not institutionally, a transient group. There is some question about the basic survivability of the PAs when the founding Zemetchas are subsequently replaced by new campaigners.

In very few sub-cultures of Ethiopia is the concept of collective action for the community good totally foreign. The PAs should prove to be a significant increase in local government administrative capacity, if they are established and operated properly. But they will need far greater material support (self-help funds, agriculture in-puts, village technology, training opportunities, books, learning materials, simple medicaments, village and home improvement materials, etc.) than is presently allocated by the economy, if even a small portion of the PAs are not to wither into extinction.

Lastly, the economic and production policies that will guide the PA activities are not very clear yet. This must be done in enough clarity and strength that the zealous Zemetcha not warp them into uneconomic instructions.

Rough Impression of PEASANT ASSOCIATIONS Reorganization Outline



* Crop production, marketing & storage, loans, consumer goods, political education, agriculture implements, milling services, collect contributions, organize craftsmen

SOCIAL SOUNDNESS ANALYSIS

I. INTRODUCTION

The Social Soundness Analysis Guidelines were designed to assist project designers in identifying and resolving issues involving social constraints to achievement of project objectives. As such, the Guidelines focus attention on the conformity of the project intervention into an existing social and political framework. In Ethiopia this social and political framework is in a state of flux and there are attempts to establish a new social order.

Elements of this project are designed as a testing ground to assist the GOE in developing a viable social order in Ethiopia, centered around the establishment of Peasant Associations. Thus it is difficult at this time to predict how these new social changes will be received. The changes to which the farmer must adapt due to the introduction of new farming methods are not difficult to anticipate and have been included in the analysis. The difficulty arises when one attempts to speculate on the adaptation of a new social order--for what we are then attempting to predict is the future of the social order of Ethiopia, not just the Didessa Valley. It is these questions which the project hopes to shed some light on. The Upper Didessa Resettlement Project will test the effectiveness of the peasant associations and the amount of responsibility they can reasonably be expected to handle. Their success or failure will provide valuable information to the GOE for expansion of cooperatives and peasant associations throughout the country.

Due to the unusual social circumstances surrounding this project, slight modifications of the Guidelines will be made in order that a clearer picture of the social order, not only of Didessa but of the country as a whole, is portrayed.

In light of the complexity and difficulty of the social and economic forces at play, the Mission has invested heavily in social science analysis in developing this project. Aside from the TAMS feasibility study which portrays the settlers presently in the area, two further studies were also carried on:

"Social Soundness of Agrarian Reform in Ethiopia" by Allen Hoben, February, 1976.

"Government Policy on Settlement and Potential Settlers for the Upper Didessa Project" by Gail Simpson, March, 1976.

The Social Soundness Analysis draws upon these materials to address specific key issues. However, no attempt is made here to portray the richness of detail of the underlying material nor the complexity and dynamism of the situation in reality. The reader is referred to these materials available in files and urged to familiarize him/herself therewith.

II. SOCIO-CULTURAL FEASIBILITY

A. Country-wide Socio-Political Setting

In order to understand the role of the project, it is necessary to understand as well as one can at this point the Agrarian Reform as a whole. Chapter IX of the Hoben report summarizes the findings of that analysis. The conclusions of the Hoben analysis made after an extensive study of the changes are as follows:

1. The Ethiopian Government is strongly committed to bringing the benefits of development to all segments of its rural population, including the rural poor.

2. The design of Ethiopia's agrarian reform program is consistent with the objectives of the Social Soundness Analysis in regard to the participation of the poor in the development process.

3. During the initial phase of agrarian reform large landlords in the southern provinces lost their political power and their land, with the result that their former tenants will enjoy substantially higher real incomes.

4. Serious political problems have arisen in the northern small holder provinces because of the mode and speed of implementation of agrarian reform.

5. Despite these problems, Ethiopia's agrarian reform program should be supported by USAID.

B. Organizational Units Within the Didessa Area

1. Lower Level: Peasant Associations

Within the project area, mutual labor exchanges are already a way of life. Most farmers belong to one or more "associations" in which all members help each other doing difficult tasks, e.g., building houses, plowing, harvesting. The member receiving such assistance will provide the group with food and drink in return for their labor and will, in turn, help the others when so requested.

The mutual groups, or societies, which have been organized in the Project Area were studied during the field survey period and are briefly described below.

1) Debo - A group averaging 22 members who organize to assist each other in very difficult tasks such as plowing and building houses and storage sheds.

2) Dado - A small groups of about 10 farmers who assist in easier work which can be done in a more leisurely fashion, such as weeding, harvesting and threshing.

3) Tulatutu - A burial society averaging 30 members who attend to funeral arrangements for themselves and their families only.

4) Idir - The largest type of society, ranging from 80 to 100 members, who bury dead from poor families or those not belonging to a tulatutu organization. This society undertakes various community activities, and aide poor families to rebuild homes destroyed by fire. It also assists widows and handicapped men in farming operations.

5) Mahber - A religious group (in this case Islamic) averaging 30 members who aid each other in all ways and also look after poor people or families who have insufficient food.

In other systems of labor exchange, a son-in-law will freely assist his wife's parents; neighbors will aid a sick or disabled man; or a widow living alone will be helped without charge.

These associations, which are all voluntarily and spontaneously organized as required to meet specific needs for the mutual benefit of their members (as well as for philanthropic purposes), provide the type of cooperation necessary for the recently established peasant associations (see Annex B, Exhibit 5).

While the peasant associations are not yet a year old and their cooperative duties have even more recently been decreed (December 14, 1975), they are becoming a focal point of the Ethiopian socio-economic system. While peasant associations are not in existence in the Project Area to the degree necessary, they will be formed as soon as settlers arrive. The number of participants being settled at a given time are those necessary to establish peasant organizations (100 farm families) and cooperative societies (made up of 4 peasant associations). While the actual peasant associations through which these settlers will work will be newly formed, the settlers should already be familiar with this type of organization from the changes which have occurred during the past year. It is expected that these peasant associations will make decisions as to what they require for continued development, will act as a means through which inputs such as credit, marketing services, new seeds, etc., are distributed, and will eventually have control over their own society. This type of organizational structure, through which the daily needs of the farmer will be handled, should enhance the likelihood of a successful program. Decisions as to the direction necessary to acquire a better way of life will be made by the peasants themselves, rather than dictated by a higher body. While the diversity of the settlers may make the smooth running of the peasant organization difficult at first, these problems should be overcome. The peasant organization, by calling for meetings, discussions, and interchange of ideas, should prove an effective way to learn about and accept each other. With a common goal, which they have decided upon themselves, the peasants should be able to interact with one another in a more successful manner than might occur if the main organizational unit did not take their desires and capabilities into account.

2. Higher Level: Land Settlement Authority

The main overseeing body of the project is the newly established Land Settlement Authority (February 4, 1976). Through this organization the choice of settlers will be made, the logistics arranged and the initial inputs provided. While initially they will be the main organizational body, their importance will diminish as peasant associations are established and social and economic services are provided by already existing organizations. Through the efforts of the peasant associations health facilities can be set up with the aid of the MOPH, police sub-stations can be provided, minimum-formal education schools can be established through participation with the

Ministry of Education, and farm inputs can be continued through the services of EPID. Thus while a newly established organization the LSA is necessary for initial implementation, it is expected to phase itself out and be replaced by already existing organizations both at a high and low level.

C. Allocation of Time

1. Present Division of Labor and Time Requirements

It is extremely difficult for the farmers to accurately know the time required (per timad) for the various farming operations and hence the estimations may be biased. Plowing is always done with assistance from fellow members of his "debo" association and may be done on a piece-meal basis and during varying portions of different days which he cannot relate to in terms of person/days. Plowing time varies from year to year depending upon the pattern of early rains. Harrowing time (breaking clods with hand tools and loosening the crust for planting) depends on the thoroughness of the plowing. Some farmers report one or two plowings; others may plow up to five or six times depending on the structure and compactness of the soil.

Data based on field surveys, observations, and judgment, are presented for each major crop presently grown in the Project Area. Labor requirements are summarized in Table I.

Maize - Maize is grown by all farmers who plant an average of 0.5 hectare each. It is the principal food in the diet and poor harvests or crop failures are disastrous. The planting time varies from late March to mid-May depending on the early rains and the time required for land preparation. Normally, maize is the first crop sown and it may be replanted if necessary. Weeding is done once or twice during May and June and ceases after the heavy rains begin. The crop matures very slowly (from 160 to 180 days) as eco-climatic conditions, i.e., excessive rainfall, low soil fertility, high percentage of cloud cover and low temperatures, prolong the growth cycle. Harvesting begins in September, when immature green corn is consumed and continues through November. An average total of 201 person/days per hectare are required for all operations.

Sorghum - Sorghum is the second most widely grown crop in the valley and, like maize, is included in the cropping pattern of each farmer interviewed (average 0.45 hectare each). It is normally sown between May and June following maize planting, is weeded once or twice about 30 days after emergence,

and is harvested during December and January. It is threshed as required and the bulk of seed will go into storage. An average total of 242 person/days per hectare are required for all operations.

Millet - An estimated 85 percent of all farmers plant 0.5 hectare of millet each. The growing season is similar to sorghum. Labor requirements are somewhat lower than sorghum primarily due to less time spent in land preparation prior to sowing. An average total of 215 person/days are expended per hectare.

Chick peas - Chick peas are grown by 33 percent of the farmers who plant an average of 0.35 hectare each. They are always sown in late September or early October when the rains are beginning to subside. For most farmers this is a second crop interplanted with maize without any land preparation just prior to maize harvest. Others will prepare new land as soon as the field can be plowed. Average plowing, harrowing and sowing times are, therefore, much less than required for cereal crops and weeding requirements are somewhat reduced.

The soils are at or near maximum water retention capacity at sowing time and rainfall is normally sufficient during October and early November for potential evapotranspiration. Residual soil moisture carries the crop to maturity in November and December, and harvesting is completed during January.

Teff - This cereal is planted by about 25 percent of the farmers on an average of three "timads" or about 0.4 hectare each. It is a highly preferred crop as the favored injera is made from teff flour, but, due to its low yields when compared to other cereals, it is only grown by those more affluent farmers with larger than average holdings. Teff is planted in July and August, both being months of heavy rainfall. The fine seeds are broadcast on land prepared in May and June, lightly covered. Weeding time is less due to the rapid growth of teff which soon completely shades the earth. The crop may be harvested as early as October but normally not until November or early December. Teff, when dry, shatters easily. To prevent excessive losses, it is usually harvested while slightly green, stacked near the threshing floor with panicles inwards, and threshed over a period of several months.

Berbere - Berbere is a hot red pepper used as a food spice. Most farmers grow a few pepper bushes in small gardens near their compounds for home consumption. Approximately 15 percent of the farmers plant berbere as a cash crop on an average of 0.3 hectare each. The recommended practice for pepper culture would be to plant seeds in a sheltered area and to transplant three to five week old seedlings to the field. In the Project Area, the fields are plowed in May and early June and, following hand harrowing, seeds are planted directly in the field in late June. Intensive weeding and thinning are required during July and August with harvesting beginning in September and continuing into January. The pods are brought to the compounds for drying and may be marketed either as dried pods or as powder. This crop is considered as "woman's work" and the male farmer is not aware of the volume or time involved.

Noug - Noug is an oil seed grown by 15 percent of the farmers on an average of 0.20 hectare each. Cultural practices are similar to those for teff. Seeds are sown following hand harrowing in July. A limited time is spent in weeding during August, and harvesting is carried out during December and January before the plants have completely dried. Less farm labor (137 person/days per hectare) is required than for the other cereal crops.

Minor Crops - Other crops presently grown in the project area were either planted on very small areas by numerous farmers or only planted by so few farmers that reliable data could not be obtained. Some of these crops may have future importance.

Cotton - Cotton is grown in small quantities by perhaps 10 percent of the farmers. It may be planted to mark field boundaries, in gardens, or as a second crop interplanted with maize or sorghum when these crops are in the flower stage. When planted spearately, it is sown in June/July, weeded twice in July/August, and harvested from November through January (3 or more pickings). Very little time is spent in land preparation, thus weeding requirements are high. Harvest, transport and delinting times are low for cotton, which obviously reflect very low yields.

The women spin cotton into thread with crude hand-held spindles, then weave simple clothes and winter shawls (gabis).

2. Haricot Beans - This crop is planted in small gardens by some of the farmers and normally matures in about 120 days. If rains come early, haricot beans may be sown in

March with very little land preparation and harvested in June. They are also interplanted on a small scale with maturing maize in early September and harvested in December.

3) Garden Vegetables - No attempt has been made to evaluate or quantify production from small farm gardens observed in the area. There was an obvious economic return as farm women could be seen on the Chara market offering small amounts of garlic, onions, tomatoes, okra and broad beans for sale. Gourds are grown by numerous farmers for both home use and market sale. Small amounts of limes are also used for both home consumption and market barter/sale.

Based on the figure in Table I, the "average" farm of 1-2/3 hectares (this does not include land for small family gardens) requires 343 person/days of care. The division of labor between men and women, usually results in the weeding and threshing, as well as full care of the berbere, being taken care of by the women. These endeavors account for approximately 50 percent of the total time involved in farming. Both men and women are involved in harvesting and transport thus increasing the women's portion of the farm labor to well over 50 percent. Children, depending on their age, also contribute to the farming process.

3. Distribution of Farm Yields

Farmers on small holdings (1.75 hectares or less) consume practically all of their harvests. Cash income is generated only through occasional sales of livestock, butter, poultry, garden vegetables and small amounts of grain. Farmers on larger holdings have additional surpluses for sale and/or barter on the market. On a percentage basis, the distribution of yields from all holdings between home consumption (including livestock and poultry feeding and storage losses) and marketing or bartering were computed as follows:

Crops	On-Farm Consumption (%)	Sales/Barter (%)
Maize	80	20
Sorghum	75	25
Millet	70	30
Chick peas	25	75
Noug	70	30
Teff	70	30
Berbere	25	75
Haricot Beans	80	20
Others	50	50

TABLE 1: Existing Farm Labor Requirements
(Person/days per Hectare)

Crops	% Farmers Who Plant	Average No. Hectares	Planting Months: All Plowing	Planting Months: Harrowing and Sowing	Months All Weeding	Months Harvesting	Threshing 1/	Building Storage	Transport to Storage	Total Farm Labor
			Late March/Mid-May		May-June	Sept.-Nov.				
Maize	100	.5	27	35	69	19	40	7	4	201
			May-June		July	Dec.-Jan.				
Sorghum	100	.45	30	38	65	57	42	6	4	242
			May-June		July	Dec.-Jan.				
Millet	85	.5	22	36	57	53	37	6	4	215
			Sept.-Oct.		Nov.-Dec.	Jan.				
Chick peas	33	.35	13	13	48	30	40	6	2	152
			May-Aug.		Sept	Nov-Dec.				
Teff	25	.4	22	38	34	34	40	7	3	178
			May-June		July-Aug.	Sept.-Jan.				
Berbère	15	.3	17	29	78	29	23 2/	-	-	176
			July		Aug.	Dec.-Jan.				
Noug	15	.2	25	32	31	26	12	3	8	137
Haricot beans			15	15	31	54 3/	-	-	-	115
Cotton			8	31	115	46 4/	-	-	-	200

1/ Threshing occurs as crop is needed for consumption.
2/ Includes transport from field to drying floor and labor for drying.
3/ Includes picking, transport to drying area and shelling.
4/ Includes picking, transport to compound and delinting.

TABLE 2: Distribution of Family Labor Inputs at Full Production Potential
(Person/days per hectare)

Crop	Apr	May	June	Jul	Aug	Sept	Oct	Nov	Dec	Jan to Mar	Total
Maize	15	-	18	15	-	10	15	18	18	18	127
Sorghum	-	15	-	18	15	-	15	15	15	18	111
Chick peas	-	-	-	-	-	10	8	7	3	15	43
TOTAL	15	15	18	33	15	20	38	40	36	51	281

NOTE: Total family labor available any month assumed at 42 person/days (the equivalent of 2 adults working 21 days/month)

On a weighted average basis, approximately 70 percent of production yields were consumed on the farm, and 30 percent went to market, primarily for bartering.

3. Anticipated Changes Due to Project

The crops to be adapted by the cooperative farms will reduce those presently cultivated to maize, sorghum and chickpeas (one hectare each per farm family), with the latter interplanted with maize for a total land use of 2 hectares. This would reduce the time necessary for production from the present 343 person/days necessary on the existing "average" farm, to 281 person/days (this, of course, would be an increase in working time for the settlers previously unemployed). The expected distribution of family labor inputs during full production is shown in Table 2. Plowing and planting of maize and sorghum occurs from January to May and does not necessitate the woman's help. From June through September her help is necessary for weeding and from October to December for harvesting. In addition to these tasks the men may be involved in building storage facilities, wells, and socially oriented infrastructures (schools, health clinics, peasant association meeting halls). The decrease in the total person/days necessary for production farming is a result of:

a. the better health of the new settlers into a malaria free area--the present farmers in the Didessa region, on whom the estimates in Table I were based, are infected by malaria. This decreases their working capabilities requiring more time to cultivate a smaller area. With the elimination of malaria in the region, those presently affected can be cured, also reducing their necessary work time.

b. Changes in agricultural practices brought about by the influence of the extension agent, the use of oxen for plowing, and the use of a large plot of land farmed cooperatively vs. small disjoint plots. While these changes should result in more efficient use of time it must be remembered that the estimates of time spent on farm tasks by the present farmers were made by the peasants themselves. The accuracy of these initial estimates is questionable, and hence the reductions in number of person/days may not be as great as the figures indicate.

The distribution of farm yields between on-farm consumption and sales will change drastically once full production is underway. It is expected that by year four the following percentages will be in effect.

Crops	On-Farm Consumption (%)	Sales (%)
Maize	3	97
Sorghum	2	98
Chickpeas	9	91

(Refer to Part II, Project Description for more detailed figures.)

This large shift in salable produce should provide a definite incentive to the existing farmers as well as new settlers. While certain crops which were produced for home consumption (millet, teff, noug, etc.) may now have to be purchased, the extra cash income should greatly exceed this additional necessary cash outlay.

D. Project Participants and Their Characteristics

Although the actual settlement site is entirely in the Province of Ilubabor, it is adjacent to the borders of Kefa and Welega Provinces. Therefore the general vicinity of the settlement site, i.e., the settlement priority areas, includes portions of all three areas. Four types of potential settlers live within these three provinces:

1. rural poor,

2. displaced migrant workers,

3. lumpen and urban unemployed, and

4. groups which need to be settled for other reasons.

In this section each of these groups will be characterized and an effort will be made to relate their background and present problems to possible motivation for participating in the settlement project. An assessment will be made of the suitability of each group as settlers including a review of each group's settlement record and a discussion of possible obstacles to successful settlement.

1. Rural Poor - It is estimated that 90 percent of Ethiopia's population consists of peasant farmers in rural areas with low average per capita incomes. The widespread poverty among peasants can be attributed to various conditions, some of which are looked at in the following:

Overcrowding: People in this category have constituted the majority of participants in the country's settlement efforts. Most projects have had the goal of providing land to landless farmers or to farmers whose plots are just too small. Motivation to obtain access to adequate land is high in this group. Peasants have endured extreme hardships to get to and remain at the settlement site. In low cost schemes where government help was virtually absent, settlers provided transportation, initial food and farm inputs from their own extremely limited resources often doing without basics in the first years. Brush clearance and initial plowing was usually hampered by the absence of oxen, and settlers were forced to cultivate with hand hoes for one or two seasons. Under these conditions, many settlers turned back. But in cases where the initial settlers succeeded in creating a viable community, many other families spontaneously came seeking their own plots. Because expansion of these early settlements was often thwarted by commercial interests, many of these second and third generation hopeful migrants were disappointed. However, their willingness to remain at the settlement site as tenants to the pioneers is evidence that what they found at the site was more attractive than the conditions they left.

Lack of Access to Markets and Farm Inputs: People suffering from poverty due to lack of access to markets or lack of capacity to purchase yield increasing inputs have been less systematically included in settlement projects than have people who suffer from lack of land. An agency which decides to devise a development program for a region suffering from lack of access to inputs and markets would probably try to offer assistance in situ rather than attempting to resettle the population. Furthermore, poverty due to these causes does not force mobility like overcrowding does and in isolated areas farmers are less likely to hear about settler recruitment. Another factor explaining why this population is not highly represented in settlements is that many of the poore r settlement projects have offered no improvement in inputs and services over what this population had in its original residence.

However, this population is represented in settler populations to the extent that individuals take the initiative to present themselves to agencies during settler recruitment. This happens frequently enough to indicate that such people value the opportunities provided by settlement schemes even when

the project offers only minimal inputs and services. In some cases, the individual finds his farming situation hopeless and, like the landless migrant workers, wanders to a town or a place where he hopes to find wage labor. When the opportunity for settlement is perceived, he applies, like people from overcrowded regions, for space in the program. In other cases, a peasant farmer who resides in the vicinity of a settlement project sees that the inputs offered to settlers are things which would make his farming energy much more productive, such as credit for oxen, seeds and fertilizer. He presents himself to the settlement agency as a settler candidate anxious to move to the settlement site to obtain the advantages the project offers. In general, settlers with this background are as highly motivated and suitable for settlement as peasants who come from conditions of overcrowding.

2. Displaced Migrant Workers - That this population represents a source of potential settlers for the Didessa project is the result of two factors: the previously high seasonal labor demand in the coffee areas of the three provinces and the land reform which reduced the labor needs. The background to the displacement of a large number of migrant workers is discussed here.

Migration for Employment Opportunities: The coffee growing regions of Kefa, Ilubabor and Welega have been the focus of seasonal migration for years. Under-employed Ethiopians all over the country know it as a place where at least temporary jobs could be found. Little systematic data has been gathered on the origins of the migrants. People familiar with the issue assert that a large proportion are from the overcrowded regions of the country, particularly Wollo and Shoa, and that many others are from the poorer regions of the three coffee provinces. Thus, it appears that the migrants have come to the coffee growing areas to work as temporary laborers because of under-employment, poverty, landlessness, etc., as previously described.

There is no guide as to which were the most common patterns of migration. In some cases, the laborer regularly returned to his home during the off-season whether the home was a nearby village or a distant province. In other cases, the commitment to the home region was less strong, the trips home were more rare, and the migrant drifted to the towns in the new region to pass the off-season when he was unable to get year-round work.

Reduction in Need for Hired Labor: As a result of the Land Reform, the labor requirement of these coffee regions has been considerably reduced. First, no private holder of coffee land will be permitted to have more than 2.5 hectares. This is official government policy being enforced by peasant associations through land redistribution.

Secondly, by prohibiting the hiring of labor the proclamation changed the labor pattern for the large number of peasant land holders who previously depended on employees during the peak coffee season. Resident farm families will be forced to provide a higher proportion of the labor for their coffee harvest. In order to ensure an adequate supply of labor, peasant associations are organizing to make more efficient use of the labor represented in their districts. Thus, because all of the coffee in one district does not ripen at one time, large collective harvesting groups can move quickly to harvest those plots which demand attention. In this manner, the smaller number of workers--only peasant association members--will be able to do the work previously accomplished under a wasteful system. The effect, however, is the displacement of a number of migrant laborers who previously worked for the peasants.

Thirdly, at the time of land reform, the owners of the 237 coffee estates abandoned their operations. Many of the large land owners fled fearing retaliation from peasants. Others merely left because their land was nationalized and they had no reason to continue supporting operations. Seeing that there was no one left to pay them, most of the hired labor also abandoned or were forced out of the estates and flooded the region's urban areas. Government officials in Jima saw the potential for great loss in coffee production as a result of these estates being abandoned, and also feared that counter-revolutionary forces might seek to organize the mass of destitute workers for disruptive purposes. They therefore pressed the National Resources Development Ministry (NRD) to take up operations of these estates and re-employ the laborers. Thus, farm operations were resumed and many of the temporarily displaced workers were re-employed.

From the time of the land reform, however, peasant associations have pressured the government to give the land which was absorbed in these estates back to the residents from whom it was taken relatively recently. Most of these estates have only appeared in the last fifteen years. It is felt that the peasants' claim

should be honored and the government will return 97 of them to peasant associations at the end of this season. The administration has decided to let peasant associations determine the fate of the laborers on returned estates. In some cases, it is applying pressure for the peasant associations to absorb them--because some laborers have been working on estates for up to 15 years. Associations are reacting in different ways to government pressure, but it appears that few will choose to cooperate with the request to incorporate the laborers as their labor is no longer needed. The laborers are still considered intruders who helped the landlords usurp the peasants' rights. Thus, most of the temporary and permanent laborers on the 97 returned farms will be displaced by April, 1976.

On the 140 estates which remain under the control of NRD, an effort is being made to increase the number of permanent laborers and reduce the number of seasonal workers. Thus, with the end of this coffee season, many temporary workers on these estates will be sent away as usual, but with much reduced prospects for re-employment next season.

These groups, then, constitute the pool of displaced migrant workers who can be considered potential settlers for the Didessa settlement. These people originated in poor rural areas and hence might be expected to have the same motivation for settlement which is found among the rural under-employed. The extent to which this is true will be discussed in the section on Motivation/Suitability of Settlers.

3. Lumpen and Urban Unemployed - The term lumpen is widely used among Ethiopian officials who deal with the problems of the chronically under-employed residents of towns and cities. The stereotype of the lumpen no doubt fits some portion of the visibly unemployed people in the towns, but it is not the full picture. Many unemployed are more accurately described as migrant workers like those discussed in the preceding section.

For purposes of this discussion, urban unemployed will be divided into three categories. Hard-core lumpen and unemployed seasonal agricultural labor represent two end-points on a continuum. Urban-based seasonal agricultural labor/potential lumpen represents some intermediate range between end-points.

Hard-core lumpen: Lumpen are apparently visible in every town in the country. They hang around on the streets or near market places, usually idle but sometimes doing odd jobs such as carrying bundles or loading trucks. Lumpen are characterized as a degenerate lot. Their small and sporadic incomes are reportedly spent on drink, tobacco and other forms of immediate gratification leaving the reveler totally without resources in a short time. A large portion of them are young men who have been raised in towns with little, if any, agricultural background. Many of them are school drop-outs living on petty theft and odd jobs. Others are older men who have been "coolies" for so many years that they bear little resemblance to the cousins they left on the farms.

Hard-core lumpen tend to avoid seasonal employment in agriculture. From time to time, they may move out of the towns for brief periods to earn money. There is no reliable data to indicate the frequency or duration of such employment. They are, however, considered unreliable workers who run to town as soon as they are paid and do not return to work until the last of their money is squandered. They reportedly do not like to work hard and prefer to remain in towns where life is easier and where they can obtain the pleasures to which they have become accustomed.

Unemployed seasonal agricultural labor: During the off-season, the seasonal laborer will appear among the ranks of the urban unemployed; but for many, the stay in town is temporary. The laborer comes for supplies or to await news of where new employment opportunities can be found or to catch a bus back to his home with the money he has saved from the season's work. This group has little in common with the lumpen.

Urban-based seasonal labor/potential lumpen: For other migrant workers, the stay in town is less temporary. The ties with the place of origin have been broken and the town has come to serve as home during the off-season. They have nowhere else to go.

Many of this category, the ones with the strongest urban link, have already acquired some of the habits and characteristics of hard-core lumpen; but in background they are still distinguishable by their peasant farm origin and skills. When asked whether they want to be settlers, most of these urban-based laborers claim that they prefer working for wages which

come in small, regular cash installments. Observers comment that this preference is based on the laborers' inability to ration cash resources over periods of time and is related to the hard-core lumpen characteristic of squandering money.

4. Persons to be Resettled for Various Other Reasons - It is felt that a community of 8,000 Jenjero families should be transferred from their present location which is severely eroded. As a result of the infertility of the land, the peasants are suffering from extreme poverty. To meet the objective of "the conservation of forest, soil and water resources" set out in the LSA Proclamation, it is felt that these peasants should be resettled elsewhere and reforestation should be implemented to recover the natural resources.

Other such special cases may be identified in the future and represent sources of potential settlers. As these people come from peasant farm backgrounds, and to the extent that they are needy, they will probably make suitable settlers. It will be up to government authorities to convince them to leave their place of former residence. Some resistance may be encountered.

From past experience it should be noted, however, that the wholesale transfer of an existing community to a new region creates a tendency toward segregation between the community and the others in that region, which is not healthy for new community creation. This problem can, however, be overcome by systemmatic encouragement and insistence on integration.

E. Motivation/Suitability of Settlers

1. Rural Poor: The suitability/motivation of the rural poor is very high. Generally, candidates in this group make the most suitable settlers because of their immediate peasant farmer background and their nearly universal desire to continue farming under improved circumstances. They possess basic farming skills and other knowledge which is necessary for life in rural areas. These skills can be improved and, in settlement projects with sufficient resources, this will be a goal. To improve a peasant farmer requires much less effort, however, than to create one.

One potential obstacle to settling members of this peasant farmer background in the Didessa project should be mentioned. The government's commitment to expand collective farming activity in Ethiopia is recognized by the planners of this settlement. There is a widely acknowledged belief, however,

that Ethiopian peasants have a highly developed sense of individual rights to use of land. Though cooperation among farmers is almost universally practiced in rural areas, the implied joint ownership of its produce, is not traditionally known. Thus, the idea of group rights to land and produce may act as a deterrent to a small number of potential settlers. However, there is ample evidence in recent LSA projects that most of the objections to joint farming and ownership of production can be overcome with effective ideological support. The success which National Campaigners have had recently in organizing group rights to land in hundreds of peasant associations is further evidence that collectivation is not fundamentally objectionable. It must also be remembered that the acceptability and effectiveness of joint farming is one of the hypotheses being tested by this project.

2. Displaced migrant workers/lumpen and urban unemployed: The potential success of these two groups will be based on a review of the experience gained in three recent settlement projects in Kefa which attempted to settle members of precisely these populations.

A careful review of one of these sites, Gojeb, reveals important conclusions concerning the potential for settling urban unemployed and migrant workers. It is estimated that of the 800 urban unemployed recruited in Jima for resettlement, about 300 were from the urban-based and lumpen populations. Apparently, at the time of recruitment, it was not made clear that they were being taken to a resettlement site. Many were permitted to believe that they were being taken to a state farm to work for wage labor. Under these circumstances, it is not hard to understand that of the 373 who left the project area, almost all of them were from this urban-based population. It is estimated that approximately 250 of these were eventually hired on state farm operations of NRD and that 100 went back to the streets of Jima.

This project did not succeed in converting urban-based unemployed to farmers. It is possible that more would have remained had life been slightly easier. But probably not more than 20 percent would have remained even under easy settlement conditions given the wage labor alternatives which appeared shortly after project inception.

Of those who remained at the settlement, 85% were previously displaced migrant workers with peasant farm backgrounds. Approximately 15 percent of the present settlers were not

from farm background but decided to remain at the site and learn. It is believed that all of the present settlers will remain.

The motivation for those who remained on the settlement then is evident. In general, the ones who remained considered themselves displaced farmers. As their life as hired laborers became less secure and they were given the opportunity to resume farm life--one which obviously has potential for being much richer than in their previous location--they were willing to undergo the initial hardships in the hope for a better future. A small number with non-farm background apparently were received and supported by the farm community and also perceived the opportunity for a more secure life.

The experience of the Gehre project (280 settlers) supports the same conclusions. The settlers who remained at the site were mostly migrant workers who considered themselves displaced peasant farmers--former tenants, landless or evicted. They came from different parts of the country: 35% were from Wollo, 10% from Gojam, 20% Shoa, and only 15% from Kefa. Out of 140 remaining settlers, 100 had worked as permanent hired labor in the area for ten years or more. Settlers at this site claimed that they chose to remain at the settlement because they wanted to be farmers while those who preferred to be hired labor had defected to work for NRD or a road construction company. The people who remained as settlers viewed wage earning as slightly demeaning and something which they did only out of necessity.

In the Limu project, the same distinct populations are visible--those who want to be farmers and those who prefer wage labor. The project started when 2,000 Agaro unemployed demanded employment from the government. The government responded by offering settlement rather than jobs. Only 660 agreed to accept that farming alternative. Of these, 300 defected within the first month when NRD began hiring labor for the nationalized farms. Those who remained were from farm backgrounds, and felt that their future was more secure as farmers.

E. Settler Selection

1. General Criteria: Having now identified potential settler populations and addressed questions concerning background and motivation, the actual selection process from among these potential participants must be looked at. A nation-wide policy on settler selection to establish eligibility and priorities was issued in Proclamation #78.

a. Settler Selection Criteria*

The beneficiaries of settlement programs shall be persons of the following types:

1) persons with small or no land,

2) unemployed persons who reside in urban areas,

3) nomads desirous of being settled,

4) persons who need to be settled for various other reasons;

and they must be those "whom the Authority deems capable of participating in the program after consideration of age, health and interest." A draft "Land Settlement Policy" paper received from the Authority gives a more specific criteria:

1) a person willing and interested in making his living from agriculture,

2) a person with agricultural background,

3) a person from the age of 18-45,

4) a person who is healthy,

5) a person who is landless or owns a very small holding,

6) a person who can prove he has no other means of livelihood,

7) a person who will abide by the rules and regulations of the Authority and who will accept the obligations to develop.

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* These groups do not coincide exactly with those potential settlers listed for the Didessa project. The rural under-employed and displaced migrant workers would fall under "Persons with small or no land", while the lumpen and urban unemployed would fall under "unemployed persons who reside in urban areas". Nomads desirous of being settled is excluded from the Didessa project because there are no relevant nomad populations.

Priority will be given based on the following guidelines:

b. Priority

1) Priority of settlement will be given to persons residing in the general vicinity of the settlement site. (Proclamation #78)

2) The Authority shall in highly congested areas, give priority to those individuals from within, or from the regions surrounding the settlement project. (Draft policy paper)

2. Settler Selection for the Didessa Project:
Following the above general policy guidelines settler selection is proposed to proceed along the following lines.

First priority will be given to present residents of the settlement site and the valley in the immediately adjoining areas. It is estimated that approximately 250 families are found on the settlement site. Another 100 to 200 may be found in the adjoining regions of the valley, including some in Arjo Awraja on the Ilubabor side of the river. It is reported that the valley and surrounding highlands on both sides of the river are inhabitated by a surprisingly homogeneous population, which is basically undifferentiated by significant socio-economic characteristics. The valley residents on the Arjo side apparently do their trading through Chara rather than through Arjo so there is already much contact among valley residents.

The valley is considered the worst place to live in the region due to the lowland heat and diseases. Furthermore, it is even more isolated from transportation and markets than the surrounding highlands which are considered isolated by the country's standards. Because of its undesirability, however, tenancy terms were favorable and induced some of the poorer members of the rural community to accept homesteads there.

Because of the poverty of valley residents, it is expected that they will gladly participate in the settlement project. There are many examples in previous settlement efforts which indicate that such people will highly value the inputs and services from such a project and will undergo even considerable inconvenience to attain them. During the TAMS' feasibility study's social survey, this observation was supported by ample evidence of enthusiasm for the proposed development activity among valley residents.

If there are objections to participating in the project by any valley resident and if these objections cannot be overcome by peasant association persuasion and encouragement, then the objector will be assisted by the woreda level peasant association to find another suitable homestead in the area. It is doubtful that this action will be necessary, however.

After settling residents in the project site, second priority will be to meet the needs of peasants in the areas adjacent to the Didessa Valley. A more likely issue than lack of willingness to participate on the part of residents will arise from the fact that too many other people from adjacent peasant associations will probably wish to join the project. Because the entire area is suffering from isolation and lack of inputs to some extent, it seems likely that other area inhabitants will find the prospects of project participation very appealing. It is anticipated that the bulk of the participants will be from this area.

Settlers selected from the preceding categories will probably make good settlers. They come from peasant background and already have a knowledge of and commitment to the region. They can expect to receive encouragement and moral support from their relatives in the area. Furthermore, the social ties which will be created between the settlement and the surrounding area will be invaluable in creating regional integration and in disseminating new ideas from the project extension effort.

Third priority in settler selection will be given to suitable candidates among the migrant workers and urban unemployed groups identified earlier and from special groups, designed by provincial administrations, who need to be settled for other reasons. An attempt has been made to estimate the number of members of these populations in the three provinces which bound the settlement site. These estimates are very approximate.

a. Kefa: The Kefa Provincial Administrator has asserted that there are 18,000 potential settlers under his jurisdiction. As pointed out earlier, only a portion of these seasonal laborers will be suitable for settlement--that is, those with farm backgrounds who are willing to resume farming. Of those, it is not clear how many will give up their claim to the present sites of employment and move to the hot and isolated Didessa. A conservative guess is that 10 to 20 percent or 500 to 1,000 of those released this year could be recruited in the near future. However, as the project gets under way, and attracts people to the region to work

as hired labor on roads and other infrastructure development, experience has shown that there will be more and more demand for places in the settlement by members of this population who would initially be reluctant to participate. It is expected that more than 3,000 of the people called migrant workers and urban unemployed from Kefa will be available and suitable for settlement in the Didessa over the three years of settler recruitment.

Probably also included in the administrator's estimate of 18,000 potential settlers from Kefa are the 8,000 Jenjero families who have been identified for relocation and some 1,000 or 2,000 persons from Goma and Mana, two highly overcrowded woredas in Kefa.

b. Ilubabor: Major development problems in Ilubabor are not so obviously solved by settlement efforts. There were few commercial enterprises requiring hired labor and few centers of urban activity. The urban unemployed population is small--probably not more than 1,200 in the entire province. Of these, only a portion, possibly 30 percent, would be considered potential settlers with suitable background and interests. Furthermore, the provincial administration has had some success in persuading local peasant associations to absorb small numbers of lumpen. This seems a promising strategy which may further reduce the number of suitable urban unemployed available for incorporation in the Didessa project leaving possibly fewer than 300 potential settlers from this source.

c. Welega: The history of settlement activity in Welega demonstrate an understanding of the contribution it can make to the province's rural employment problems. Three projects started by private organizations are expanding and one major government endeavor on the Lower Didessa will begin settling several hundred families within the year. In view of this other settlement activity, the Welega administration will confine itself to designating potential settlers from Arjo Awraja, that closest to the settlement site.

Approximately 200 residents of the valley on the Arjo side and possibly 400 of the poorest members of the adjacent peasant association, will be invited to join the settlement under the first and second priority statements. To meet the other under-employment needs of the region, the Welega Administration would also like to include residents from three overcrowded woredas in Arjo Awraja: Debo, Leka Duleche and Arjo Woredas.

People from these regions are in need of more land and have made numerous requests to the government for help. The Administration feels that land in the valley should be used to help alleviate their problem. There may be as many as 1,000 volunteers for settlement from Arjo and possibly 300 total from the other two woredas.

F. Cultural Obstacles

A resettlement project of this type which draws on a wide variety of settlers implies a mixing of peoples with varying cultural backgrounds. This brings with it expectations of ethnic-conflict. In most instances so-called ethnic conflict can better be explained in other terms.

Historically, population transfers for settlement have been accompanied by granting favored status to one group, thus creating antagonism between groups. Unfortunately, this was often viewed as a problem of ethnic relations rather than seen for what it was--class conflict. There are numerous examples of successful ethnic integration both within a settlement and within a region when care was taken to see that all groups were treated equitably.

The establishment of peasant associations should keep class conflicts from arising. With rights of tillage awarded to the peasant association, there will be no preferential treatment offered to any one group. The peasant association and cooperatives should also aid in stemming cultural conflicts which might arise by representing a new social structure towards which loyalties can be directed. The success or failure of this idea is again one of the questions which the project will answer for future resettlement programs.

G. Communication Strategies

To facilitate settlement and land development plans at the local level, supporting programs in agricultural extension and demonstration are proposed. The agricultural extension program will be a variation of the successful results obtained at WADU settlements. Initially families would enter the scheme and be settled in villages of 100 families. Each village will be assigned a junior extension agent who will reside there and provide liaison with project and settlement staff. A higher link will be provided through senior extension agents assigned to each ten junior agents.

Communication will be facilitated as the junior extension agents will have a speaking knowledge of the Oromo language. The Ormomo people inhabit much of the surrounding area and will make up a majority of the settlers. Being able to speak the language of the area will allow direct communication with all of the farmers rather than only those able to speak Amharic.

The on-site availability of the junior extension agent will allow for visual demonstrations, corrective measures, and general aid in adapting to new agricultural techniques and methods.

Communications between the settlers and the LSA will also proceed via the Management Information Service (for a detailed description of the MIS see the Evaluation Section, page). One of its primary functions is the rapid and accurate reporting of project participant responses in cases where new behaviors are required. The MIS will identify problems which arise as a result of variations in the expected behavior or performance of the participants. This should act as an effective feedback mechanism to aid bottom-up participation and control, with the result that problems which arise for the settlers will be solved before they become unmanageable.

Aside from communicating new agricultural techniques, emphasis will be placed on the role of the peasant association in deciding what the overall goal of the cooperative is to be. Neither increased per capita income nor a better way of life will be stressed as rewards of the project. What will be stressed is the need for the peasant association to decide themselves how to best benefit from their labor--whether it be better schools, better health facilities, a higher income or more leisure--and to make decisions to bring these wants into being.

II. SPREAD EFFECTS AND DIFFUSION OF INNOVATION

A. Previous Settlement Projects: Lessons Learned

1. Failure: Several settlement projects in Ethiopia have failed as a result of attempting to settle people who did not want to be peasant farmers--notably ex-military, pastoralists, pensioners and hard-core urban unemployed. Attempting to establish people with non-farm backgrounds as peasant farmers is a risky venture. It is likely to require a high investment for education, training, indoctrination or rehabilitation.

A few settlements have failed for technical reasons, such as lack of reliable rainfall or drinking water. These problems could have been foreseen with adequate site investigation.

But by far the most pervasive reason for failure in settlement has been inadequate government commitment and lack of a coherent policy regarding settlement and its goals. This has especially accounted for the failure to settle a significant number of families and for the failure of settlement projects to contribute to healthy regional development. Because the government was not previously committed to a development strategy intended to benefit the poorest people, it is not surprising that notable accomplishments are rare.

2. Success: The limited success which has been achieved in settlement in Ethiopia can largely be attributed to the tapping of a powerful source of energy--settler motivation. There are a large number of Ethiopian peasants who presently suffer from lack of land or other essential inputs and who highly value the opportunity to gain access to them. This is most clearly demonstrated in the low cost schemes where destitute peasants underwent considerable hardship to open new land for farming. High motivation is evidenced in other schemes where peasants have come to places of settlement activity begging for admittance to the scheme, often waiting for months hoping to be selected.

This project has taken account of the failures and success of past resettlement programs and feels those problems which resulted in failures before are no longer in existence and the main ingredient of success--participant motivation--will play a strong role in settler selection.

B. Anticipated Spread Effects

Most of the sociocultural influence exerted by this project on the spread of settlement and improved farming methods outside of the designated project area, should be positive (sociocultural problems of spread within the project area have already been discussed). On a wide scale the skills and experience gained by the extension worker, in dealing with culturally mixed groups and peasant associations, will be of value to future resettlement schemes. On a more local level, the nature of the project favors spontaneous settlement in immediately surrounding areas. The diversity of the

settlers should allow for easier acceptance of "outside" farmers than one would expect from a group with already established social and cultural ties. Once spontaneous settlement occurs the spread of new farming techniques is greatly aided by the existence of the peasant associations. Once the settler joins the peasant association he or she will be bound by decisions made there and required to use the methods employed by the cooperative farm. This cooperative working relationship will provide the skills and techniques, which the project settlers have learned, to the "outside" farmers. As spontaneous settlement increases, new peasant associations and cooperative associations can be formed with methods and innovations, learned from their previous peasant association membership, serving as a basis for success.

III. SOCIAL CONSEQUENCES AND BENEFIT INCIDENCE

A. Access to Resources and Opportunities

The principal resource affected by the project is land, followed by the supportive inputs of agricultural technology, credit, storage and marketing. Water supplies will also be provided to those in the project center and the expected large town in the same vicinity.

Land - Land (free of tsetse and malaria) will be provided at the equivalent of 2½ hectares per farm family. While most of this will be farmed cooperatively, under the guidance of the peasant association, approximately ½ hectare will be available for personal use as a residence, home garden, and grazing area.

Credit, Marketing and Storage - On the assumption that settlers will arrive at the project without cash, credit will have to be available when required. The types of credit envisaged are: (1) food allowances until first harvest; (2) production loans; and (3) investment loans for tools and oxen. The extent to which credit is required will be alleviated somewhat due to paid labor opportunities in which farm families can engage as they have time available. It is anticipated that credit facilities will be greatly utilized. Farmers in this area recognize the value of agricultural credit and, if available, would use lending services to purchase oxen and other livestock should animal diseases be controlled. The use of credit for purchasing improved seeds, fertilizers

and insecticides is not understood. However, it would appear reasonable to assume that the existing societies which function for the shared benefit of members, when expanded into peasant organizations will provide group guarantors for the eventual credit services of EPID/MPP. Farm credit will be administered by a small project staff working through the peasant associations and the assigned junior extension agent rather than the individual farmers.

Initially marketing and storage will be handled by the project. Surplus produce will be hauled by Project tractor/trailor from farmer villages, at cost, to grain storage facilities at the Project Center. The road construction component of the project is also designed to facilitate the marketing of products as well as providing ease of access to the Project Area.

The effect this project has on the distribution of income (whether actual income or increased benefits) will depend largely on the extent to which these resources directly benefit the small farmer. Increased production does not necessarily lead to a better life for the farmers and may, in fact, benefit the urban centers more through the availability of cheaper food.

The opportunity offered by this project is fundamentally that of increasing agricultural production of peasants so that a better life can be achieved (as the peasants themselves define it). The opportunity is equally available to all of the settlers and differences in outcome will depend on the make-up of the individual peasant association and their ability to cooperate and function effectively.

B. Employment

The emphasis of the project is directed towards providing agricultural income earning opportunities to those who are poor, landless, or unemployed. The criteria for selection of resettlement participants has been established by the LSA and emphasizes that priority should be given to those with small or no land holdings or unemployed persons who reside in urban areas. For this particular project, plans have been initiated for selecting the first year's group of 2,000 families from among the rural poor in the area and other underemployed or unemployed rural peoples whose only potential source of income is coffee picking during a maximum of three months per year. The urban area (Jima) where the coffee pickers congregate seeking other employment during off-season has the worst unemployment problems in

the country. Recent estimates of 18,000 unemployed were given for Jima. Prior to actual farming, project development activities including road system construction, tsetse fly control, and clearance and operation of the Project testing and demonstration farm, would all be labor intensive and thereby afford sufficient opportunities to meet a large part of the family requirements until first harvest. While the employment opportunities in farming will provide work for both unskilled men and women, the prefarming opportunities will most likely be directed towards the men.

Indirect employment will also be generated as a result of handling and transport of agricultural produce, the establishment of stores and businesses in the area as a town develops, and the increased employment generated as demand for consumer goods and services increases.

C. Changes in Power and Participation

Drastic changes in power and participation have been occurring over the past year throughout the country as a result of the Public Ownership of Rural Lands Proclamation (1975). Land ownership was taken out of the hands of the large landowner and rights of tillage given to the small farmer. At the same time peasant associations were to be formed and a new line of power and participation established. (See Annex B, Exhibit 5) This new power/participation is just establishing itself within Ethiopia and the actual importance which the peasant associations are to play is yet to be realized.

A resettlement project, where a new society is being established, offers the greatest potential for these new methods to be adapted. Success of the project is heavily dependent upon settler participation from the very beginning. The creation of the necessary infrastructure, the creation of storage and marketing facilities within the project, the selection of and assistance for new families all demand participation and cooperation. However, if cooperation and participation are not forthcoming in the farming aspect of the endeavor, then all will be lost.

It is expected that the peasant associations will act as the main source of power; collecting taxes, deciding on allocation of receipts from crops, making requests to government agencies for help in social services, and influencing the general overall direction of the project. This is a chance for peasants to have a major say in their own future. However, this new

responsibility may take time. Time will be necessary for cooperation to begin and time is necessary for leadership to emerge, to gain experience and to gain confidence. So while it is programmed that the peasant associations will be the major power source in the area, it may be a while before they can respond effectively to this new responsibility.

D. Role of Women

1. Present Role

Since the settlers for this project will come from different locations and a mixture of cultural backgrounds, it is only possible to give a sketch of a typical Ethiopian peasant woman, as opposed to a more definite description of those particular women to be affected.

Statistical data reveal that 74 percent of the "economically active" population of Ethiopia is male and 26 percent female. This claim would have only been made due to traditional identification of women as housewives and mothers and through a definition geared to wage income. It is true that in comparison to their male counterpart rural Ethiopian women seldom do the initial farm work such as plowing or sowing the grain crops. However, women in the rural areas play an active and crucial role at home, on the farm, and in the market according to the customs of their respective ethnic groups. If the tasks of rural women were acknowledged within the context of division of real labor, the size of the "rural female economically active population" would probably be more or equal to that of the male.

The average peasant wife's domestic duties involve childcare, food preparation (which also involves gathering firewood or cow dung for fuel) and water provision. The family's daily supply of water must be carried in a large clay jar on her back. Time involved depends on the distance to the source as well as seasonal changes. Time involved in gathering fuel also varies greatly depending on its availability.

Food preparation requires processing the raw farm product to a cookable form. Grinding grains into flour is one of the most tedious and time consuming tasks. Women prefer to walk long distances to flour mills rather than grind by hand. When prepared, food and water must then be carried to wherever her husband is working. Other domestic chores include the washing

and weaving of clothes for the family. In many of these tasks she is aided by young girls in the family. While the children may lighten some of her burdens, they also increase the time necessary for others.

In addition to these basic responsibilities she is expected to help with farm tasks. The average peasant's wife will assist with the weeding, harvesting and winnowing. She will prepare the land for threshing. She may have complete responsibility for a small garden plot or work it jointly with her husband. If there are cattle, she is often responsible for them and is always responsible for milking. When the crop is harvested she is responsible for carrying the crop from the field to the dwelling place, then to market if there is a little extra for barter (large quantities for market are taken care of by the men via truck, bus or donkey). Women make more trips to the markets than men, in order to trade bits of produce for small quantities of supplementary foods such as eggs, butter, oil, salt, garlic, onions, coffee, berbere or other spices.

The peasant women may engage, as a sideline, in other activities which render cash income such as spinning or selling local beverages. As a final task the woman is required to indulge her husband each evening by washing his feet.

2. Potential Effects of Settlement on the Role of Women

Many of the benefits which will accrue to women as a result of the settlement project are related to improvements in the family income. The settler's wife will continue in a life similar to that which she lived before and similar to the life of other peasant women. Many of her domestic tasks may be lightened due to the villagization process resulting from resettlement. Access to markets will be facilitated both due to road construction and the establishment of villages. A water supply system at the center of the project area will lessen the time involved in daily water gathering for those women in the immediate vicinity. As peasant associations begin functioning outside of the project center, some type of water supply will be established within the cooperative farming units. Similarly the growth of villages should make grinding mills more prevalent.

While the length of time necessary for these tasks may be shortened, a heavier work-load, due to farming demands, may be imposed. However, part of the goal of such a development

project is to provide increased income earning opportunities for all members of the family, and thus it is to be expected that both the men and women will work harder. There are no systemmatic reasons to expect the women's burden to increase disproportionately to that of her husband.

Aside from the lessening of time involved in her domestic chores (which will probably end up being compensated for by increased farming responsibilities), there are other benefits which will accrue to the woman. These include:

a. Better chances for improving both her own and her family's health. As agricultural production is increased and a home garden established, the woman will be able to provide her family with a more plentiful and varied diet--a factor of great importance in the children's early years if they are ever to stand a chance of developing their full potential. At the same time the establishment of health clinics in the project area will provide facilities at closer hand than before--this is especially useful to the woman as far as mother/child health care.

b. The disruption of family relationships, due to occasional migration of the men seeking employment, will no longer occur. The husband will now be at home rather than away.

c. The potential for significantly changing the position of women in Ethiopia, however, is found in the special educational opportunities which could arise for girls as a result of the settlement project. Girls in rural Ethiopia typically have less access to the country's limited educational facilities than do boys. The settlement project will result in a relatively prosperous community which can afford to educate all of its children. Also since domestic tasks will require less time and the hectarage for farming is limited, the girls should have time available to attend school.

d. The resettlement/peasant association formation offers the greatest opportunity for developing the potential of women since it will be a new society based on recent proclamations of rural land ownership and peasant associations. The Public Ownership of Rural Lands Proclamation No. 31/1975 specifically gives reference to the equality of women in rights of tillage to land, "Without differentiation of the sexes, any person who is willing to personally cultivate land shall be allotted rural land sufficient for his maintenance and that of his family."*

* It should be noted, however, that land is allotted to the head of the family, which in most cases is the man. The woman can only be allotted land if there is no man to head the household.

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Provisions are made for women to hold land and hire labor if they are unable to till it themselves: "No person may use hired labor to cultivate his holding; provided that the foregoing prohibition shall not apply to a woman with no other adequate means of livelihood. . ." A later Proclamation to Provide for the Organization and Consolidation of Peasant Associations No. 71/1975 lists as one of the duties of the peasant association the establishment of women's associations. "The objectives, powers and duties of a women's association shall be the following:

1) to do everything necessary to ensure the rights of its members;

2) to establish mobile teams which will closely follow the political, economic and social problems of its members;

3) to establish professional associations;

4) to sue and be sued; to enter into contract and acquire property;

5) to draw up its internal regulations."

While these rights are allotted to all women in Ethiopia, the formation of a new society in the resettlement scheme, whose main organizational body is the peasant association, should provide more of an opportunity for this part of the proclamation to actually come into being, than might be true in an already established society where the woman's place and role has already been established.

e. The project will try to establish a better understanding of the role of the peasant woman in Ethiopia and the interplay which will occur between her and the Peasant Associations. This will be accomplished via the Management Information System which will, in studying participant responses and changes in behavior, consider separately the reactions of the peasant woman.

ENVIRONMENTAL IMPACT ASSESSMENT UPPER DIDESA REPORT[1/]

I. DESCRIPTION OF THE PROJECT: BACKGROUND INFORMATION

A. Reasons for the Project

1. Background

In response to accelerating population pressure in the highlands, the Planning and Programming Department of the Ministry of Agriculture (PPD/MOAF) in 1972 directed an inter-ministerial effort in carrying out a reconnaissance survey of the Southwest Region of Ethiopia to identify potential project developments. The purpose of this survey was to locate under-developed and largely unsettled areas whose apparent technical and economic potential deserved more attention in the Government's resettlement and agricultural development programs. Criteria for selection were areas that would offer attractive agricultural and livestock benefits and, at the same time, provide large tracts of Government-owned lands for settlement of indigenous groups and resettlement of peasant farmers from the overcrowded highlands. As a result of the 1972 reconnaissance survey, several areas in the Southwest Region were identified for more detailed study.

In 1973, the Government of Ethiopia requested USAID participation in a two-phase study of five areas selected from those identified. USAID, in 1974, contracted with Tippetts-Abbett-McCarthy-Stratton (TAMS) to carry out the study. The Phase I pre-feasibility survey of four areas (the fifth area deleted by the Interministerial Committee with USAID concurrence during the first week of Phase I activities) was completed in August 1974 upon submission of "Prefeasibility Report, Phase I Southwest Development, USAID and GOE", August 1974.

The Interministerial Committee accepted the Pre-feasibility Report in September 1974 and the GOE requested USAID to provide continuing support for Phase II activities which comprised in depth studies of the two recommended project sites, the Upper Didesa and Gambela. Mobilization for Phase II work was initiated in December 1974.

As a result of the TAMS Phase II report, as amended, the GOE requested that a project be initiated in the Upper Didesa Valley that would establish a comprehensive model from which tested hypotheses about settlement can be replicated in other lightly or more populated areas of Ethiopia.

1/ Prepared by Tippets-Abbett-McCarthy-Stratton, May 1976

2. Project Goal

The primary project goal is twofold: 1) to settle up to 6,800 landless farmers and farmers from overcrowded highlands into 17 peasant associations within a selected net area of 17,000 hectares in the Upper Didesa River Valley thereby enabling them to: a) enjoy a higher quality of life; b) make the transition from a subsistence level to the cash economy with incomes well above the national economy for small farmers in Ethiopia; and c) participate in social and political decision making at the basic, or "grass roots" level of Ethiopian Government; and 2) to increase agricultural production from its present level of less than 250 tons per year (less than two percent of the Project Area now under cultivation) to over 39,000 tons of grains and pulses annually.

A sub-goal is to find the best means of opening up new lands for settlement of large numbers of rural poor.

Among the potential opportunities for advancing agricultural development and promoting the goal cited above, is the opening of unpopulated or under-populated, but fertile, lowland areas for settlement and crop and livestock development. Utilization of new settler areas with development potential will serve as a means to increase domestic food production and distribute land and farm income more equitably. Settlement in new areas will also help alleviate population pressure to some extent in a few of the overcrowded highland regions of Ethiopia and provide new employment opportunities. The purpose of the project supports the goals cited above through the initiation of planned settlement and congruent agricultural development in a potentially productive, lightly populated lowland area.

The project is viewed by GOE and USAID as a "test bed" for settlement projects in low lying rainfed areas. If the project proves the possibility of low cost operations, vast areas of land will be made available. Successful implementation of the Didesa Project would have a decisive effect on GOE's rural development strategy in the coming decades.

B. Project Activities and Features

1. Recommended Land Use

The Project Area comprises virtually unsettled

and uncultivated land which offers opportunities to devise optimum sized farm models on more advanced practices than presently used. The proposed land use for the project is as follows:

	Agricultural Land (Ha.)	Project Farm and Non-Agricultural Land (Ha,)
Farming - red/brown soils	17,000	-
Black Soils[1/]	8,000	-
Grazing and Forest	-	7,300
Major Settlement, Project Farm & Infrastructure	-	2,000
Totals	25,000	9,300

2. Proposed Settlement Program

Settlement plans were designed within the context of Government objectives and were based on and related to, ecological conditions, in particular the soil characteristics, in the Project Area. The following schedules of settlement and land development are proposed for the 17,000 hectares of red/brown soils:

Project Year	Red/Brown Soils	
	Settlers	Hectares
1	2,000	5,000
2	2,400	6,000
3	2,400	6,000
Total	6,800	17,000

Thus, a total of 6,800 farm families would be settled in Peasant Association units and be engaged in agricultural production by Project Year Three, and by Project Year Four, a total of 17,000 hectares would be under cultivation.

1/ Deferred for future utilization based on experimentation and experience gained during the initial years of project implementation.

The first 2,000 settlers would actually start arriving on site during the last quarter of Year Zero the Year Two settlers during the last quarter of Year One, etc., to enable orientation, formation of peasant associations, farming assignments, home building, land clearing, and other pre-cultivation activities.

No serious problems are anticipated in finding sufficient settlers for the Project. In general, present residents of the valley and those with valid traditional claims would be given priorities in relocating to the newly formed Peasant Associations. New settlers would be recruited from among the large pool of landless farm laborers in the Jima area and from among families in overcrowded highland areas in the Southwest Region. Project development activities, including road construction, tsetse fly control, and clearance and operation of the Project testing, demonstration and seed multiplication farm, would all be labor intensive and thereby afford sufficient opportunities to meet a large part of family requirements until first harvest.

If the project purpose is to be accomplished, it is necessary that the following conditions should exist by the end of Year Four. By this time, 6,800 families would have been settled on 17,000 hectares of land and would be involved in viable, self-sustaining agricultural production increasing their net per capita income to about E$400. Settlement would have been possible due to the control of human and animal diseases which now tend to make much of the area uninhabitable. Surplus production would be able to reach the markets via the upgraded and newly constructed road system which connects the project area to all weather roads. For the agricultural production to have reached its expected level, it is also necessary that peasant associations (17 proposed by Year Four) would have been established and be functioning as organizations through which public services can be supplied.

It is reasonable to assume that the following conditions, outside of the influence of the project, would prevail:

(1) The indigenous groups and highland farmers would have responded favorably to inducements to settle in the new area;

(2) Those who have settled were able to resolve the sociological differences resulting from the mixing of various tribal groups; and

(3) Much of the burden for continuing the Project has been taken from the Land Settlement Authority (LSA) due to the effectiveness of this organization in co-ordinating with outside agencies to work in the Upper Didesa Region.

3. Agricultural Development Plan

As was discussed in A 2, above, the Project is to settle 6,800 peasant farmers in Peasant Association units of 400 families each (1,000 hectares) over a three-year period. Two hundred hectares would be for villages, rural center, home gardens, community grazing and rural center. The remaining 800 hectares would comprise the production farming area.

The recommended land use for the Project Area, together with proposed cropping patterns, was discussed in 4, above. The simplified cropping pattern selected for farming in each peasant association area is:

Maize	-	400 hectares
Sorghum	-	400 hectares
Chick peas	-	400 hectares interplanted with maturing maize

Production estimates for the peasant association model are summarized in Table I-1. It is noted that yields are assumed to build up to full production over a period of three years in each peasant association.

The total operating costs for each model peasant association were arrived at by summing direct production costs, indirect costs, and interest on production loan (extended at one percent per month). Direct production costs include seedbed preparation (by Project custom machine services on 400 hectares in Peasant Association model Year One); seed; fertilizer; spray chemicals; bags; and input and output hauling. Indirect costs include animal health service provided by the Project and repair and maintenance of farm equipment.

Total estimated operating costs for the model peasant association are summarized in Table I-2.

Table I-1

Land Use, Production and Sales Data Sheet
Model Peasant Association

	Model Year				
	1	2	3	4	5on
Land Use (ha)					
Maize	200	400	400	400	400
Sorghum	200	400	400	400	400
Chick peas (1)	200	400	400	400	400
Other (2)	200	200	200	200	200
Total	600	1000	1000	1000	1000
Yields (quintals/ha)					
Maize	15	25	30	30	30
Sorghum	10	15	20	20	20
Chick peas	6	7	8	8	8
Production (tons)					
Maize	300	800	1100	1200	1200
Sorghum	200	500	700	800	800
Chick peas (3)	-	120	260	300	320
Home Consumption (tons)					
Maize	120	100	60	40	40
Sorghum	13	13	13	13	13
Chick peas (3)	-	26	26	26	26
Surplus Production (tons)					
Maize	180	700	1040	1160	1160
Sorghum	187	487	687	787	787
Chick peas (3)	94	94	234	274	294
Price (E$/ton)					
Maize	175	175	175	175	175
Sorghum	270	270	270	270	270
Chick peas	-	275	275	275	275
Sales (E$000)					
Maize	31.5	122.5	182.0	203.0	203.0
Sorghum	50.5	131.5	185.5	212.5	212.5
Chick peas (3)	-	25.9	64.4	75.4	80.9
Total Sales (E$000)	82.0	279.9	431.9	49.9	495.4

(1) Interplanted with maize prior to maize harvest.
(2) Villages, grazing areas, home gardens, etc.
(3) Sales in January

Table I-2

Operating Cost Summary
Model Peasant Association

	Model Year					
	1	2	3	4	5	6on
Direct Production Costs						
Maize (E$/ha)	144.42	86.70	104.65	122.10	140.55	140.55
Total (E$000)	28.9	34.7	41.9	48.8	56.2	56.2
Sorghum (E$/ha)	130.30	72.58	90.53	90.53	90.53	90.53
Total (E$000)	26.1	29.0	36.2	36.2	36.2	36.2
Chick peas (E$/ha)	34.21	34.21	34.21	34.21	34.21	34.21
Total (E$000)	6.8	13.7	13.7	13.7	13.7	13.7
Bags & Hauling (E$000)	6.6	23.2	35.5	40.2	40.6	40.6
Total Direct Costs (E$000)	68.4	100.6	127.3	138.9	146.7	146.7
Indirect Costs (E$000)	2.0	5.4	8.3	11.5	13.0	14.0
Interest on Production Loan (E$000)	6.2	7.7	9.2	9.9	10.6	10.6
Total Operating Costs (E$000)	76.6	113.7	144.8	160.8	170.3	171.3

The principal investment expenditures to be made by the farmers would be for housing and storage; oxen and cattle; oxen implements; sprayers; and hand tools. The estimated investment schedule is summarized in Table I-3.

Land would be allocated on the basis of peasant associations. As noted earlier, each peasant association would have within its boundaries a total of 1,000 net hectares of arable red/brown soils, on the average. The total geographic area assigned to each peasant association would vary depending on non-arable lands and black soils unavoidably included to obtain the above net hectarage of red/brown soils.

A rotation system involving maize, sorghum and chick peas has been established for an aggregated 13,600 hectares. It is expected that yields would build up to full production over a period of three years in each Peasant Association. Total aggregated production during the four-year Project implementation period would then be as follows:

Production (metric tons)	Crop Year			
	1	2	3	4
Maize	1,500	5,800	12,100	17,400
Sorghum	1,000	3,700	7,700	11,200
Chick peas	-	600	2,020	3,780

Inputs to be supplied to peasant associations by the Project organization, in order to meet the production levels in (1), above, would include direct production items (seed, fertilizer, insecticides); food allowance to carry to first harvest; hand tools; oxen implements; bags; and back pack sprayer. Livestock inputs are discussed in e., below. For the entire life of each peasant association direct production items would be supplied on short-term credit (in kind production loans). Food allowances would be supplied on credit and repaid after first harvest. The first contingent of hand tools would be supplied on credit and repaid within 14 months. All other items would be supplied and paid for from harvest proceeds. Production inputs would be hauled to each peasant association by the project organization for distribution within the co-operative farming areas. The total quantities and costs of these inputs are tabulated below for the four-year Project implementation period.

Table I-3

Investment Schedule
Model Peasant Association

Item	Units	Unit Price (E$)	Outlay (E$000)	Life (Years)	Model Year 0	1	2	3
Tukuls	400	100	40.0	10	-	-		40.0
Storage	8	500	4.0	10	-	-	-	4.0
Oxen	135 pr	280	37.8	N/A(2)	-	-	37.8	-
Cattle	200	90	18.0	N/A(2)	-	-	-	18.0
Plows, Ropes & Yokes	135 sets	10	1.4	4	-	-	1.4	-
Back Pack Sprayers	40	125	5.0	4	-	5.0	-	-
Hand Tools	200 sets (1)	33	6.6	3	1.8	2.4	2.4	1.8
Totals(rounded E$000)					1.8	7.4	41.6	63.8

Item	Model Year 4	5	6	7	8	9	10
Tukuls	-	-	-	-	-	-	-
Storage	-	-	-	-	-	-	-
Oxen	-	-	-	-	-	-	-
Cattle	-	-	-	-	-	-	-
Plows, Ropes & Yokes	-	-	1.4	-	-	-	1.4
Back Pack Sprayers	-	5.0	-	-	-	5.0	-
Hand Tools	2.4	2.4	1.8	2.4	2.4	1.8	2.4
Totals (rounded E$000)	2.4	7.4	3.2	2.4	2.4	6.8	3.8

(1) 2,200 units at E$3.00 purchased over 26 months.
(2) Oxen and cattle would be replaced from Peasant Associatin herds.

Item	Year 1 Quantity	Year 1 Cost (000)	Year 2 Quantity	Year 2 Cost (000)	Year 3 Quantity	Year 3 Cost (000)	Year 4 Quantity	Year 4 Cost (000)
	MT	E$	MT	E$	MT	E$	MT	E$
Seed	115	31	368	101	644	176	782	212
Fertilizer	100	72	370	263	770	546	1145	813
Insecticides								
Dust	24	45	77	142	134	249	163	302
Liquid	4 CM	9	13 CM	29	22 CM	50	27CM	61
Hand Tools	-	21	-	37	-	47	-	37
Ox Implements (Sets)	-	-	675	6	810	8	810	8
Sprayers	200	25	240	31	240	31	-	-
Food Allowance	-	101	-	19	-	119	-	-
Bags (000)	13	18	86	36	197	197	306	306
Totals		322		814		1,423		1,739

Peasant Association production farming areas would be surveyed and boundaries staked out by the Project organization. Clearing of these farming areas would be by hand on a cooperative basis by each peasant association. With technical assistance from the Project and through utilization of the extension services provided to the peasant associations, soil conservation measures, such as contour plowing and terracing where required, would be observed. In the first year, seedbed preparation of one half (400 hectares) of each association's production farming area would be prepared by project machinery pool mechanized equipment as discussed later. Thereafter, all seedbeds would be prepared utilizing oxen power. All other operations, including fertilizing, planting, weeding, harvesting, threshing and bagging would be done by hand.

4. Livestock and Animal Health Services

Early in the second year of its participation in the project, each peasant association would acquire 270 oxen (135 teams) for which it would receive two-year term credit, and during its third year of participation it is anticipated that each association would acquire an average of roughly 200 head of cattle (192 cows and 8 bulls) with its own resources. Livestock are readily available for acquisition in the proximity of the Project Area. The expected build-up of these inputs, on a project-wide basis, during the four-year Project implementation period is tabulated below.

	Crop Year					
	1978		1979		1980	
	No.	Cost (E$000)	No.	Cost (E$000)	No.	Cost (E$000)
Oxen	1,350	189	1,620	226	1,620	226
Other Cattle	-	-	1,000	90	1,200	109

It is anticipated that each peasant association would build up its cattle herd to an average size of about 1,500 by Year Six of its participation in the project. The composition of the average herd, which would be maintained through sales commencing in Year Seven, would be roughly as follows: 270 oxen; 400 cows; 200 three-year olds; 400 two-year olds; and 230 one-year olds.

During the first year of settlement by each peasant association one half of their land will be plowed by tractors from the machinery pool discussed later. Thereafter, all 800 hectares of each peasant association's production cropping land will be worked by oxen.

The infrastructure proposed to be provided for livestock would comprise three livestock health facilities (two provided in the four-year project implementation period) strategically located through the Project Area. Each livestock health facility would include:

3 holding/quarantine areas of 25 hectares each
1 receiving pen of 10 hectares
1 building area of 2 hectares
1 dip/holding area of 4 hectares
1 sick pen area of 4 hectares
1 dip/crush and alley way of 5 hectares

The first livestock health unit would be completed and staffed by the beginning of Year Two. The second livestock health unit would be in place by May of Year Four with the third unit available in Year Eight.

It is not practical, at this time, to quantify with any degree of accuracy the number of innoculations, dips and treatments required each year. Facilities provided are based on expected animal population and would be modified as required during project implementation.

Proposed staffing for each livestock health unit would include:

Personnel	Year 2	Year 4	Year 8	Total
Animal Health Assistant	1	1	1	3
Laboratory Assistant	1	1	1	3
Secretary	1	1	1	3
Clerk	1	1	1	3
Vaccinator	1	1	1	3
Dip Attendant	1	1	1	3
	6	6	6	18

5. Project Farm

Key elements of support to the settlers would come from the proposed project testing, demonstration and seed multiplication farm. Expert technical direction and advice would emanate therefrom in such areas as management, engineering, agronomy, and entomology. Results of Institute of Agricultural Research experimentation elsewhere would be tested under local ecological and climatological conditions. Improved oxen-powered farming methods would be demonstrated; seed varieties found to be adapted would be multiplied and distributed; and area would be provided for training extension agents so that all settlers could benefit from the farm's activities.

The Project Farm, covering an area of about 800 hectares, would be established in Year One. During Project Year Two farm development would still be going on with the initiation of crop trials. Year Three should see the farm well developed and conducting a wide range of adaptive trials along with the first seed multiplication efforts.

The Project Farm would be managed and operated by personnel provided by the Ministry of Agriculture and Forestry under agreement with the Land Settlement Authority. All operations would be under the direction of the Project Director. The primary roles of the Project Farm would be: 1) seed trials; 2) demonstrations; 3) seed multiplication; 4) development of improved cultural methods, including the deferred black soils; 5) grazing trials; 6) nursery trials; and 7) extension agent initial and follow-up training.

Clearing of the farm area will be carried out by hand on a labor intensive basis in conjunction with the tsetse fly control program described later.

Seed multiplication would be effected by fully mechanized means. Demonstrations of improved cultural methods would require oxen and oxen implements improved and developed through experimenation. Special attention would be paid to developing methods whereby the deferred black soils could be made productive through ox-power seed bed preparation.

Housing and other buildings would be constructed under project supervision utilizing locally hired skilled and unskilled labor. Local materials (stone) would be utilized and construction would be of mortared masonry with corrugated metal roofing and glazed windows. Fences and roads would be carried out by the project on a labor intensive basis, as would weeding and harvesting operations.

It is impractical to project numbers, types and amounts of seed trials, etc., at this time; however, a detailed work plan for the farm would be prepared by the middle of Year Three.

Staff inputs from GOE would be as follows from Year One onwards:

Farm Manager	1
Technical Assistance	2
Secretary	1
Storekeeper	1
Mechanic	1
Tractor Drivers	2
Tractor Driver Helpers	2
Driver	1
Labor as required	

Physical inputs would be as follow:

Item	Year 1	Year 2
Tractor, 79 hp	1	1
Plow, 4-disc	1	1
Disc Harrow, 11-ft.	1	1
Planter, 4-row	1	1
Ridger, 4-row	-	1
Trailer, 4-ton	1	1
Vehicle, pickup, 4-WD	1	-
Oxen	4	-
Oxen and Hand implements (sets)	2	-
Back-pack sprayers	4	-
Miscellaneous tools	200	-
Staff Quarters	3	-
Office and Shed	1	-
Roads & Fences	10 km.	-

6. Extension Services

To facilitate settlement and enable realization of land development plans and surplus agricultural production, a supporting program in agricultural extension is required.

The agricultural extension program would be carried out by EPID under agreement with the Land Settlement Authority and would be a variation of the successful results obtained at WADU settlements. Senior agents would be assigned directly from EPID and would assist in training the junior agents who would be recruited locally within the Project region. The initial contingent of senior agents (two) should be on board not later than October of Year Zero.

Farm families would enter the scheme and be settled in village units of 100 families (four village units forming one peasant association). Each village unit would be assigned a junior agent who would reside in the village, provide year-around advice on cultural methods, assist in organization of cooperative farming methods, and provide liaison with Project and settlement staff. One senior agent would be assigned to supervise approximately ten junior agents. After two years the ratio would be reduced to 200 settlers to one junior agent for an additional two years. The Project extension program would then be phased out, after which the EPID Minimum Package Program would provide normal services.

The technical package to be passed on to the peasant association farmers would be adequate to ensure planned production levels and, at the same time, sufficiently simple to be accepted and implemented. Generally, the package would comprise improved seed varieties, fertilizer, insecticides, proper planting depth and seed spacing, proper and timely weeding, harvest timing, hand threshing techniques, and (gradually, over a period of time) introduction of improved oxen implements as they are developed through Project Farm experimentation.

It is impractical at this time to project details on farmer training or numbers and types of demonstration plots; however; a detailed work schedule for the extension services program would be prepared early in Year One.

Proposed requirements for total numbers of senior and junior agents to be "on site" are as follow during the four-year project implementation period.

	Project Year			
	1	2	3	4
Junior Agents	20	44	58	46
Senior Agents	2	4	6	5

Physical input items, to be provided by the project, would include senior agent staff housing built to specifications as mentioned under 5, above, (junior agents would house themselves in peasant association villages), four-wheel drive vehicles and bicylces; following is the planned schedule for providing these items:

Item	Project Years				
	1	2	3	4	Total
Vehicles, 4-WD	2	-	-	-	2
Bicycles	20	24	14	16	74
Housing Units	4	1	1	-	6
Office & Store	1	-	-	-	1

7. Machinery Pool

It is proposed that project machinery would prepare the first year's seedbed for each peasant association by plowing and discing one half of its production cropping land as follows:

Number of PA's	Hectares per Project Year			
	1	2	3	Total
5	2,000	-	-	2,000
6	-	2,400	-	2,400
6	-	-	2,400	2,400
17	2,000	2,400	2,400	6,800

It should be noted that the machinery pool would cease functioning by the end of Project Year Three. Subsequently the machinery would be utilized elsewhere by the GOE; consequently, the depreciated value of all equipment would be credited to the Project in Year Four.

Farm machinery would be procured, operated and maintained by the Project. The central pool would be located at the Project Farm; however, during seedbed preparation, the

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machinery would remain on site in the field.

Custom services would be provided to the peasant associations at hourly costs which were computed to include capital recovery, operation and maintenance, spare parts, insurance and downtime. These hourly costs for the various custom operations, which would be provided in kind and recovered as part of production loan recovery after first harvest sales, would be approximately as follow:

Operation	Cost per Hour (E$)
Plowing	15.87
Discing	18.94
Hauling	16.12

Machinery use would be scheduled by the settlement officer working through the senior extension agents.

The following items of farm machinery would be required for the preparation of first year seedbeds in each peasant association as it comes on stream:

	Total Numbers Required			
Item	Year 1	Year 2	Year 3	Year 4
Tractors, 79hp	7	8	8	0
Plows	7	8	8	0
Disc Harrows	7	8	8	0
Trailers	7	8	8	0

8. Credit, Storage and Marketing

On the assumption that settlers would arrive at the Project without cash, credit would have to be available when required. The types of credit envisaged are: 1) food allowances until first harvest; 2) production loans; and 3) investment loans for tools and oxen. The extent to which credit is required would be alleviated somewhat due to paid labor opportunities in which the farm families can engage as they have time available.

Farm credit would be administered by a Project staff working directly through the peasant associations and the assigned extension agents, not with individual farmers. Food allowances would be provided at the time settlers arrive on site and be recovered from the peasant associations after first harvest. Crop production loans (assumed to extend throughout the life of the Project) would be made yearly prior to the first and second season crop operations as needed to each asso-

ciation and recovered upon each season's harvest sales. Loans for hand tools (hoes, shovels, sickles, etc.) would be made in kind as the associations are formed and recovered after first harvest sales. Livestock loans would be made to associations for purchase of oxen early in the second year of operation and recovered over a two-year period. Following are the anticipated terms for recovery of the above loans; however, these may change depending on the GOE policy at the time of implementation.

Type of Loan	Term	Interest
Food Allowance	10-14 months	1% per month
Tools & Implements	14 months	10% per year
Crop Production	2-11 months	1% per month
Livestock (Oxen)	2 years	10% per year

The project staff for administering credit would be as follows, commencing in Project Year Zero.

1 Credit supervisor
1 Secretary
1 Bookkeeper

The estimated loans, recovery and annual input requirements for the revolving loan fund, during the four-year implementation period, are summarized below:

	Project Year					
	0	1	2	3	4	Total
	(E$000)					
Loans made	29	424	1,078	1,617	1,735	4,883
Recovery	-	-	418	983	1,633	3,034
Annual Inputs	29	424	660	634	102	1,849

The storage structures would comprise rodent-proof, dry storage capacity equal to 25 percent of surplus grain and pulse production constructed in units of 1000-ton capacity under project supervision by locally hired skilled and unskilled labor. Each unit would be a one-story structure with a floor area of 600 square meters. Construction would be of native stone mortared masonry with corrugated metal roofing and glazed windows.

The project would act as agent and sell to the Agricultural Marketing Corporation and/or other buyers. It is anticipated that all surplus maize, sorghum and chick pea production would be sold within the Project region (average 190 kilometer haul, which average would include Addis Ababa).

The proposed schedule for constructing and equipping grain and pulse stores, during the four-year implementation period, is as follows:

Project Year	No. of Stores
1	1
2	1
3	3
4	3
Total	8

Other input items would be a truck scale and three housing units for staff constructed of the same materials as grain storage units (all in Project Year One).

The project staff for administering storage and marketing activities would be as follows, commencing in 1977:

1 Supervisor
1 Secretary
1 Bookkeeper

9. Surveying and Mapping

It is essential that either photogrammetric mapping or topographical ground survey be carried out and contour maps prepared of the entire area by early in Project Year One. These maps are required to enable layouts of village sites, cooperative farms, roads, project center water supply, the project farm, and other items of infrastructure. Three ground survey parties would be required so that field work can be completed in six months.

On the basis of Peasant Association layouts made on the contour maps, boundaries would be staked out during Project Years One through Three in accordance with the rate of settlement during these years.

The surveying work required includes cross sections and subsequent contour mapping of the entire project area at one meter intervals, except on the steeper lands; boundary marking of the peasant association villages and rural centers; and farm boundary marking in peasant association. Survey parties would be required on the following schedule:

Job	Project Years		
	0-1	1-2	2-3
	(Number of Parties)		
Contour Mapping	4	-	-
Boundary Marking	3	3	3

Note: 6 months field time per year for all parties.

10. Roads

Both external access and an internal project road network are required to enable a smooth flow of farm inputs to the peasant associations and a means of transporting surplus production to outside regional markets. External access (through up grading the existing track) would be provided from the national primary road system at Bedele. The internal project road net is kept to a minimum and is so located as to provide road access to within five kilometers of each peasant association. Peasant associations would be encouraged, through cooperative effort, to tie their respective villages and service centers in to the project roads. With the exception of one bridge crossing the Ambelta River (the major tributary to the Didesa), all stream crossings would be by paved ford.

Labor intensive methods (except for the bridge) under project supervision would be used in upgrading and constructing the above roads with a minimum of equipment (one dozer, one grader, one dump truck, and one pick-up) leased from the Ethiopian Roads Authority (ERA) or from a private construction contractor. The estimated force required for road work would be as follows commencing the last quarter of Project Year Zero and terminating the second quarter of Project Year Three.

Supervisor	1
Assistant Supervisor	1
Foreman	4
Survey Party	1
Equipment Operators	2
Drivers	2
Mechanic	1
Carpenter	1
Masons	2
Clerk	1
First Aid Man	1
Laborers (average)	500

The rural, or tertiary, road standards proposed for the Project would be as follow:

Right-of-way-Requirement	20.0 m.
Roadway Platform Width	4.0 m. 1/
Side Ditches	
Side slope	2:1
Depth	0.75 m.
Embankment slope	2:1
Select Material Surfacing 2/	12.5 cm.
Maximum Gradient	10%
Minimum Curve Radius	20.0 m.
Design Speed	25-40 kph

For the Ambelta River bridge, Ethiopian Roads Authority (ERA) standard concrete bridge drawings are proposed to be used as the basis for design and construction. ERA standards are based on AASHO and IBRD standard specifications. The primary standards for this bridge are proposed as follow:

Length	30.0 m.
Curbto Curb Width	4.0 m.
Full Deck Width	4.5 m.
Spans	2
Design Load	H-20-516

1/ Platform widened to 6.0 m. at 500 m. intergals for passing; length of full two-lane passing section (excluding transitions) not less than 20 m.

2/ Only where in-situ material is of unsatisfactory strength and on steep grades.

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As stated earlier, other tributary crossings would be by paved ford (culverts were ruled out due to high short duration flows which render culverts uneconomical) constructed of mortared masonry cribs; ample native rock is readily available for this purpose.

The proposed road construction schedule is as follows:

	Project Year			
	1	2	3	Total
	1/	2/		
Kilometers per year	50	20	15	85

11. Water Supply

A potable water supply system is proposed to be designed and constructed for the Project Center, the Project Farm, and the expected town. Provision of village water supplies would be the cooperative responsiblity of the peasant associations with technical advice provided by the Project organization. These village water supplies would be dug wells, if groundwater is present in sufficient quantity near the surface, or small earthen dams across minor waterways to carry through they dry season when many tributary streams dry up.

Estimated water requirements, based on a consumption of 10.6 gallons per capita per day domestic use plus 2.6 gallons per capita per day for commercial and other uses are summarized as follows:

Project Year	Estimated Population	Water Requirements (000 gals)
1/		
2	4,000	9,640
3	7,000	33,730
4	10,000	48,180
5	14,000	67,450
6	18,000	86,720
7 on	20,000	96,360

1/ 50 kilometers upgrading and 35 kilometers new roads

2/ 10 kilometers upgraded last quarter of Year Zero

1/ July-December

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The project water supply facility would be designed the first half of Project Year One; construction would start in October of Year One (by direct labor); and the facility would become operational by July of Year Two. The source of supply would be the Didesa River from which water would be pumped via a 350-meter pipeline to a settling basin and reinforced concrete reservoir. The water would be chlorinated manually in the reservoir. Users would collect and pay for the water at the reservoir.

The facility would be operated by the Project at least during the four-year implementation period; however, continued operation and maintenance should eventually be taken over by the future municipality.

To meet the demand for up to 10,000 users, the required pumping capacity would be about ten liters per second 12 hours per day. Power would be supplied to two centrifugal pumps by two direct drive diesel engines of approximately five horsepower each. One standby pumps and one standby engine would also be provided.

The following input items would be required in FY 1978:

Centrifugal pumps	3
Diesel engines, 5 hp	3
Pipeline, 3"	700 m
Settling basin, 600 m^3	1
Reservoir, 300 m^3 capacity	1
Pump house	1
Staff Quarters	2

Water would be charged for by having an attendant at the reservoir; the rate should be such as to cover annual operating and maintenance costs.

12. Tsetse Fly Control

Tsetse fly control is prerequisite to successful Project implementation to prevent the incidence of human and animal trypanosomiasis. In general, the proposed control

measures include: 1) cleared buffer zones at the upstream and downstream project boundaries to an elevation of 1,500 meters; 2) cleared tributaries within the Project boundary; 3) cleared strips through the riverine forest to the Didesa River; 4) cleared project farm area; 5) cleared project center area; and 6) annual spraying of buffer zone fringes, tributaries, fringes of riverine forest along the Didesa River and fringes of cleared strips.

Estimated areas cleared by the Project during the four-year implementation would be as follow:

	Project Year				
	1	2	3	4	Total
	(Hectares)				
Buffer Zone Cleared	11,500	-	-	-	11,500
Tributaries Cleared	200	-	-	-	200
Didesa River Strips Cleared	25	25	25	25	100
Project Farm and Other Cleared	500	500	-	-	1,000
Total	12,225	525	25	25	12,800 1/

The conventional technology of clearing and spraying was proposed since other measures, e.g. introduction of sterile male flies, are not yet perfected for practical application. Both the initial work and annual maintenance would be carried out by the project on a labor intensive basis through hired day labor.

Tributary, buffer zone and strip clearing would be carried out during Project Year One. The downstream project boundary buffer zone would be about 15 kilometers long by 5 kilometers wide (7,500 hectares), and the upstream buffer zone would be approximately eight kilometers long by five kilometers wide (4,000 hectares). Tributary clearance would total some 200 hectares and Didesa River access strips about 100 hectares. Other cleared areas would total approximately 1,000 hectares.

1/ The rest of the Project Area would eventually be cleared by settlers on a cooperative basis.

The estimated annual labor requirement for initial clearing and maintenance follow:

	Project Year			
	1	2	3	4
	(person months)			
Skilled	60	12	12	12
Unskilled	8,000	1.040	1,000	960

13. Public Services

There are presently no public services in the project area. In addition to the project implemented infrastructure already described, there are certain services, which would be provided by other GOE agencies, requisite to successful project implementation, including malaria control and health; education; and police. Determental effects which would occur should these services not be provided would include: 1) endemic malaria, animal trypanosomiasis, the probability of human trypanosomiasis, and other depilitating diseases which would lower productivity and cause a high rate of mortality and out-migration; 2) illiteracy, resulting in lack of incentive for high production and improved quality of life and inability to carry out peasant association functions; and 3) insecurity through lack of police to ensure law and order.

The above services should be provided by the appropriate GOE agency by agreement with the Land Settlement Authority (through its Board of Directors) on the following schedule during the four-year Project implementation period.

		Project Year				
Service	Responsible Agency	1	2	3	4	Total
Malaria Control	Min. of Public Health	1	-	-	-	1
Health Stations	Min. of Public Health	1	1	1	-	3
MFE Schools	Min. of Education	-	5	-	6	11
Police Sub-Station	Min. of Interior	-	1	-	-	1

Required inputs to provide these non-project services are included here in view of their essentialness to successful project implementation. Costs of these inputs were not included as project costs since the services would be provided by other GOE agencies from their budgeted funds as arranged by the "Board" of the Land Settlement Authority.

Over the first ten years of Project implementation, the total population in the Project Area is expected to increase to a total of some 60,000 of which 30,000 would be farm families.

Malaria Control - is proposed to be advanced both by spraying and by widespread dissemination of drugs. The program would be initiated in Project Year One and continue through the 20-year period of analysis.

Clinical Medicine - would be provided by three health stations. It is noted, however, that the projected population of 60,000 would justify establishment of a health center. The first health station is scheduled to be established in Year One, the second in Year Two and the third in Year Three.

The educational facilities planned include 17 minimum formal education (MFE) schools (grades 1 through 4) with a capacity of 200 students each, with five proposed tc be established in Year Two and six each in Years Four and Six.

One Police sub-station is proposed to be established in Year Two which should be adquate to maintain law and order.

II. DESCRIPTION OF THE PROJECT AREA ENVIRONMENT (prior to implementation)

A. The Natural Environment

1. Air

a. Climate

The precipitation of the Project Area was synthesized from records obtained from nearby stations outside the Project boundary. Of these, the Dabana German Mission Station has the longest constant precipitation record. Data from this station obtained from 1967 through early 1975 (for precipitation in millimeters) and supplied by the Ethiopian Meteorological Service of Civil Aeronautics are as follows:

J	F	M	A	M	J	J	A	S	O	N	D	Total Annual
31	40	59	77	251	278	327	328	349	160	64	15	1,979

The mean annual precipitation is nearly 2,000 millimeters ranging from about 1,800 in 1972 and 1973 to 2,100 or more in 1970, 1971, and 1974. November through February are almost always dry and June through September invariably wet, with rain occuring almost every day. Rainfall usually arrives, not in severe storms, but in steady accumulations (highest per day was 70 millimeters for 15 August 1973).

Records from a former station in the Didesa Valley maintained from 1971 to 1973 by the United States Peace Corps at an elevation similar to that of the Project Area show average temperatures (C^{o}) as follows:

Month	Maximum	Minimum
J	32.9	6.3
F.	33.4	7.6
M	34.5	11.9
A	34.1	12.1
M	31.2	10.8
J	28.7	11.5
J	27.3	11.5
A	27.1	11.1
S	28.7	11.2
O	30.3	10.1
N	29.4	8.2
D	30.3	6.1
Year	30.7	9.8

Mean 20.3
Mean Diurnal Range 20.9

Days are warmest in March-April and coolest in July-August. Nights are relatively warm from February through September and cool from November through January. The Project Area should not experience frost.

b. Air Pollution

No serious pollution occurs over the sparsely populated site at present. There is some seasonal pollution resulting from yearly burning of pastures and a minute chronic amount due to domestic fires.

2. Land

a. Physiography and Topography

At the commencement of the final surveys, the mapping unit of the Ministry of Land Reform and Administration supplied contact prints, a photomosaic, and topographic maps (1:250,000). A detailed ground survey was carried out in the environs of the proposed Project Farm.

The Project Area lies approximately between latitudes 8° 27' and 8° 41' north and longitudes 36° 20' and 36° 39' east. At elevations ranging from approximately 1350 to 1500 meters.

The Project Area is part of a lengthy valley formed by erosive action of the Didesa River and its tributaries. The surrounding highland plateau elevations average 2,000 meters or more while the valley floor elevations range from 500 to 700 meters lower. The valley lands form a complicated system of low hills which border and interrupt grassy plains with scattered trees and shrubs sloping gently towards the river. Numerous Didesa River tributaries, some with near perennial flows, frequently dissect the plains.

b. Geology and Soils

No detailed geological study was included in the scope of the current study. According to references consulted 1/ and as confirmed by mineralogical laboratory

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1/ "An Atlas of Ethiopia", Mesfin Wolde Mariam
"The Geology of Ethiopia", Paul A. Mohr.

study of decaying rock samples at the Royal Tropical Institute in Amsterdam, the area forms part of the Tertiary Trappean Lava composed largely of basalts and basaltic tuffs.

Soil samples collected in the Project Areas during February and March 1975 were analyzed by the soils laboratories of the Ministry of Agriculture in Addis Ababa and the Royal Tropical Institute in Amsterdam. Based on field observations and laboratory analyses the soils were identified and grouped into seven series. Brief description of the soils are presented below.

Parent material and climate do not vary within the Project Area; consequently, soil formation and differentiation have primarily been influenced by three environmental factors: slope, aspect, and drainage. On the hills, red and brown inceptisols have developed covering 52.3 percent of the area (17,970 hectares). The red soils, in general occupying the steeper hills, represent the most advanced stage of soil formation. The brown soils of the more gently sloping hills have undergone a weaker weathering. On the slightly sloping plains and in the basins black, brown and dark gray vertisols, which have been enriched trhough lateral movement of groundwater from the higher lying hills, have formed on 27.5 percent of the are (9,430 hectares). They are brown on relatively well drained plains, and dark gray to black in basins with poor external drainage. Adjacent to the Didesa River and its main tributaries, alluviums have been deposited, and at the foot of some hills, especially those close to the Didesa River, colluvial material has settled resulting in the presence of gravelly clay. Alluvial and colluvial material comprise 16.5 percent of the Project Area (5,670 hectares), and scattered steep hills account for 3.7 percent (1,260 hectares).

A land capability classification map was prepared which formed the basis for determining the agricultural potential of each part of the Project Area. For the present purposes the mountainous intrusions and alluvial riverine soils are considered non-arable due to steep slope of the former and periodic flooding of the latter. The black and gray vertisols require drainage at present too costly to consider, although their agricultural potential following drainage and the enforcement of proper tillage methods is considerable.

All red-brown and colluvial soils in the Project Area are considered adaptable to cultivation though not without serious limitations due to erodibility and past erosion

damage. Recommendations for preservation of maximum productivity of these soils will be listed in the impact section of this report.

3. Water

a. Surface Water

The major source of water in the Project Area is the Didesa River with its intermittent tributaries. Stream runoff has been observed since November 1960 at the downstream limit of the Project Area at a station known as "the Didesa River near Arjo" (drainage area, 9,486 square kilometers). This station is operated by the National Water Resources Commission.

The mean annual runoff for the years 1960 through 1973 is 4,686 million cubic meters, an amount equivalent to 148 cubic meters per second average discharge and to 494 millimeters yield from the drainage area. During this period annual runoff has varied from about 3,409 cubic meters, or 359 millimeters yield, in 1972 to 6,860 million cubic meters, or 723 millimeters yield, in 1961. As a rule, the mean annual yield from the basin is about 25 percent of the mean annual precipitation.

Runoff is lowest from February to April, increases with accelerating rapidity from May to July, reaches its maximum in August or September, then begins to recede until it reaches low amounts early in the following year. Annual floods are not abrupt since they are due to the result of successive daily rains. The greatest flood of record, with respect to momentary peak discharge, (1,185 cubic meters per second) occurred on 10 October 1961 and was about two meters above top of bank at the gaging station.

Mean monthly and annual flows (in cubic meters per second for 1960 to 1973 at the Arjo Station) are as follows:

J	F	M	A	M	J	J	A	S	O	N	D	Annual
19	12	9	13	41	105	308	465	418	265	78	35	148

Minimum 24-hour discharges at the Arjo Station were recorded as low as 0.44 cubic meter per second on 9 March 1971 and as high as 13.0 cubic meters per second on 29 March 1966.

Water samples collected from the Didesa and Ambelta Rivers are now being analyzed for potability.

b. Ground Water

A survey of ground water resources was not included in the scope of the present study and no definite information exists with regard to quantity or quality of ground water resources in the Project Area. It is known that some of the project soils retain water well, but the location and analysis of usable aquifers properly belong to a future stage of the project.

4. Ecology

a. Terrestrial Ecology

The plant communities of the Project Area show a mosaic distribution largely correlated with soil types and other environmental factors. Climatic conditions are uniform throughout the area and, thus, are expected to have little effect. Measurements of the significant soils factors and their correlation with floristic conditions were made in considerable detail during the course of the present study. A summary of plant community variations is presented in the following paragraphs.

The red/brown well-drained inceptisol lands, largely on hilly areas, are dominated by the tree species Combretum glaucescens which prefer well leached soils with good movement of air and water within the soils. In the less well leached soils it may be accompanied by Acacia sieberiana which is dependent upon a higher soil cation content. In more well-leached areas, C. glaucescens may be associated with Acanthus eminens, Desmodium sp., Becium obovatum and other species.

In those red/brown soil areas too poorly leached to support Combretum, Ficus exasperata is the most dominant tree. In better leached areas, this species fails to establish itself in competition with Combretum and fails to prosper in even more poorly leached areas, possibly due to lack of nutrients.

A few well leached soil areas may be dominated by Grewia mollis rather than either of the two preceding species. Guizotia scabra is another locally common species.

The waterlogged black and dark gray vertisols are characterized by a variety of grass and sedge communities with relatively few trees. Among shrubs, which are characteristic of these habitats, are Rhoicissus erythrodes, Tephrosia sp. and Grewia sp. aff. pubescens.

Common grasses of both soil types are Hyparrhenia cymbaria, Imperata cylindrica, and Panicum sp. Sporobolus pyramydalis is specifically characteristic of the black soils.

At present, the red soils, free from waterlogging though relatively low in nutrients, are planned to be converted to agricultural use so that most of the vegetation initially replaced will be of the Combretum and Ficus types. The black soils will be used largely for pasture purposes.

The red/brown and black/gray soils area have both already been much affected by the traditional annual burning and its resultant consumption of organic soil material culminating in a flora adapted to fire. As will be discussed later, it is also believed that extensive cattle grazing and some cultivation in the relatively recent past has already radically altered native plant communities.

Within the Project Area there is a narrow belt of riverine forest about 200 meters in width bordering the Didesa River and less (sometimes only one row of trees) on its tributaries. Due to the prolonged rainy season, the difference between hillside and riverine forests is less here than might be expected. The characteristic species include the trees: Mimusops kummel, Acacia sieberiana, Acacia lahai, Albizia schimperiana, Entada abyssinica, Flacourtia indica, Ficus sycomorus, Cordia africana, Diospyros abyssinica, Milletia ferruginea and the shrub: Calpurnea aurea.

There are also small stands of hillside forest present on a few mountainous intrusions into the area. These forests are in strong contrast to the lowland forest assemblages.

Large wildlife is sparse in the Project Area. This is probably due to the relatively recent use of the area for large scale cattle grazing and associated pasture burning. Since there is little natural highland grassland in East Africa, few species seem to be primarily suited to this habitat, most being

primarily forest inhabitors. There are no indications that any rare or endangered species are present, although a few Nile crocodiles (Crocodilus niloticus) are known to occur in the Didesa River.

Among the mammalian species recorded in or adjacent to the Project Area were anubis baboon (Papio Anubis) vervet and colobus monkeys (Cercopithecus aethiops and Colobus abyssinicus), porcupine (Hystrix sp.), white tailed mongoose (Ichneumia albicauda), spotted hyena (Crocuta crocuta), aardvark (Orycteropus afer), warthog (Phacochoerus aethiopicus), and oribi (Ourebia ourebi). Some other large animals, such as lion, leopard, and giant forest hog, have been reported near Chara and Arjo and may occasionally enter the Project Area.

Further consideration of the mutual effects of the proposed Project and the present plant and animal life on each other is presented in the impact section of this report.

b. Aquatic Ecology

No detailed study of the ecology of the Didesa River or its tributaries has been carried out, nor was one within the scope of the present study. The area may, however, be assumed to be relatively little effected by the insignificant local use to which it is put (primarily as a source of drinking water). There are significant populations of hippopotamus (Hippopotamus amphibius) and crocodile (Crocodilus niloticus) present in the Didesa River.

B. Human Environment

1. Socio-Economic Profile of Indigenous People

a. Demographic Characteristics

The Project Area is located within Buno Bedele Awraja (estimated population 246,000) of Ilubabor Province. Bedele and Borecha Woredas, which contain the project area, have a population of 64,500. For the awraja as a whole, the population density is 43 per square kilometer. These statistics are compiled from published Central Statistical Office data.

However, the project site itself is sparsely populated. Apparently there was once a much larger population which afterwards diminished as the result of an influx of malaria and animal trypanosomiasis which forced the population

to migrate to the highlands above the natural habitat of the malarial mosquitoes and tsetse flies. Since that time, population pressures have forced some farmers to re-enter the lowlands. The present population of the Project Area is estimated at 1,500 or about 4.4 per square kilometer. Field surveys carried out during February and March 1975 indicate that six persons per household is the average and that about 250 farm families are presently residing within the Project boundaries. Of these, about 165 families are located near the dry season track from Bedele through Chara to Kolosuri Mountain and occpy about 100 square kilometers or one third of the total project area.

b. Cultural Characteristics

According to traditional claims, the Shankilla people inhabited the Didesa Valley exclusively until approximately one hundred years ago. In the mid nineteenth century, the first Oromos began to settle and soon predominated. Since then the Shankilla have adopted the Oromo language and customs and for practical purposes, are no longer an identifiable ethnic group within the Project Area.

The Oromo, like other Ethiopian groups, have developed several customary strategies of communal labor. This may help make cooperative farming projects and provision of social services acceptable to the local population. Most Oromo farmers belong to one or more "associations" whose members help each other doing such difficult tasks as building houses, plowing, or harvesting. The member receiving such assistance will provide the group with drink in return for their labor and will, in turn, help the others when so requested.

The heterogeneous nature of religious beliefs and influences was shown during the field survey. About seventy percent of those interviewed professed to be Christian, twenty five percent Muslim, and the balance pagans. The survey indicated, that religious constraints play an unimportant role in the daily life of the farmers.

The average farm family of six is composed of the father, two wives, two children, and one other relative. The average age of the family head is forty-eight and more than seventy percent of the families had moved into the area in their own or their fathers' lifetimes, most from Buno Bedele and Arjo Awrajas. Most moved because of desire for fertile land, presence of relatives already on the site, exhaustion, or unstuitableness of previous land cultivated.

Sons, on reaching maturity, may migrate to other areas while daughters tend to remain near their parents and marry within the community. These factors contribute to the predominance of polygamous marriages.

The village chief is elected by vote of all adults upon the death of his predecessor. His position is largely honorary and ceremonial. On important matters, the chief usually consults with the village elders. These elders arbitrate disputes and, if unsuccessful, seek help from the mutual assistance organizations.

The main diet of the Project Area inhabitants consists of grain such as maize, finger millet, and sorghum, together with some leguminous seeds; and very occasionally meat, bread and beer are made from grain.

Personal aspirations of the individuals approached stressed good health and possession of cattle and land for themselves; education, a government position, and wealth for their children; and schools, hospitals, new agricultural schemes, and modernization of facilities for their villages. They expected direct help from the government in providing them with better living conditions and that the Provisional Military Administrative Council by its land reform proclamation would assure them sufficient land.

c. Economic Characteristics

The average farm family is entirely engaged in either farming, housework, or tending livestock, and no member obtains appreciable income from any outside source.

Farmers on holdings of 1.75 hectares or less consume practically all of their harvests and only generate cash income through occasional sales of livestock, butter, poultry, garden vegetables and small amounts of grain. Farmers on larger holdings have additional surpluses for sale and/or barter.

On a percentage basis, the distribution of yields for all holdings between on-farm consumption and marketing or bartering were computed for the present study as follows:

Crops	On-Farm Consumption (%)	Sales/Barter (%)
Maize	80	20
Sorghum	75	25
Millet	70	30
Chick Peas	25	75
Noug	70	30
Teff	70	30
Berbere	25	75
Haricot Beans	80	20
Others	50	50

On a weighted average basis, approximately seventy percent of production yields are consumed on the farm, and thirty percent go to market primarily for bartering.

The gross value of crop production within the Project Area for the 1974-1975 agricultural year was E$34,000. The value for cattle production was E$13,000, making a total production value of E$47,000. The value of market sales and barters was E$10,000 and the net cash return to the area after tax and rent payments amounted to E$4,900.

The gross value of the average farmer's harvest amounted to E$135. He sold or bartered E$40 of this total during the year and applied the income towards the purchase of or trade for spices, other food and clothing. In addition there was an average of fifteen percent loss on that portion of on-farm consumption (about eighty percent) which went into storage, amounting to approximately E$12 per year per holding.

The average farm family obtains its major source of cash income from value received from occasional sales of cattle, butter, or poultry. For such a family, milk and eggs are considered as dietary supplements and surplus butter and chickens as market items. About E$51 is thus obtained per year of which E$20 traditionally used to go for taxes and farm rental.

There is a small cottage industry in cotton spinning by women and cloth weaving on hand looms by men. There is also the sale of beer made from local grains on market days. No specific quantities of returns can be assessed for these activities.

In all, the average family cash returns for 1974-1975 amounted to E$71 per year and to E$17,750 for the whole project area.

The weekly Sunday market at Chara attracts itinerant traders from Bedele with salt, spices, herbal medicines, cloth, ready-made clothes and shoes. Farm families bring surplus grain, garden vegetables, butter, eggs, cattle, sheep, goats and chickens. However, most transactions are barters between locals who exchange surplus livestock, maize, finger millet, sorghum, teff, berbere and noug.

2. Land Use

a. Agricultural

Of the total 34,330 hectares of land contained in the Project Area, field and aerial observations indicate that approximately 600 hectares or 1.5 percent are occupied by cultivated lands and their associated villages with an additional area of about 2400 hectares (seven percent) utilized at least periodically for grazing. Agriculture is presently confined to the red/brown soils due to relative ease of plowing, relative absence of human diseases, and better drainage, while grazing is sometimes practiced on the black-soil pastures. However, it is estimated that approximately 29,410 hectares or 89 percent of the Project Area is potentially amenable to some form of agriculture.

Because of its importance in understanding current land use, a more detailed description of present agricultural and stock raising activity in the Project Area is presented below.

Project Area fields are near or adjacent to the living quarters of the farmers. Each individual farmer cultivates an area varying from 0.25 to 5.0 hectares (average of 1.75 hectares), although many expressed a desire to cultivate up to ten hectares. Roughly equal percentages of holdings were composed of a single or of two parcels. Major reasons for unfavorably small plots, according to farmers, were the weakening effect of human and animal diseases such as malaria and trypanosomiasis and damage to crops by animals.

Since March 1975 all rural land has become government property and private ownership abolished.

The principal crops grown are maize, sorghum, finger millet, chick peas, teff, and berbere, with minor amounts of cotton, haricot beans, noug, garden vegetables and citrus. The average farmer sows three to five crops.

In addition, gourds, bananas, papayas, and citrus may be grown in home gardens without watering.

In late winter or early spring fields are burned. This has the advantages of aiding plowing by reducing stubble, destroying insects and weed seeds, and keeping wild animals away from houses, but this practice also dissipates soil nutrients and promotes soil erosion.

Crops are planted at the onset of the rains and are normally harvested after the heavy rains have subsided. All plowing is done by oxen as soon as the soils soften. Plowing stirs the soil without turning it over, resulting in a trashy tillage which serves as a light mulch and helps reduce soil erosion. Harrowing, sowing, weeding, harvesting, threshing and storage are done by hand with all capable members of the family participating in most cases (although threshing and berbere cultivation are women's work).

No source of chemical fertilizers, insecticides, herbicides, human or veterinary medicine, or improved seeds exists in the Project Area. Farmers retain seeds from previous crops or borrow them and use little manure (while recognizing its value) due to scarcity of cattle.

Although variation in measures used and cooperative methods of farming make it difficult to calculate the average yields, they are believed to be low by national standards, due to a number of reasons including inferior seed, poor cultivation practices, loss to insects, birds, etc., and inefficient methods of harvesting and threshing.

Storage facilities are small circular sheds on legs made of sticks, plastered with mud on the inside, and covered with a removable thatched roof. Storage losses due to rats, insects, and mildew average fifteen percent with a range of five to fifty percent. For this reason, farmers are unwilling to harvest, thresh or store more grain than is likely to be consumed.

It is estimated on the basis of field studies that the livestock population of the 250 holdings in the Project Area totals about 1,250 cattle (average of five per holding, ranging from zero to eighteen), 500 sheep and goats (average of two per holding, with goats preferred), and 2750 poultry (average of eleven per holding).

Cattle are mostly Zebu and vary in size according to the quality of grazing. Cattle are usually grazed on the black soil valleys between the Didesa River tributaries. As the dry season progresses, they are grazed first on field crop residues, then on the adjacent burned lands, usually beginning in the higher areas since these dry and are burned first. Each night they are returned to the village compounds and kept penned. Grazing time per day decreases as the distance from village to pasture increases with the season. Only natural sources of water are used, no wells being dug.

The dominant grasses are Hyparrhenia spp. These make good grazing immediately following burning or new growth following rains, but quickly become fibrous and unpalatable. Some species may also inhibit nitrogen fixation in the soil. No pasture management is practiced apart from the annual burning, nor are principles of selective breeding of cattle either practiced or understood.

Milk and butter are used and sold respectively by the farm families often to the detriment of calf development. In addition, oxen labor is utilized and an occasional barren cow or surplus heifer sold.

Health of cattle is poor due to trypanosomiasis, and other diseases and parasitic infections, as well as poor nutrition. Livestock at an elevation of 1,300 to 1,500 meters is sparse and unhealthy, but rapidly improves at higher elevations.

b. Forests and Grasslands

Land remaining in natural grasslands and forest totals 31,300 hectares of 91.5 percent of the Project Area, although most has been gravely affected by past over-grazing and periodic burning. Most of this area (26,300 hectares or 76.5 percent of the project area) is potentially cultivable. The remainder consists of riverine forest and water surface (3,700 hectares or eleven percent of the Project Area) and of mountain forest (1300 hectares of four percent of the Project Area).

c. Residential

The only permanent residences are those mentioned in a., above. No village surveyed contained fewer than ten or more than forty households. The residential area included is miniscule.

d. Commercial

No Project Area space is permanently used for commercial purposes. The nearest customarily used facility is the weekly market at Chara, just outside the Project boundary.

e. Historical Archeological or Culturally Significant Sites

Due to the past depopulation of the Project Area and the unsubstantial nature of structures erected by the known inhabitants, it is not believed that any sites of special archeological, historical, or traditional importance exist.

3. Public Services

a. Public Health

Public health services are non-existent within the Project Area at present. The nearest clinic, dressing station, and pharmacy are at Bedele which is fifty kilometers from the Project center via the existing dry weather track through Chara, or twenty five kilometers on a direct line up steep escarpments.

Many debilitating diseases which seriously affect health and limit labor activities are evident. The prevalence of endemic malaria has been a primary cause for exodus from the Upper Didesa Valley and a major constraint to spontaneous resettlement. Malarial mosquitoes are especially a problem during the rainy season when stagnant water abounds and farming activity is at its peak. Most people are bitten at night or while performing weeding operations or other farm activities.

Jigger fleas are always present, entering skin cracks on bare feet or under broken toe nails, thus destroying living tissue and exposing it to infection. Tuberculosis and other pulmonary diseases, such as pneumonia and influenza, are also common. All residents also carry and have lived continually with a load of internal parasites.

Human trypanosomiasis has been confirmed in Gambela Awraja and tsetse flies capable of serving as its vector are known to exist in the Didesa Valley. Therefore, a possible outbreak of sleeping sickness is an ever present threat.

Malnutrition is of equal importance as a contributing factor to poor health since this exposes the weakened individuals to severe infection.

The presence of waterborne diseases, such as bilharzia, in the Project Area is not confirmed but requires consideration in planning use of Didesa River water.

Development of health care and disease prevention facilities are, therefore, of prime importance to the success of any settlement project and are discussed in the project description section of this report.

b. Education and Agricultural Research

Educational facilities are entirely absent within the Project boundary; however, some households send their children to the Ministry of Education primary school at Chara. There are also three primary and one junior secondary schools at Bedele.

The nearest Institute of Agricultural Research stations to the Project Area are located at Jima to the south and Bako to the north. These may be future sources for agricultural instruction to project settlers.

c. Transportation

At present the Project Area is only reasonably accessible from the nearest all weather roadways, of which Route 5 (Nekemte to Addis Ababa) is approximately sixty kilometers to the north and Route 7 (Addis Ababa to Jima) and Route 43 (Metu to Bedele to Jima) are approximately fifty kilometers to the south. Route 5 is asphalted from Addis Ababa to Hagere Hiwot and gravelled the rest of the way. Route 7 is asphalted from Addis Ababa to Giyon and gravelled the rest of the way to Jima. Route 43 is asphalted from Jima to Agaro and is scheduled to be asphalted as far as Bedele. An all weather Bedele - Arjo - Nekemte feeder road has been funded.

At present a dry-weather track leads from Bedele to Chara to Kolosuri Mountain and another follows the future Bedele - Arjo - Nekemte road route. Both tracks traverse rolling or hilly country and cross a number of stream beds. Four-wheel drive vehicles may be used during the dry season.

Truck transport charges have been estimated to average E$0.013 per quintal per kilometer for transporting surplus produce to market, assuming improved roads. The cost may be as low as E$0.01 per quintal per kilometer if a full load can be carried both ways, or as high as E$0.015 if a full load is carried only one way. For unimproved roads, costs may be E$0.02, E$0.03 or more per quintal per kilometer.

d. Water Supply and Wastewater Disposal

The sole sources of water supply in the Project Area at present are the Didesa River and its tributaries. No wells are known to exist and no organized facilities for wastewater disposal exist.

e. Solid Waste Disposal

There are no organized facilities for solid waste disposal in the Project Area.

f. Utilities

There are no public utilities available to the Project Area. The nearest telecommunications service and post office are in Bedele as are the nearest Christian and Muslim religious facilities.

g. Police/Fire Protection

The nearest police post is at Chara just outside the Project Area boundary.

III. PROBABLE ENVIRONMENTAL IMPACT OF PROJECT IMPLEMENTATION

A. Primary and Secondary Impact of New Settlement, Introduction of New Residents.

1. Natural Environment

a. Air

Air quality is not expected to undergo a significant change even at the density of population expected with full project settlement. However, some increase in domestic fires and possibly in extent of pasture burning will inevitably accompany a population increase. The possibility of air pollution due to blowing dust if erosion control methods are not enforced is best discussed in later sections of this report.

b. Land

There is not expected to be any severe effect on soils caused by construction of settlers' quarters. Some soils may erode from areas cleared of all vegetation for the purpose of village construction. In itself this is unimportant since these areas are not intended to support crops in any case. Construction must always be confined to the red-brown soils since the characteristics of the black-grey types (expanding and sticky when wet, cracking and hardening when dry) make them unsuitable for homesteads, villages and other infrastructure (in particular, roads) although roads will have to traverse them in places.

c. Water

The new municipality, Project Center, Project Farm will be served by a water supply system providing water by pumping from the Didesa River. These uses would cause some diminuition of river flow. However, the estimated requirements of 156,000 cubic meters per month for all domestic, commercial and livestock consumption amount to less than one percent of the 24 million cubic meters average flow for March, the month of lowest flow.

Each project village is expected to draw its own supply from convenient ground water soruces or small impoundments. At the time of settlement, instructions should be enforced to insure that settlers dispose of possible polluting wastes in such a manner as to avoid

contaminating ground water supplies. The final population of the area is not expected to be large enough to generate large amounts of polluted wastewater.

d. Ecology

Settlement inevitably involves the clearing of much of the natural vegetation from the project village sites, together with elimination of much of the associated wildlife. It should be understood, however, that the present plant and animal communities of the project area are "natural" only in a relative sense, the area having been much affected by relatively recent large scale grazing and by continuing annual burning of vegetation. The main effect of settlement, as such, will be the increased clearing of land for villages and associated facilities.

The territorially far more extensive effects associated with agricultural development and disease control will be discussed in the relevant sections of this report.

One effect of settlement that should be watched is the sanitary or health question of increase in flies, rats or other organisms commensal with man. Any necessary measures of sanitation, etc. needed to control these organisms should be enforced.

2. Human Environment

a. Socio-economic

Surveys of characteristics of potential new settlers indicate that most would derive from three sources.

Some landless peasants whose recent ancestors have evacuated the Didesa Valley as a result of human and animal diseases have expressed an interest in returning if conditions improve. Although the number of such settlers would be relatively small, resettlement difficulties would be minimized by their traditional ties to the valley, cultural similarities to present inhabitants, and retention of a life-style suited to local conditions.

Local highlanders presently inhabiting lands sorrounding the Project Area are expected to volunteer to relocate in the new settlements, attracted by the government services to be provided. These too would have much

in common with the present settlers, and a past history which would have reasonably well prepared them for understanding of and cooperation with the project goals.

The third source of immigrants would derive from the pool of landless and part-time employed rural laborers from the area of Jima, Agaro, and other large neighboring towns. These people would be for the most part, though not necessarily exclusively, of Oromo origin, and hence cultural conflict with the local population would be minimized. A lack of past experience with community labor groups may create some problems in adjustment to working on a cooperative basis. Very careful testing for motivation of this element of the settlers and detailed guidance in enabling them to adjust will be necessary.

Preliminary surveys indicate that the majority of new settlers, at least in the initial stages, will be unmarried or newly married people and, thus, the average new settler family should include one or two adults, with one or no children.

For reasons of public health, new settlers need to be carefully screened before admission. However, most new settlers should be in better health than the present valley inhabitants since they will derive from areas free of malaria. This means that they must be carefully instructed in means of prevention and treatment of diseases that may be new to them.

Increased crowding of settlers deriving from a wide geographic area always provides an opportunity for communication of diseases; therefore, there will be a need for the planned medical facilities, as well as care in disposal of sanitary wastes. Imported clothes, furniture, food, etc. should be examined for the presence of rats, ticks, and other pests. Each immigrant himself should be subjected to a rather thorough health inspection.

In almost all cases, Ethiopian land settlement schemes have attracted more applicants than could be accommodated. It is not anticipated that the present plan will fail to do the same, or that applicants will be inadequate for the initial settlement phase.

Nor is it believed that the decrease in size of the available temporary-labor force in the area will have any adverse effect on the local economy since the applicants for such work (chiefly coffee picking for

at most three months per year) usually far exceed those actually able to find employment. It may even be beneficial in increasing the opportunities for the remaining applicants for coffee picking employment.

During the time of preparation of the Project Area for settlement by activities, such as road building, similar services to those outline above will be needed for the temporary labor force many of whom are expected to volunteer as permanent settlers.

B. Primary and Secondary Impact of Increasing Agricultural Production

1. Natural Environment

a. Air

There will be some increase in air pollution as a result of use of project machinery, increased amount of crop stubble to be burned, and cooking fires. However, the projected population density of the area is still expected to be low enough to give no problem in dispersal and dilution of pollution. This does not negate the advisability of such steps as plowing in instead of burning crop residues in order to both control air pollution and benefit the soils. Alternatively, these residues should be used as cattle fodder.

b. Land

Most project soils are susceptible to erosion and some to compaction as well; moreover, most will require extensive application of fertilizer. All this necessitates careful instruction of potential settlers and supervision of their cultivation practices.

If land on slopes were to be cultivated without the use of proper techniques, accelerated erosion would certainly occur. On all slopes of five to ten percent, project management must insist on undisturbed contour strips at suitable vertical intervals or, better still, terrace all slopes. Terracing should eventually improve the situation by allowing horizontal levelling of the land between terraces. On slopes of two to five percent less radical measures are needed, but all operations should be made to follow contour lines.

Some suggestions can be made with regard to all Project soils. Tillage should occur as soon as rains have sufficiently penetrated the soil and before runoff can

occur to aggravate erosion. Relatively poor rates of vertical infiltration may be improved by early tilling or mulching following harvesting. Operation with heavy machinery should be minimized to avoid compaction.

Fertilization will be necessary for soil nutrient improvement. The abundant rain and resultant leaching is expected to prevent salinity from ever becoming a problem.

c. Water

Runoff from project farms entering the Didesa River is considered likely to be insignificant in quantity, especially since cultivation will not occur on the alluvial soil or river vegetation belt. Rather, runoff would speed the continuing process of washing soil and nutrients downgrade into the black soil valleys. Suggestions have already been listed in b, above, for preventing excessive loss of soils or nutrients.

Pesticides (such as DDT), herbicides, and fertilizers might all cause problems if excessive concentration of their toxic or nutritive elements were to collect in the Didesa River or its tributaries. The scope of the problem might vary greatly and conceivably the entire downstream area could be affected to some extent. To prevent unpredictable results from occuring, toxic residues should periodically be monitored at sites above, adjacent to, and below the Project Area with the purpose of working out a spraying and fertilizing regime which will avoid or minimize damage to the aquatic ecosystem, in areas downstream from the project. The waters will asso be watched for any signs of eutrophication due to excessive fertilizer pollution. The rapid flow of most stretches of the main Didesa (though some quiet pools occur) should aid greatly in preventing build-up of pollutants. Nevertheless, efforts should be aimed at keeping the river safe under low flow conditions when danger of toxic or nutrient accumulations is greatest.

The impact of all these agricultural activities with regard to ground water deserves future consideration when more is known of local ground water resources. Waste disposal, crop spraying, use of fertilizer, etc. must be planned with the goal in mind of no or minimal contamination of ground water, especially village water sources.

d. Ecology

Clearing of land for crops will eliminate most of the present vegetation and wildlife from the site leaving only those which easily adapt to the environs of cultivation.

Important side effects of the use of pesticides are certain to occur in the fauna surrounding the Project Area. Although it is difficult to predict which species will be most affected it seems clear that high-order consumers (that is, those many steps advanced in the food chain) and species metabolically active enough to metabolize stored pesticide residues rapidly tend to be most quickly affected. In the past, birds feeding on smaller birds and on large fish have been the most frequent victims. Organochloride contamination of their food supply may cause a number of symptoms ranging from death; to sterility, to behavioural abnormalities. Organochloride compounds may be stored in body fats to be released catastrophically when fats are metabolized under conditions of stress.

In an area devoted to intense agricultural production, it is much less important to prevent effects on local wildlife (though the usefulness of some species as controls on crop pests and scavengers should be recognized) than to prevent injury to human settlers or consumers of project-raised foods and to limit or prevent destruction of ecosystems beyond the project boundaries. Spraying techniques and schedules must be considered with these two goals in mind in order to prevent unacceptable levels of contamination of workers or food and to avoid far ranging effects on Project Area environs.

Insect, pests should be watched for signs of developing to DDT or other pesticides used, and a second choice kept in reserve if possible. Since nothing is known about the presence of subsoil crop pests (such as nematodes or soil fungi), it is not impossible that subsoil pesticides may have to be used against them.

Introduction of improved seed for crops should greatly improve yields and, hence, profits for the project farmers. However, strains to be used need to be carefully selected to avoid use of high-yielding types which nonetheless are poorly adapted to local conditions or require more care than the project farmers can be reasonably expected to provide.

One unfortunate result of cultivation of a new area is increase in numbers of plants, animals and microbes dependent on cultivated crops which, when numerous, are harmful to the farmers' interests. There are however, a number of means in addition to the previously mentioned use of sprays that can be used to minimize adverse effects.

All seeds, plants, plant parts, livestock and pets entering the area should be subject to inspection and, if necessary, treatment to avoid introduction of parasites or diseases.

A clearing of a 1.0 to 1.5 kilometer strip surrounding the Project Area should be made in order to build a barrier against harmful weeds and eliminate shelters for insects, rodents, and other vermin. Such a barrier may not by any means be complete but it will have a notable effec This clearing may be done gradually by peasant associations on a cooperative basis during slack periods in cultivation.

Storage facilities must be improved. Many weevils, moths, and other insects as well as rodents destroy or defile vast quantities of stored grain. Insecure storehouses may form permanent reservoirs for these pests. To a lesser degree, trash heaps, abandoned houses, etc. may also harbor vermin including human disease vectors and their presence on the project site should not be tolerated.

Crops must be protected against wildlife in and adjacent to the Project Area. As already mentioned, the clearing of a 1.0 to 1.5 kilometer belt around the Project Area should deter rodents as well as larger wildlife, such as monkeys, wildpigs, lions, etc., from approaching, since these animals usually dislike crossing open spaces. The deterrent could eventually be made stronger, if peasant association finances permit, by constructing a bordering fence around the cleared area and inspecting it regularly for breaks. Such a fence should extend far enough underground to deter burrowing animals.

Penning of cattle, sheep, and goats at night (as presently practiced) within the villages should eliminate the already slight likelihood of losses due to large carnivores.

Damage from small carnivores may be minimized by such measures as using only secure hen coops and having vaccine available for men or domestic animals in case of rabies outbreaks. A population of small carnivores species

beyond the immediate neighborhood of cultivation may well be beneficial in reducing the number of rodents, small brids etc.

Damage to crops by birds is most difficult to prevent. Perhaps destruction of nearby nesting sites and cooperative efforts to prevent bird flocks from alighting or feeding are the most reliable methods although use of sprays on nesting or roosting sites has sometimes given good results.

Monitoring of river-borne pesticide residues, as mentioned in c, above is especially important if Didesa River fish are ever intended to be exploited as a food source, since organochloride residues accumulate in large carnivorous fish and relatively small deposits may make fish unfit for human consumption.

Aside from pesticide effects, impact of the project on the aquatic biota is likely to be minimal with one possible exception. There is evidence that hippopotami aid in maintaining the productivity of a river by manuring the water and releasing nutrients by stirring up bottom sediments. Since hippopotami are incompatable with large scale agriculture, this source of nutrient will disappear from the immediate vicinity of the Project Area. Nevertheless the effect may be slight if hippopotamus populations remain in the rest of the Didesa River.

Although the limited wildlife population in the Project Area would probably not justify the reservation of any large amount of land primarily for wildlife, a forested area on the non-arable hillsides should be considered for this purpose. The colobus monkey (Colobus abyssinicus) should be included in this connection as in many parts of Ethiopia it is overexploited for its skin.

2. Human Environment

a. Socio-economic

Since the three crops being proposed for the project (maize, sorghum, and chick peas) are among those most frequently raised there now, not much change in the dietary picture of the Project Area at present need occur directly. However, the indirect effects of higher profits for sale of increased surpluses will undoubtedly encourage increased purchase of higher protein grains such as teff,

barley, or wheat. Presumably, the ability to purchase other available consumer goods will also be increased.

The economic benefit should be further increased by the improvement of storage facilities and consequent decrease in loss of stored grain.

Completion of the proposed new road system will also render transport of goods to market much easier and make sales for money rather than barter common. Economic benefits should also extend outside the project along the upgraded access road to Bedele.

C. Primary and Secondary Impact of Livestock

1. Natural Environment

a. Air

Air quality is expected to remain unaffected by livestock. No feed other than the natural grasses and crop residue is expected to be used and no cattle products are planned to be processed in the Project Area; therefore, two possible sources of air pollution will be excluded. The possibility of air pollution due to raising of dust will be controlled by limiting the number of cattle permitted in the area and by controlled grazing.

b. Land

The possibility of soil disturbance caused by cattle must be one of the factors considered in arriving at maximum herd sizes to be allowed in peasant associations. Although the area usable for pasture is quite extensive, grazing must be controlled to the extent that herds are rotated among assigned pasture areas. The reduction of soil nutrients due to annual burning of humus must also be considered in arriving at a desirable measure of dry matter production. The frequency of burning, however, will not increase from its present once-per-year level.

c. Water

Ground or surface water sources may be contaminated with pesticides used in spraying cattle as well as in any other way. However, the concentration of cattle in a small area for treatment makes control of spread of pesticides much easier than is so of crop spraying, given proper training of operators and functioning of machinery.

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d. Ecology

Methods of better management of pasture should be explored if the present quality of cattle on the project site is to be improved. Especially some means, preferably labor-intensive, of eliminating fibrous weeds without periodic burning which dissipates some soil nutrients, exposes ground to sun and wind, and destroys soil-replenishing legumes, would be useful. However, pending such tedious labor, burning is necessary to prevent Hyparrhenia grasses from becoming hard and unpalatable and to encourage fresh growth; this may also enable more palatable and rarer species such as Themada triandra to survive in competition with Hyparrhenia.

Considering the present paucity of both wildlife and cattle in the Project Area, together with the facts that wildlife numbers must further diminish and cattle numbers be controlled during project development, it is not conceivable that the total pasture area will serve as a limiting factor or that significant competition between cattle and wildlife for the total resource could occur.

Diseases such as trypanosomiasis, rinderpest, foot and mouth disease, anthrax, and rabies may all be communicated from wildlife to cattle or the reverse. Control of the insect vectors such as tsetse fly together with inspection and vaccination of all cattle entering the Project Area will much reduce the danger. So will the inevitable retreat of wildlife as project settlement proceeds, although there seems no likelihood that contact between wildlife and domestic stock can ever be entirely prevented. The enforcement of stocking limits will help reduce parasite infestation of pastures.

2. Human Environment

a. Socio-economic

Since the present inhabitants of the Project Area already utilize milk for food and butter both for food and sale, no new food items will be added to their present menu. However, the supply of milk and butter may be increased either if cattle nutrition is improved or improved breeds can be maintained.

At present, only an occasional cow, sheep, or goat, usually a sterile or weak cow, is slaughtered for food; however, this will be done more willingly if a regular increase in stock herds can be ensured. In fact, frequent slaughter

or sale of stock will be necessary to keep the herd sizes, consistent with the capacity of the utilized pastures and of village pen facilities.

It seems that the monetary importance of cattle sales, already a disproportionate part of the farmers' cash income, will increase further as a result of the necessity of disposing of more cattle than at present.

D. Primary and Secondary Impact of Disease Control Programs

1. Natural Environment

a. Air

Air quality of the Project Area as a whole is not likely to be affected by the operations connected with disease control. However, one problem that must be addressed is the danger of humans or livestock from inhaling pesticides insecurely stored, poorly prepared, or carelessly used. Training in safe use of pesticides must be emphasized in the impelementation of the project.

b. Land

The possible effects of brush clearance on soil have already been discussed in previous sections of this report. One variation to be considered here is the fact that clearance of some riverine forest and cutting of corridors through the remainder will uncover areas of alluvial soils which may, as a result, be washed away during floods or rain which are sometimes heavy enough to cause notable erosion. This soils could not be economically used for agriculture at this stage in any case, nor is it obvious that deposition of soil would necessarily be less than erosion during flood seasons. There may be some possibility of gullying in the cleared patches once tree roots no longer hold the soil. If loss of soils or change in shape of river banks are considered important to prevent, grass clumps might be planted (as long as tsetse-harboring brush is excluded) or crude terraces cut on the steep river banks.

c. Water

The possible effects of pesticide use on water quality have been discussed in a previous section of this report. Of special concern in this connection is seepage into the Didesa River from spraying of riverine

forest against tsetse flies. Proper monitoring of pesticide residues and regulation of spraying programs should minimize these hazards.

Brush clearing is also necessary for assured permanent control of the tsetse fly. Spraying alone will not necessarily prevent reinfestation as long as suitable tsetse habitats remain. The cleared areas planned are buffer zones across the upstream and downstream limits of its project to an elevation of 1500 meters; the banks of Didesa tributaries; corridors through the Didesa River forest; and all agricultural and residential sites. Any consequent effect on water quality would derive from washing of increased silt loads into the river from cleared stream banks, probably only during periods of high river flow or heavy rain, and along the main Didesa rather than on tributaries whose flow is less and sometimes intermittent. It is not considered likely, however, that such a slight increase in silting can have much effect on the river as a whole.

d. Ecology

The effects of pesticide use and brush control on wildlife have already been discussed in previous sections of this report. The only addition to be made here is again to point out that the riverine forest must be sprayed for tsetse fly and that large areas of it will be cleared completely. This may increase exposure to pesticides of aquatic fauna and fish-eating birds and also decrease habitats for river bank wildlife. However, the riverine forest along the Didesa River would not be completely eliminated. It is probably desirable that some of the river-bank vegetation be preserved for its amenity value, since, except for isolated mountain intrusions, it contains the only relatively undisturbed plant communities within the Project Area.

2. Human Environment

a. Socio-economic

The capacity of the project residents for productive labor will undoubtedly be much increased by elimination or control of malaria or any other prevalent parasitic infestation. This is apparently recognized by the present inhabitants, many of whom consider poor health the main constraint to their present agricultural activities, as well as the main reason for past emigration from the Project Area to the highlands. Thus, two benefits are sure

to result from any significant degree of disease control, improvement in health of the settlers, and increase in agricultural output.

Elimination or control of cattle diseases will also allow improvement of the market value of stock. The present use of oxen labor will continue; however, the value of meat, milk, or hides will undoubtedly be more emphasized, especially if improved stock were made available, and the project inhabitants could be instructed in the value of selective breeding. Also, control of the tsetse fly will make more low-lying pastures bordering the tsetse habitat available for grazing. Veterinary treatment of livestock would also reduce nuissances or health hazards due to flies, ticks, and other inhabitants of cattle pens.

The total lack of experience of virtually all inhabitants or prospective settlers in the Project Area with regard to pesticides must be taken into account to emphasize the need for proper training and supervision in introducing them to pesticide use. There is a real danger to public health from improper storage, preparation, or use of pesticides by the uninitiated. This is particularly so regarding antimalarial spraying in which houses and environs must be repeatedly treated. Both operators and residents must be carefully instructed with regard to proper protection of food, children, animals, etc. during and following spraying operations. Developing insect resistance should also be watched for.

It is no exaggeration to say that elimination of debilitating diseases or marked reduction in their incidence is an absolute necessity for the increase in population and productivity of the Project Area envisioned in the present settlement scheme. As a direct result of the health improvement programs, jobs will be created for a staff of medical personnel.

IV. RELATIONSHIP OF PROPOSED ACTION TO LAND USE PLANS, POLICIES AND CONTROLS

A. Present Government Policy Concerning Settlement

1. Background[1/]

The average Ethiopian is a poor peasant farmer in a country where 85 percent of the population are peasant farmers. He lives at the margin of subsistence, and so is vulnerable to setbacks. His basic needs are access to enough land and farm inputs to provide his family with a less fragile subsistence base, and a marketable surplus which will enable him to provide health care, safe water supply, education for his children, roads to his village, etc.

Land reform is intended to increase the amount of land available to the average Ethiopian and to ensure that he reaps more benefit from the land. Land distribution and the elimination of tenancy obligations together with full control of land by peasant associations are intended to prevent control of land and monopolization by a few.

Since the government's development resources are limited, it is necessary that the energy of the peasant farmers be mobilized by politicization and education. Assistance should be given only to groups with special needs, such as pioneering settlers, and should not provide an income or level of services to any group beyond that available to the average Ethiopian.

Peasant associations have to date registered roughly one half of all farmers and provide a source of information about local conditions. In future settlements, they will undertake cooperative farming from their inception, and organize such internal project functions as receiving and administering credit for inputs, organizing workgroups, and making community decisions about self-help activities. New lands available for settlement may be lowland areas, former commercial farms, and lands formerly held in reserve by big landlords.

1/ Most of the information in this section is abstracted from the paper by Simpson listed in the bibliography of this report.

Relevant Government Documents are Proclamation No. 78 of 1976, "A Proclamation to Provide for the Establishment of a Settlement Authority", February 4, 1976, Negarit Gazeta; Proclamation No. 71 of 1975, "A Proclamation to Provide for the Organization and Consolidation of Peasant Associations", December 14, 1975; Proclamation No. 31 of 1975, "A Proclamation to Provide for the Public Ownership of Rural Lands", April 29, 1975, Negarit Gazeta; and a draft settlement policy paper of the National Land Settlement Authority.

2. Objective of the Land Settlement Authority and of Settlement

Article 17 of Proclamation No. 78 establishes the autonomous Land Settlement Agency to coordinate all settlement activity and requires all public authorities to cooperate with the agency. The authority's objectives are:

settlement of persons who have little or no land;
utilization of idle land;
alleviation of unemployment problems;
conservation of forest, soil and water resources.

The Draft Paper also describes such objectives as incorporation of settlers into a cash economy, import substitution and production for export.

The attempts to take these objectives into consideration in the planning of the present project have been detailed in the relevant positions of the impact section of this report.

The General Manager is the chief executive officer of the Authority and is charged to direct and supervise its operations and management subject to the general direction of a Board of Directors consisting of:

Minister of Lands and Settlement (Chairman);
Minister of Agriculture and Forestry (Vice Chairman);
Minister of the Interior (Member);
Minister of Labor and Social Affairs (Member);
Commissioner of Planning (Member);
Commissioner of Relief and Rehabilitation (Member); and General Manager (Member).

The Authority has the responsibility to identify and inventory areas suitable for settlement, prepare and implement general settlement policy, and short - and long-term programs, and to oversee all public and private settlement activity and take them over when necessary.

Proclamation No. 78 states, "settlements shall be undertaken on land which is not occupied or utilized by any person or organizations and, with the consent of the government, or land which the Authority considers will give better economic and social results".

The Draft Paper asserts that the Authority will assist in alleviating the causes of under-utilization of land such as isolation from markets and disease as well as supporting costs of relocation and settlements, formation of marketing and credit associations, or advice and encouragement for using improved agricultural techniques. It is believed that such extraordinary aid will be required in the present project.

Proclamation No. 78 states further "a settler will be allotted land sufficient for his maintenance in accordance with the Public Ownership of Rural Lands Proclamation" (31 of 1975). Specifically:

Article 4 - Distribution of Land to the Tiller

(3) The amount of land to be allotted to any farmer family shall not exceed ten hectares (1/4 of a gasha).

(4) The amount of land to be allotted to farm families shall, as far as possible, be equal in size. The size may, however, vary according to the productivity potential of the land.

(5) No person may use hired labor to cultivate his holding. (Exception is made for the elderly, widows, and orphans).

Article 5 - Prohibition of Transfer of Land

No person shall by sale, exchange, succession, mortgage, antichresis, lease or otherwise transfer any land acquired under the provisions of this proclamation. (Provision that on the death of the holder, the right to use the land is passed to one family member).

Also, settlements will be laid out in a village pattern, not a house-on plot-pattern.

Whether or not settlement costs shall be recovered partially or totally from settlers shall be determined on a project-by-project basis.

3. Policy Guidelines for Settler Selection

According to Proclamation No. 78, priority of settlement will be given to persons residing in the general vicinity of the settlement site.

The Draft Paper adds that in highly congested areas, priority will be given to individuals within or from the region surrounding the settlement project.

Proclamation No. 78 defines potential settler populations as:

> persons with small or no land;
> unemployed persons who reside in urban areas;
> nomads desirous of being settled; and
> persons who need to be settled for various other reasons.

Beneficiaries of settlement programs shall be persons from the above categories whom the Authority deems capable of participating in the program after consideration of age, health, and interest.

The Draft Paper gives the following criteria:

> a person willing and interested in making his living from agriculture;
> a person with agricultural background;
> a person from the age of 18 to 45;
> a person who is healthy; and
> a person who will abide by the rules and regulations of the Authority and who will accept the obligation to develop the land.

These are the principles that must be applied to the Didesa Project, and which have been considered in the planning process as described in the relevant sections of the present report.

B. Effects on Population Distribution

The successful accomplishment of the present project will cause a desirable shift in peasant population to the Didesa Valley from the surrounding overcrowded highlands. It is important to ensure that the promise of large amounts of government assistance does not attract such an excessive number of settlers from the surrounding areas as to decrease their agricultural production. If necessary, this result could be avoided by choosing, in collaboration with local peasant associations, only a fixed number of settlers, preferably from among the most needy, from each association. The total area devoted to productive agriculture should thus be increased, and not merely shifted in location.

Any shifting of population from the local underemployed urban populations to the Project Area would also be beneficial provided that individuals most likely to succeed as settlers are chosen.

To an extent not precisely definable, the non-agricultural population in the neighborhood of the Project Area will also be shifted in response especially to the new transportation facilities planned. New opportunities will exist for commercial dealings and cheap transportation of goods. It may also be expected that some members of settler's families will take up residence near thein kin.

C. Conflicting Uses

There are no known plans by any Ethiopian Government Agency for any use of the Project Area that would conflict with that described in this report. Specifically, there are no known plans to zone any of the Project Area or adjoining territory for wildlife or forestry purposes. Thus no conflict appears to exist between the project and the policy of any Government department.

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V. ALTERNATIVES TO THE PROPOSED ACTION

A No Action

This alternative would have only one advantage; i.e., it would avoid any environmental or social disturbances consequent on possible failure of the currently considered project. However, the Project Area at present contains neither a pristine natural ecosystem nor a healthy, economically well developed human community. In fact, the present situation, as outlined in a previous section of this report, is sufficiently unsatisfactory environmentally, socially, and economically that there seems no compelling reason for accepting this alternative.

No action would simply allow the present unhealthy conditions to continue with the possibility of the Project Area serving as a reservoir for human or animal diseases (although the surrounding highlands would probably not be affected).

B. Postponing of Action

Postponing of action would have approximately the same effects as the no action alternative described above. However, it could be expected that population pressures would continue to drive some additional settlers into the Project Area with resultant unorganized and uncontrolled development without benefit of any rational plan.

C. Conversion to Livestock Production

Livestock raising is a traditional part of the lifestyle of the present inhabitants of the Project Area and this will continue to be the case under the present development scheme. However, it would be possible, if considered desirable, to convert the project area entirely to intensive livestock production.

It is estimated that about 10,000 livestock units per 5000 hectares could be supported in the Project Area. One important necessity before pastures could be fully exploited, however, would be construction of stock ponds in order to allow watering of large herds. It is estimated that at least eight stock ponds of five to ten meters average depth and surface area of one to two hectares, each supplying 300 cubic meters of water per day, would be required for the entire Project Area. Ponds would be sited near the 1400 meter contour, and no more than ten kilometers apart at a total cost of about E$1,000,000.

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The environmental impact of development for cattle grazing would not differ much from those associated with the present settlement scheme. Such plan elements as brush clearance, human and animal disease control, and construction of project villages would be equally necessary in either case and have about the same environmental consequences. Even more care than with regard to the present project would have to be given to avoid damage or depletion of pastures. On the other hand, the level of population density or of skilled labor required of the project settlers might be considerably less.

However, the production of cattle would not serve the purpose of considerable increase in food production such as envisioned in the present project, and which required increase and improvement in grain crops. Nor will it serve the social purposes of settling so many landless individuals. Some of the more useful features of a cattle rearing program, such as the increase in farmer cash income from cattle sales and increase in butter and milk production, will, in fact, form secondary features of the plan presently under consideration.

D Other Food Production Alternatives

Other possibilities for animal food production, such as poultry raising or establishment of a Didesa River fishery would even less fulfil the goal of significant increase in food production. However, production of poultry or eggs is not excluded as a minor part of the present scheme and a fishery could be introduced if further ecological study of the Didesa River warrants it, and the residents of the Project Area show potentiality for fishery work.

E. Wildlife

As has been indicated in previous sections of this report, wildlife in the Upper Didesa Valley is relatively scarce, nor are environmental conditions presently favorable to its rapid increase. Therefore, there seems no reason to zone any significant part of the Project Area for wildlife purposes, although, as mentioned earlier, some of the uncultivable mountain forest patches might be considered as possible reserves.

F. Expansion of Agriculture

Although it is not at present considered economical to extend agricultural activities beyond the red-brown soil areas, possible future utilization of other soil types is not at all excluded and thought has been given to the techniques and expense that would be necessary.

Considering the high nutrient content of the black vertisol, their agricultural potential is rather high if waterlogging can be reduced. This would involve the expense of constructing a drainage system, probably by open-ditch gravity flow to the Didesa River or one of its tributaries. Although this is expensive, it would have the advantage of being labor intensive. The most likely crops raised on the black soils would be cotton and teff. Mechanized seedbed preparation would probably also be necessary.

There would be some additional environmental effects from drainage of the black soils. The flow of water in the Didesa River would increase by about two percent due to loss of some 8,000 hectares of valley storage. Also, drainage would create a favorable environment not only for crops but for associated crop pests. An increase in population of weeds, insects, rodents, etc. would have to be foreseen and guarded against.

There may also be some agricultural potential in the alluvial soils bordering the Didesa River. However, annual flooding would have to be prevented and the means of doing so are considered unreasonably expensive as well as likely further to impede drainage from the rest of the project soils. For these reasons, it is not considered likely that the alluvial soils will be exploited extensively in the near future. However, some small areas could be used, after tree and brush clearance, for small scale irrigation operations powered by potable low lift pumps, making very careful use of residual soil moisture and late rains. The crops most likely to be raised would be vegetables, cucurbits, and horticultural crops.

It seems that the best use to which the Project Area can be put in the near future is that of an increased source of agricultural crops, and this is the major use envisioned in the current project. To some extent, the valley is already sufficiently modified by agricultural activity to be considered committed to this primary use.

VI. PROBABLE ADVERSE ENVIRONMENTAL IMPACTS WHICH CANNOT BE AVOIDED

Among the probably inevitable effects of agricultural settlement are increased levels of air and water pollution. In the case of the Didesa River area, it is considered that the continued sparse population of the Project Area will minimize these effects.

In the case of air pollution, burning of pastures, greater number of household fires, etc. is expected to raise pollutant levels by only an insignificant amount with the worst effects probably being confined to the period immediately following pasture burning. Actually, extensive pasture areas are presently being burned by the project residents. Such practices as plowing under, rather than burning, crop residues would further lessen adverse effects.

Pollution of the Didesa River and its tributaries could be a much more serious problem since the whole water supply of the Project Area and many adjoining areas as well derives therefrom. The main threat here would come from use of pesticides with perhaps minor damage being done by discharges of human wastes or fertilizers. It is believed that damage to water quality or to the aquatic ecosystem can be avoided or minimized by the monitoring of water quality downstream from the Project Area, in order to keep concentrations of DDT or other pollutants at a tolerable level especially during conditions of low river flow and, if necessary, the regulation of spraying quantities and schedules to minimize impact.

Fertilizer use or human wastes are not believed likely to make a major contribution to river pollution, but, on the other hand, may require protection of village water supplies in wells or impounded areas since isolated relatively stagnant bodies of water would be more likely to undergo bacterial contamination and eutrophication. Proper placement of water sources will be part of project planning.

It is not considered that any inevitable adverse impacts on soils used for crops need occur. Provided soil conservation practices recommended in an earlier section of this report are carefully followed the soil situation

may even gradually improve. However, the burning of pasture, inevitable if woody forms of Hyparrhenia are not to dominate the grazing areas, will probably have a deteriorating effect on soil nutrients. Careful regulation of grazing will be necessary in order to ensure that cattle can be supported at a level that will not cause progressive deterioration of pasture soils. Use of manure or fertilizer might also be considered if available in sufficient quantities.

Most of the present wild plant cover and larger wildlife will be gradually eliminated from the Project Area. This is inevitable if intensive agriculture is to be practiced. However, none of the local biotic communities have any exceptional aesthetic, economic, or scientific interest, having already been much depleted by past grazing and burning.

Some threats to health may be anticipated both from moving highland settlers into the malaria zone and from creating peasant villages with dense populations. In a previous section of this report, the steps taken to safeguard public health are outlined. All health programs will be controlled by the Bedele Office of the Ministry of Public Health. Included will be health inspection of new settlers (Government policy requires that settlers be of good health), elimination of insect vectors, provision of prophylactic drugs, establishment of health services on-site, and instruction of settlers in sanitary means of waste disposal, etc. It is believed that these methods should prevent either debilitation of new settlers by diseases present on the project site or increase in incidence of diseases which may be carried either by settlers into the site or be common to both present and new residents. In fact, proper care should gradually reduce frequency and severity of malaria, tuberculosis, parasitic infestations, etc. Animal health plans, outlined in a previous section of this report, should provide similar veterinary guarantees.

It is noted that all mitigating measures discussed above are presently envisioned as part of the project implementation scheme and will have no additional effect on project costs.

VII. THE RELATIONSHIP BETWEEN LOCAL SHORT-TERM USES OF THE ENVIRONMENT AND MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITIES.

If it is granted that the most productive long-term use of the Project Area is intensive rainfed agriculture production, there is no apparent conflict between short and long-term uses thereof.

There will be some temporary environmental degradation due to noise, dust, etc. during the process of construction of roads, Project Farm facilities, etc. This degradation will be very local and short-term. Except for some school buildings, all major construction will end in Project Year Four and most must be completed earlier to ensure success of the project. Once the facilities are open to their final use, such disturbances will end and the long-term benefits of the roads, Project Farm, human and animal health facilities, water supply system, schools, police post, etc. will continue indefinitely. No barrier exists to any conversion of the land to grazing or any other use if such becomes desirable.

VIII. IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES.

Surprisingly few commitments of resources, except for the costs of the project, are expected to occur. Probably the sections of riverine forest (about 350 hectares) which require clearing for tsetse fly elimination will not readily regenerate, even if the site is abandoned, but most of the rest of the area is covered by plant communities and soils typical of disturbed areas, and would likely return to the same condition if agricultural development as envisaged in the present plan were terminated or curtailed.

Likewise, no irreversible commitment of water of soil resources would occur, any effects on either being transitory. At this stage no large scale drainage, irrigation or other alteration of natural patterns is proposed. Pesticide contamination of water or soils would undoubtedly persist for some time even if spraying were ended, but not indefinitely.

Nor is any permanent alteration of the way life of the local people likely. Settlers will derive from local peasant populations or urban unemployed and changing either of residence or of type of employment from agriculture to wage-earning if not precluded is such change should appear desirable.

IX. BIBLIOGRAPHY

Agren, G. 1972. Chemical and Biological Evaluation of Protein Quality in Ethiopian Crops and Diets. Acta. Soc. Med. Upsal. 75:257-265.

Bolton, M. 1973. Notes on the Current Status and Distribution of Some Large Mammals in Ethiopia. Mammalia. 37: 562-586.

Corbet, G.B. and D.W. Yalden, 1972. Recent Records of Mammals (Other Than Bats) from Ethiopia. Bull. British Mus. (Nat. Hist.) Zool. 22: 213-252.

Dunbar, R.I.M. and E.P. Dunbar. 1971. Ecology and Population Dynamics of Colobus guerera in Ethiopia. Folia Primatologia. 21: 188-208.

Golato, C. 1972. Septeriosi del Sedano in Ethiopia. Riv. Agric. Subtrop. Trop. 66: 66-68.

Golato, C. 1972. Ruggine della fava (Vicia faba L.) in Ethiopia. Riv. Agric. Subtrop. Trop. 66: 302-306.

Iwamoto, I., I. Toda and T. Wonde. 1972. Incidence and Clinical Manifestation of Onchocerciasis in Endemic Foci of Ilubabor Province, Ethiopia. Trop. Med. 15: 36-45.

Kenneth, R. 1973. Plasmoporra penniseti sp. nov., a Downy Mildew of Pearl Millet in Ethiopia. Trans. British Mycol. Soc. 60: 590-593

Lemma, A., W.A. Foster, T. Gemetchu, P.M. Preston, A. Bryceson and D.M. Minter, 1969. Studies on Leishmaniasis in Ethiopia. I. Ann. Trop. Med. Parasitol. 63: 455-472.

Mariam, M. W. 1970. An At s of Ethiopia.

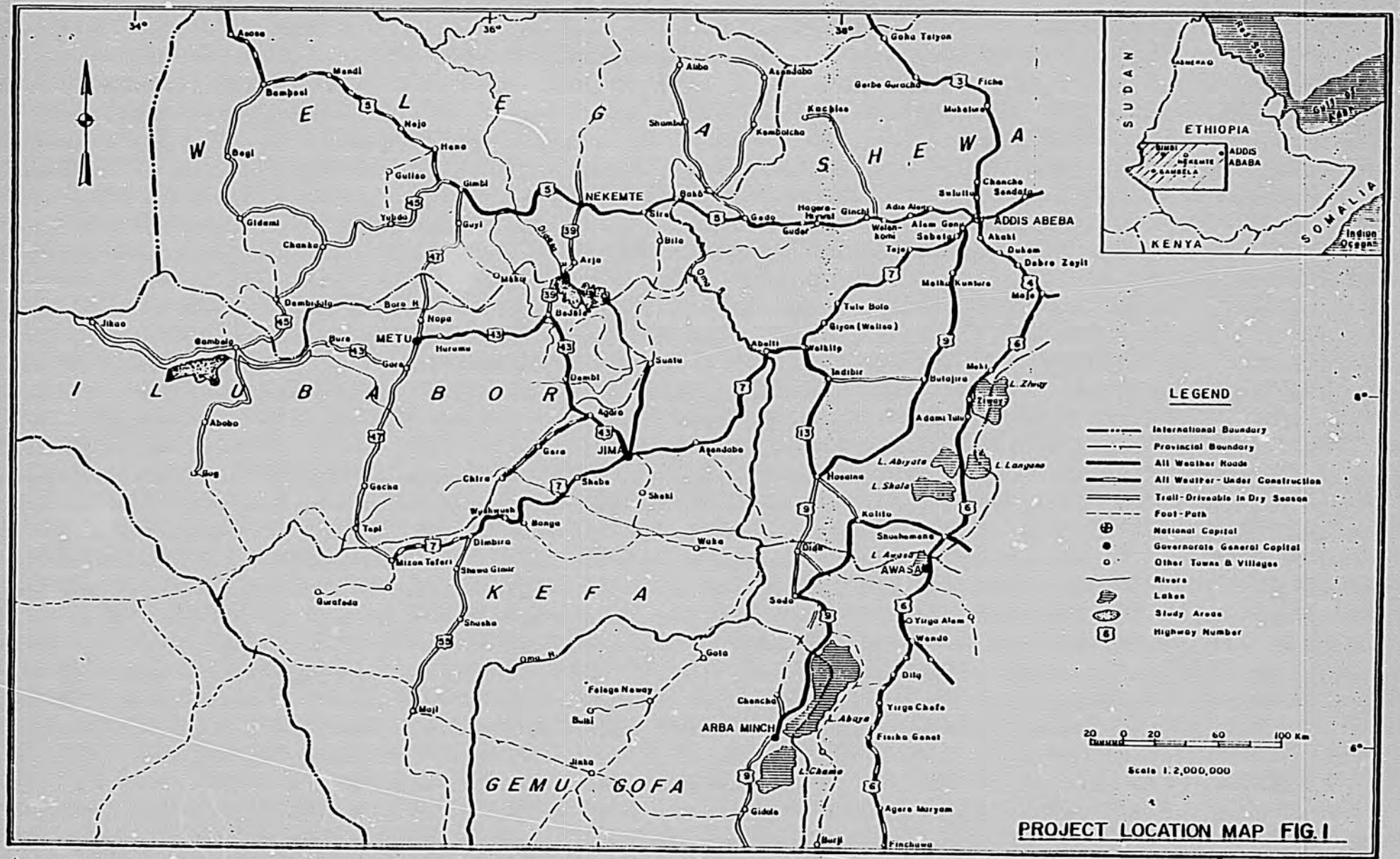
Mohr, P.A. 1970. The Geology of Ethiopia.

O'Connor, C.T. Jr. 1967. The Distribution of Anopheline Mosquitos in Ethiopia. Mosquito News. 27: 42-54.

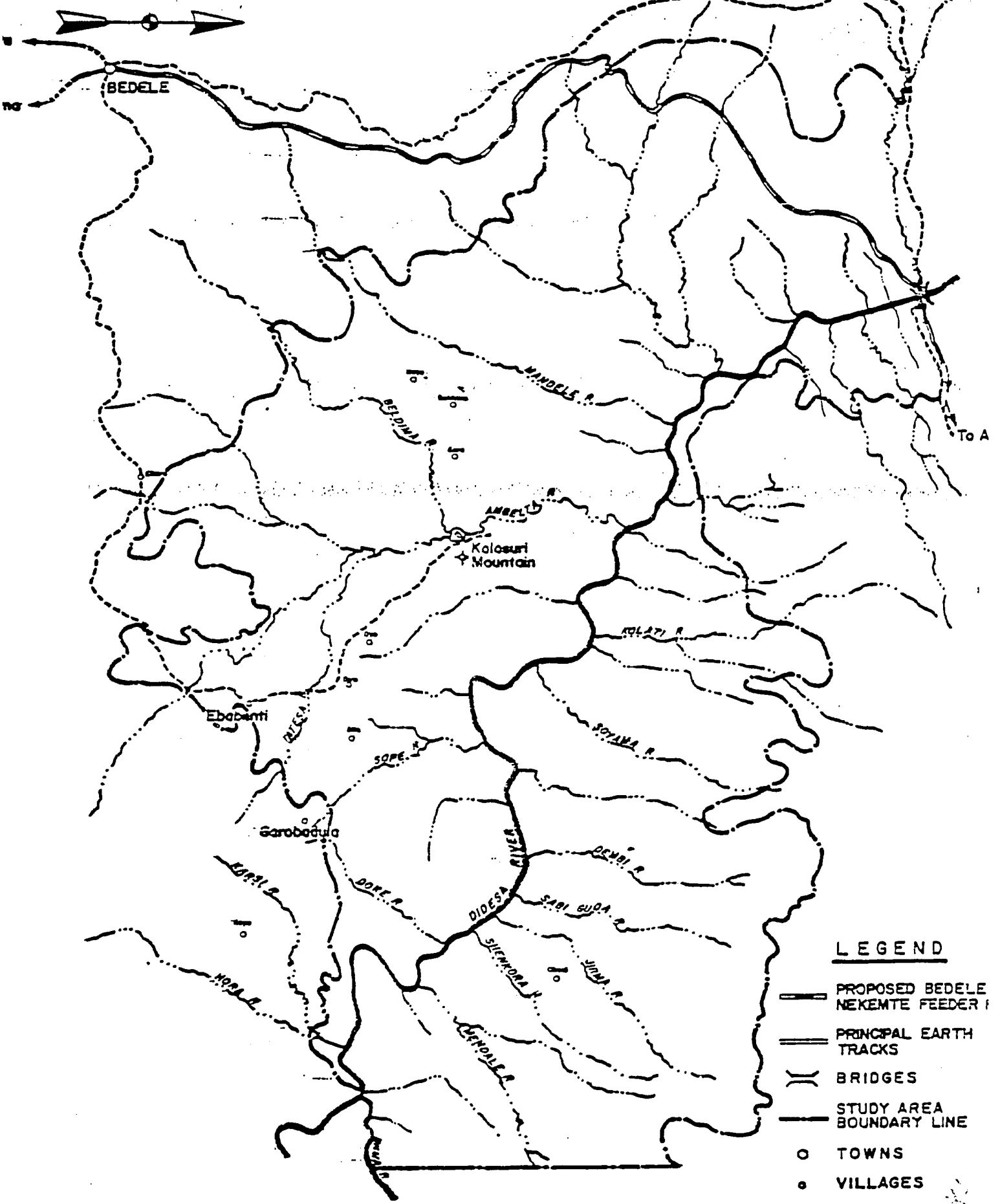
Schaller, K.F. 1971. Zur Leischmeniasis in Aethiopia. Z. Tropenmed. Parasitol. 22: 235-242.

Schmutterer, H. 1971. Contribution to the Knowledge of the Crop Pest Fauna in Ethiopia. Z. Angew. Ent. 67: 371-389.

Simpson, G. 1976. Government Policy on Settlement and Potential Settlers for the Upper Didesa Project. Prepared for United States Agency for International Development.



PROJECT LOCATION MAP FIG. 1


BEDELE
MANDELE R.
BELDIMA R.
AMBELO R.
Kolosuri Mountain
KOLATI R.
Ebabenti
RIESA
SOPE R.
SOYAMA R.
Garobadula
DEMRI R.
DOKE R.
DIDESA RIVER
SAGI GUDA R.
SHEMKORA R.
JIJIMA R.
MOGALE R.
MENDALE R.
To A
LEGEND
PROPOSED BEDELE NEKEMTE FEEDER
PRINCIPAL EARTH TRACKS
BRIDGES
STUDY AREA BOUNDARY LINE
TOWNS
VILLAGES

926

LAND CAPABILITY CLASSIFICATION FIG. 4

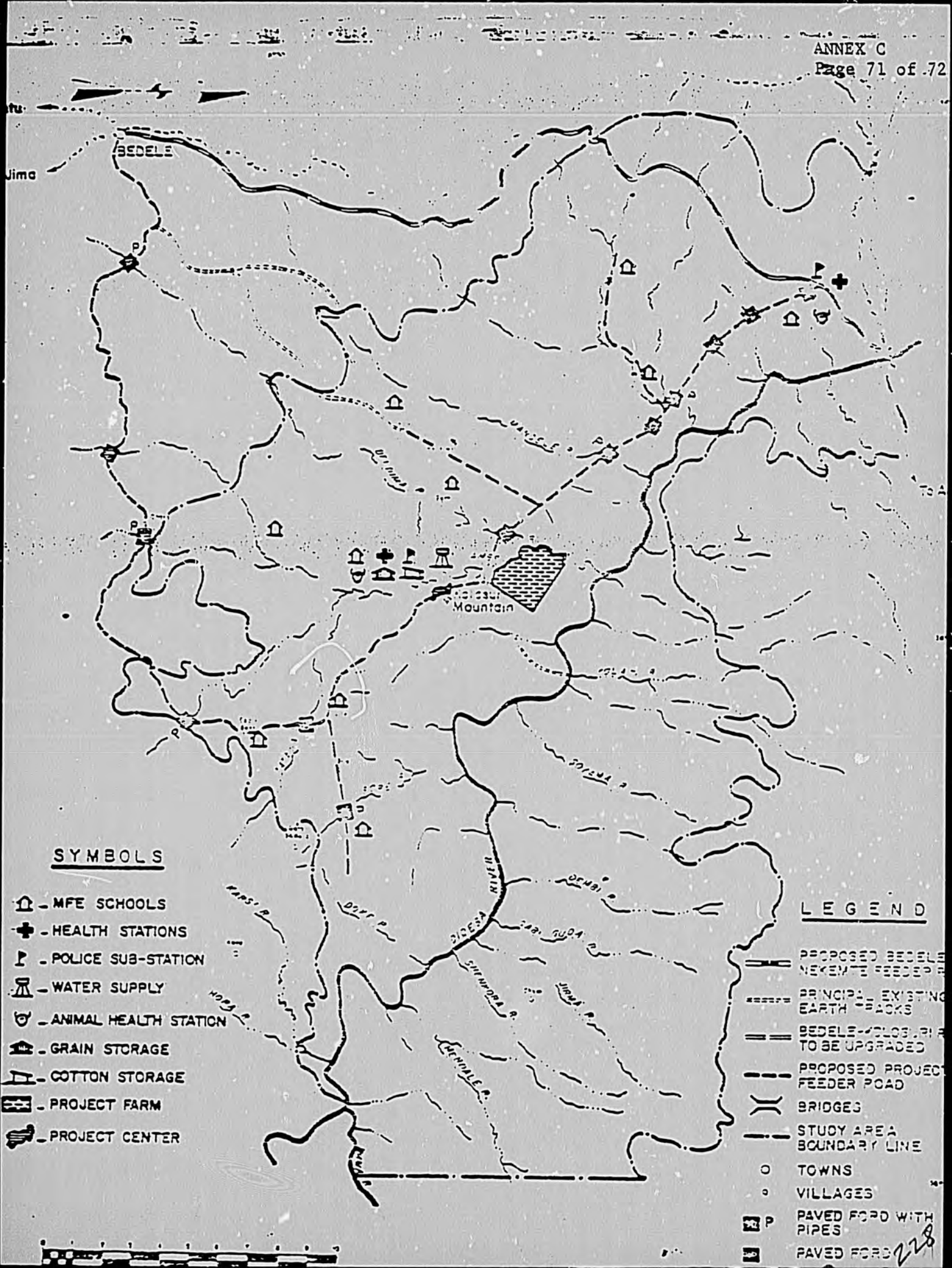

BEDELE
Jimma
P
Mountain
SYMBOLS
MFE SCHOOLS
HEALTH STATIONS
POLICE SUB-STATION
WATER SUPPLY
ANIMAL HEALTH STATION
GRAIN STORAGE
COTTON STORAGE
PROJECT FARM
PROJECT CENTER
LEGEND
PROPOSED BEDELE NEKEMTE FEEDER R
PRINCIPAL EXISTING EARTH TRACKS
BEDELE-KOLOBA R TO BE UPGRADED
PROPOSED PROJECT FEEDER ROAD
BRIDGES
STUDY AREA BOUNDARY LINE
TOWNS
VILLAGES
PAVED FORD WITH PIPES
PAVED FORD

Figure 6

REDUCED MATRIX EVALUATION,
ENVIRONMENTAL IMPACTS CAUSED BY PROJECT

	Alteration of Ground Cover	Burning	Flow Modification	Highway and Bridges	Barriers, Incl. Fencing	Product Storage	Erosion Control and Terracing	Fertilizer Application	Trucking	Weed Control	Insect Control
A. Physical and Chemical Characteristics											
Soils	+3/4	2/7		2/1			+4/7	+4/8	1/2		2
Surface Water			1/1					1/1			
Water Quality										3/2	4
Recharge			1/1								
Air Quality		1/4									1
Erosion	1/2			2/1			+6/8				
Deposition	2/1						+4/2				
B. Biological Conditions											
Trees	8/8										
Shrubs	8/8										
Grass		+6/8									
Crops	+9/9						+5/7	+5/6		+2/3	
Barriers	+7/7				+8/10					+2/1	
Corridors	+2/5			1/3							
Birds	3/8										3
Land Animals	3/8	-2/4									2
Insects	8/9										+7
Barriers	+5/7				+8/10						+2
Corridors	+1/4			1/3							
C. Cultural Factors											
Grazing		+7/8									
Agriculture	+9/9				+8/5		+5/7	+5/6		+2/3	+5
Residential											+2
Commercial				+8/8		+5/4			+6/5		
Cultural Patterns						+2/1	+2/	+2/1		+1/3	+1
Health and Safety	+4/7	3/3	+2/5		+5/8						+5
Employment				+5/2					+1/2		
Population Density				+6/5							+2
Transportation Network				+9/9					+2/4		

LOGICAL FRAMEWORK MATRIX

Project Goal	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
To achieve a more equitable income distribution, increase food production and improve the quality of life for the rural farmer.	1. A new low land area has been settled by indigenous groups and Highland immigrants and is developed through GOE agricultural programs.	1. Land Settlement Authority Reports.	1. GOE will implement land use and settlement policies that will stimulate development of new lands.
Sub-Project Goal To find the best means of opening up new lands for settlement of large numbers of the landless and/or unemployed peasant farm families of Ethiopia	2. Employment opportunities have increased.	2. Peasant Association records	2. Favorable tax and agricultural price policies and guidelines will be followed to stimulate farmer incentive to produce.
	3. Peasant organizations have identified and begun working towards what they consider a better quality of life.	3. Ethiopian Statistical Abstract.	3. Adequate markets exist to absorb surplus production not needed in the Didessa Valley area.
	4. Production of food increased by 32,000 MT of grains by FY 1980.		4. Farmers will be receptive to the introduction of cooperative farming.
	5. Data available for the GOE to utilize in determining nation-wide settlement policy and programs.		

ANNEX D
Page 1 of 8

Purpose	Conditions At The End Of the Project Year 4 (FY 1980)	Means of Verification	Important Assumptions
To establish a comprehensive settlement/resettlement and agricultural/rural development model by settling 6,800 farm families in the Upper Didesa Valley from which tested hypotheses about settlement can be replicated in other lightly populated areas of Ethiopia.	1. The project area (17,000 hectares) has been settled by 6,800 families, i.e. 2,000 families settled by March 1977; 4,400 families settled by January 1978; 6,800 families settled by January 1979; and viable, self-sustaining agricultural improvement activities are underway.	1. Land Settlement Authority reports.	1. The sociological factors of mixing various tribal groups in the new settlement area can be resolved.
	2. Per capita net income (in US$) from production has reached Year 1 2 3 4 40 84 126 202	2. Production records of the peasant associations.	2. Indigenous groups and highland farmers will repond favorably to the inducements to settle in the new area.
	3. A road net work has been constructed giving the project area access to all-weather roads and markets. Construction Schedule Kilometers per Year 1977 1978 1979 1980 Total 50 20 15 - 85	3. Visual inspection and marketing reports.	3. LSA will be effective in co-ordinating outside agencies to work in the Upper Didessa region.

ANNEX D
Page 2 of 8

Purpose	Conditions At The End Of the Project Year 4 (FY 1980)	Means of Verification	Important Assumption
	4. The project area is being serviced by existing agricultural development agencies (EPID, MOPH, LSA, etc.) through peasant associations in the area.	4. Reports of individual agencies serving the region.	

# of PAs 1/	Crop Year 1977	1978	1979	Total
5	2000	-	-	2,000
6	-	2400	-	2,400
6	-	-	2400	2,400
17	2000	2400	2400	6,800

5. The prevalent human and animal diseases are controlled in the area. 5. Health clinic reports.

1/ 400 farm families each

ANNEX D
Page 3 of 8

Outputs	Output Indicators	Means of Verification	Important Assumptions
1. Adequate manpower has been trained to carryout the settlement program and agricultural development of the area.	1. A project director, senior settlement officer agricultural economist, other middle level officers on board by August 1976. Senior and junior extension agents are trained and in place. Extension Agent Schedule Year 0 1 2 3 4 Senior Agents 2 4 6 5 2 Junior Agents 20 44 58 46 24	1. Land Settlement Authority Records.	1. Technical conclusions from the TAMS feasibility study are valid, manpower available and willing to accept training.
2. Access roads upgraded have been constructed in the project area.	2. 85 kilometers built. Kilometers per Year 1977 1978 1979 Total 50 20 15 85 2/	2. LSA records and visual inspection.	
3. Water supply system developed.	3. Water system functioning for the project center site and project farm by year 2 (FY 1978). Providing an output of 4 liters per capita/day. (See table next page)	3. Water resources records and visual inspection.	3. Didesa river capable of providing required quantities of water.

2/ 50 kilometers upgrading and 35 kilometers new roads.

Outputs	Output Indicators	Means of Verification	Important Assumption

Project Year | Estimated Population | Consumption (cubic meters) | Consumption (000 gals)

2	4,000	28,000	7,370
3	7,000	100,000	26,330
4	10,000	145,000	38,170

4. A tsetse fly control program is operative on 22,665 hectares

4.

(Hectares)	1977	1978	1979	1980	Total
Buffer Zone Cleared	11,500	-	-	-	11,500
Tributary Didesa River Strips	200	25	25	20	270
Project Farm, Other	25	25	25	20	95
	400	40	-	-	800
Total	12,125	90	50	40	22,665[1/]

4. Review of health clinic records, livestock program records, reveal number of new cases of trypanosomiasis.

4. It is feasible to control tsetse fly in area.

1/ The rest of the project/area will eventually be cleared by settlers on a cooperative basis.

Outputs	Output Indicators	Means of Verification	Important Assumpti
5. Project area has been surveyed and mapped for future expansion of settlement in the area.	5. Prject boundry staked, village sites mapped, cooperative farms mapped, mapping of roads and other infrastructure is completed by year 3 (FY 1979). Project Year / No. of Survey Parties / Field Time Months 1977 — 3 — 6 1978 — 3 — 6 1979 — 3 — 6	5. Survey team reports.	
6. Cropping system has been tested in the settlement area.	6. A rotation system involving maize, sorghum, and chickpeas has been established on 13,600 hectares: Cultivated Hectares Per Year 1977: 2,000; 1978: 6,400; 1979: 11,200; 1980: 13,600	6. Peasant Associations records, LSA reports, EPID reports.	
7. Livestock program has been introduced.	7. Livestock herds of an 1,500 LSU's are being built up by each Peasant Association. - two livestock health facilities have been established, one by January 1978 and the second by June 1980.	7. Livestock program reports.	
8. A project farm (800 ha.) has been established and staffed for testing, demonstration and seed multiplication.	8. A farm manager, 2 assistants and eight lowlevel personnel have been hired. An office, staff housing and fencing have been constructed and vehicles purchased, by January 1979.	8. LSA reports, inspection.	8. Required expertise Available and can be emplied.
9. Equipment for the preparation of seed beds has been acquired.	9. 8 sets of equipment (tractors and implements) purchased and in use, seven sets available by March 1977, one additional set available by March 1978, ~~purchased and in use~~	9. Purchase records visual inspection.	

Outputs	Output Indicators	Means of Verification	Important Assumptic
10. Credit available for farmers.	10. One credit supervisor and two staff in place by December 1976.	10. Credit records.	

Revolving Loan Fund	1977 #of PAs	1977 US$ (000)	1978 #of PAs	1978 US$ (000)	1979 #of PAs	1979 US$ (000)	1980 #of PAs	1980 US$ (000)	Total #of PAs	Total US$ (000)
Loan made	5	220	11	523	12	787	6	844	17	2376
Recovery	N/A			203		478		795		1476

Outputs	Output Indicators	Means of Verification
11. Storage and marketing system established.	11. Eight grain storage bins with 1,000 ton capacity each have been built on following schedule:	11. Marketing reports, Peasant Association records of storage.

Year			
October 1977	October 1978	October 1979	April 1980
1	1	3	3

- staff of 1 supervisor and 2 low-level personnel on board by October 1979

12. Public Services have been provided to settlers.

12.-Malaria control program in operation by October 1976
- 3 Health stations operating

March 1977	March 1978	March 1979
1	1	1

- 11 MFE schools established

July 1978	July 1980
5	6

- one police sub-station - year 2.

13. Management information system established.

13. Annual evaluation report prepared and submitted.

Project Inputs:

	Implementation Target Type and Quantity						Assumption for Providing Input
	Local in 1/ (E$000)	Total (US$000)	IQ FY 76	FY 77	FY 78	FY 79	
			(US$000)				
A. GOE Contribution							
1. Salaries	1,727	841	182	228	232	199	
2. Project Support	674	328	91	93	90	54	
3. Farm Supplies	123	60	5	12	21	22	
4. Credit Revolving Fund	364	177	26	58	62	31	
5. O & M	1,068	520	85	146	182	107	
6. Import duty on off-shore procurement	64	31	27	4	-0-	-0-	
Sub-Total	4,020	1,957	416	541	587	413	
B. AID Contribution							Settlement Authority Funding Account Records and/ or Line Agency Records on Fund Usage.
Loan							
1. Investment	2,761	344	388	490	301	175	
2. Commodities	236	115	8	105	1	1	
3. O & M	797	388	42	119	165	62	
4. Credit Revolving Fund	1,485	723	194	264	247	18	
Sub-Total	5,279	2,570	632	968	714	256	
Grant							
1. Technical Assistance	2,126	1,035	344	313	194	184	
2. Training	121	59	6	16	31	6	
3. Commodities	740	360	347	7	3	3	
4. Other Costs	94	46	10	12	16	8	
Sub-Total	3,081	1,500	707	348	244	201	
TOTAL	12,380	6,027	1,755	1,857	1,545	870	

1. GOE will provide funds to the implementing agency. "Settlement Authority" and/ or Line Agencie agree to provid funding as outlined in Table 1 on page 12.

2. AID will provide the required loan and grant funds.

1/ Exchange Rate: Eth.$2.054 = US$1.00.

PROJECT PERFORMANCE TRACKING NETWORK

The principal development activities of the project are identified below and also are shown in graphic form on the following PPT. The numbers in parentheses below correspond to the same numbers shown on the PPT:

1976

June: Project Paper submitted to AID/W.

July: Project authorized and the Government of Ethiopia (GOE) makes funds, people, equipment, and necessary organizations available to start activities numbered on the PPT as 4, 5, 7, 8 - 11, and 21. (1)

August: Project Agreement and PIO/T(s) issued covering grant-funded technical assistance. Draft Loan Agreement submitted to GOE. (2)

September: Loan Agreement signed, temporary project headquarters established, and malaria control activities begun. (3, 4, 5)

October: Grant-funded technical assistance team on board so that training of extension personnel, topographical surveying and contour mapping can be initiated. Project equipment specifications prepared and orders placed, first year's settlers selected and labor recruited for road up-grading and construction. Conditions Precedent to initial disbursement satisfied. (6 through 12)

November: Road construction started, settlers' Reception Center completed and topographical surveying and contour mapping of at least the area to be settled by first year settlers completed so that surveying and marking of Peasant Association farms and homesteads for first-year settlers can begin (2,000 farm families). (13 through 15)

December: Credit, as required, available to Peasant Associations. (16)

1977

January: First year extension agents training completed, marking off of Peasant Association farms and homesteads for first-year settlers completed, tsetse fly clearing begun, and design work on Kolosuri water supply system started. (17 through 20)

March:	GOE plowing equipment (provi equipment) arrives at projec of the five firstly formed a lands can begin. First heal
June:	Project Farm established and
October:	Marking of land plots for se families) begun, constructio second year extension agents are in place and constructio completed. (25 through 28)
1978	
January:	Tsetse fly buffer zone clear completed and staffed, land marked off and six more Pea
February:	Second-year settlers settle begun. (32)
March:	Second health station estab
July:	Kolosuri water system opera education schools establish
October:	Marking of land plots for t families) completed, third in place, second grain stor sub-station established. (
1979	
January:	Third-year settlers settled formed and the third health
October:	Third grain st age facilit
1980	
May:	Fourth and final grain stor established and project roa
June:	Second livestock health fac

March: GOE plowing equipment (provided until arrival of new project equipment) arrives at project site so that tractor plowing of the five firstly formed and settled Peasant Association lands can begin. First health station established. (21, 22, 23)

June: Project Farm established and staffed. (24)

October: Marking of land plots for second-year settlers (2,400 farm families) begun, construction of Kolosuri water system started, second year extension agents having been selected and trained are in place and construction of first grain storage facility completed. (25 through 28)

1978

January: Tsetse fly buffer zone cleared, first livestock health facility completed and staffed, land plots for second-year settlers marked off and six more Peasant Associations formed. (29 - 31)

February: Second-year settlers settled and tractor plowing of their lands begun. (32)

March: Second health station established. (33)

July: Kolosuri water system operating and five minimum formal education schools established. (34 and 35)

October: Marking of land plots for third-year settlers (2,400 farm families) completed, third year extension agents trained and in place, second grain storage unit constructed and the police sub-station established. (36 - 39)

1979

January: Third-year settlers settled, final six Peasant Associations formed and the third health station established. (40 and 41)

October: Third grain storage facility completed. (42)

1980

May: Fourth and final grain storage unit completed, six more schools established and project roads completed. (43, 44, 45)

June: Second livestock health facility completed and staffed. (46)

July: Terminal date for issuing loan commitment documents--TDRDA. (47)

September: A.I.D. project completed, settling 6,800 farm families into 17 Peasant Associations farming 17,000 hectares of land; per capita net income from farm production - approximately US $202; malaria and tsetse fly control programs operating effectively; a road network giving access to all-weather roads and markets constructed; and GOE providing public services throughout the project area. (48)

October: Terminal date for loan disbursements (four years after meeting initial Conditions Precedent). (49)

CY 1976
CY 1977
CY 1978
CY 1979
CY 1980
JULY
OCT
JAN
APR
JUL
OCT
JAN
APR
JUL
OCT
JAN
APR
JUL
OCT
JAN
WATER SUPPLY
LIVE STOCK TSE TSE CONTROL
SURVEYING & MAPPING
EXTENSION
SETTLERS
TECHNICAL ASSISTANCE
AID & GOE DOCUMENTATION FUNDS PROGRESSION
PUBLIC SERVICES (MALARIA, HEALTH, SCHOOLS)
CREDIT & STORAGE
EQUIPMENT
CRITICAL TASKS TO BE ACCOMPLISHED PRIOR TO OR COINCIDENT WITH AID LOAN
FUNDS BECOMING AVAILABLE
ROADS

CHECKLIST OF STATUTORY CRITERIA

In the right-hand margin, for each item, write answer or, as appropriate, a summary of required discussion. As necessary, reference the section of the Capital Assistance Paper, or other clearly identified and available document, in which the matter is further discussed.

The following abbreviations are used in the checklist:

FAA - Foreign Assistance Act of 1961, as amended

FAA, 1973 - Foreign Assistance Act of 1973

App. - Foreign Assistance and Related Program Appropriation Act, 1974

MMA - Merchant Marine Act of 1936, as amended.

I. FULFILLMENT OF STATUTORY OBJECTIVES

A. Needs Which the Loan is Addressing

1. FAA Section 103. Discuss the extent to which the loan will alleviate starvation, hunger and malnutrition, and will provide basic services to poor people enhancing their capacity for self-help.

Loan will open up 17,000 hectares of land for cultivation by 6,800 small farme families. The loan program provides basic services in developing this new settlement area.

2. FAA Section 104. Discuss the extent to which the loan will increase the opportunities and motivation for family planning; will reduce the rate of population growth; will prevent and combat disease; and will help provide health services for the great majority of the population.

Borrower will undertake malaria control measures & will finance 3 health stations in project area. Potable water will be made available.

3. FAA Section 105. Discuss the extent to which the loan will reduce illiteracy, extend basic education, and increase manpower training in skills related to development.

Borrower will finance 17 schools (grades 1 thru 4) with a capacity of 200 students per school in the project area.

4. FAA Section 106. Discuss the extent to which the loan will help solve economic and social development problems in fields such as transportation, power, industry, urban development, and export development.

Program will help to alleviate overcrowding in densel populated areas by opening up new areas for settlement and agric. development. Low cost rural roads will be constructed.

2 (V)

5. FAA Section 107. Discuss the extent to which the loan will support the general economy of the recipient country; or will support development programs conducted by private or international organizations.	Loan will help to increase agric. production by opening up new farm lands; loan is pilot project and should lead to similar projects in other areas financed by international organizations, or by the Ethiopian Government itself.
B. Use of Loan Funds	
1. FAA Section 110. What assurances have been or will be made that the recipient country will provide at least 25% of the costs of the entire program, project or activity with respect to which such assistance is to be furnished under Sections 103-107 of the FAA?	GOE will contribute $2.0 million, approximately 32% of total project costs, aimed at assistance activities prescribed in Sections 103-107 of the FAA.
2. FAA Section 111. Discuss the extent to which the loan will strengthen the participation of the urban and rural poor in their country's development, and will assist in the development of cooperatives which will enable and encourage greater numbers of poor people toh help themselves toward a better life.	Project is designed to establish 17 cooperative Peasant Assocs. each to farm 1,000 hectares of land. Program is cornerstone of borrower rural development policy and is to be model for replication.
3. FAA Section 112. Will any part of the loan be used to conduct any police training or related program (other than assistance rendered under Section 515(c) of the Omnibus Crime Control and Safe Streets Act of 1968 or with respect to any authority of the Drug Enforcement Administration of the FSI) in a foreign country?	No.
4. FAA Section 113. Describe the extent to which the programs, projects or activities to be financed under the loan give particular attention to the integration of women into the national economy of the recipient country.	Borrower's land reform program specifically confers equality to women in rights of land tillage; the newly formed Peasant Associations are directed to establish women's assocs.

5. FAA Section 114. Will any part of the loan be used to pay for the performance of abortions as a method of family planning or to motivate or coerce any person to practice abortions? No.

II. COUNTRY PERFORMANCE

A. Progress Towards Country Goals

1. FAA Ss 201(b)(5), 201(b)(7), 201(b)(8), 208. Discuss the extent to which the country is:

(a) Making appropriate efforts to increase food production and improve means for food storage and distribution.

GOE now stressing increased food production and improved marketing of agric. products. The GOE is allocating a considerably higher level of expenditures for agric. than in the past.

(b) Creating a favorable climate for foreign and domestic private enterprise and investment.

The Ethiopian Government has stated on several occasions that private enterprise and investment, both foreign and domestic, will play important roles in the Ethiopian economy. The PMG has specified those sectors of the economy where private enterprise and investment is sought, including important activities such as import-export trade, mineral exploration, petroleum distribution, and transportation. The Government issued regulations in December 1975 which set capital limits for private firms established after that date but reaffirmed the importance of such firms as well as already existing enterprises. The Ethiopian authorities, including the National Bank continue to issue import licenses with minimum complications and foreign firms have been able to repatriate profits within reasonable limits.

(c) Increasing the people's role in the developmental process.	The rural population throughout Ethiopia is building schools, water systems and farm-to-market roads with the help of several external donors as well as GOE assistance. This effort is increasing given the government's efforts in drought affected areas. In addition, the recently formed peasant associations are to be give considerable local autonomy regarding local level development decision-making.
(d) Allocating expenditures to development rather than to unnecessary military purposes or intervention in other free countries' affairs.	See D.2 below.
(e) Willing to contribute funds to the project or program.	The GOE will contribute $2.0 million to the Upper Didesa project.
(f) Making economic, social and political reforms such as tax collection improvements and changes in land tenure arrangement; 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.	The Ethiopian Government has made dramatic changes in the land system whereby the old landlord class has been abolished and former tenant farmers given permanent right to tillage. The tax system has been overhauled virtually eliminating tax evasion and non-payment by the wealthy. The government aims at increasing the involvement of both urban and rural poor in local development decision-making thru urban dwellers and rural peasant associations. Th press remains under government control. Private enterprise, although continuing to exist, is regarded with some suspicion as being "exploitative." Some members of the previous government and of the former aristocracy remain in detention without benefit of trial.

(g) Responding to the vital economic, political and social concerns of its people, and demonstrating a clear determination to take effective self-help measures.	Land reform, formation of peasant association, large-scale increases of governmer resources going to the agri-culture sector are all indi-cations of the GOE's strong commitment to the economic, social and political concerr of the Ethiopian people.
B. Relations with the United States	
1. FAA Sec. 620(c). If assistance is to a government, is the government indebted to any U.S. citizen for goods or services furnished or ordered where: (a) such citizen has exhausted available legal remedies, including, arbitration, or (b) the debt is not denied or contested by the government, or (c) the indebtedness arises under such government's or a predecessor's unconditional guarantee?	No such indebtedness is known to exist.
2. FAA sec. 620(d). If the loan is intended for construction or operation of any productive enterprise that will compete with U.S. enterprise, has the country agreed that it will establish appropriate procedures to prevent export to the U.S. of more than 20% of its enterprises annual production during the life of the loan?	Not applicable.
3. FAA Sec. 620(e)(1). If assistance is to a government, has the country's govern-ment, or any agency or subdivision thereof, (a) nationalized or expropriated property owned by U.S. citizens or by any business entity not less than 50% beneficially owned by U.S. citizens, (b) taken steps to repudiate, or nullify existing contracts or agreements with such citizens or entity, or (c) imposed or enforced discriminatory taxes of other exactions, or restrictive maintenance or operation conditions? If so, and more than six months has elapsed since such occurrence, identify the document indicating that the government, or appropriate agency or sub-division thereof, has taken appropriate steps to discharge its obligations under international law toward such citizen or entity? If less than six months has elapsed, what steps, if any, has it taken to discharge its obligations?	The GOE has established a commission to determine an equitable settlement for properties recently nationa ized. This commission is actively meeting. In connec tion with nationalization, Ethiopia has recently been named a beneficiary develo-oping country for the generalized system of preferences under the Trade Act of 1974. To be a beneficiary country it must be certified that the country is attempting to settle property claims equitably.

4. FAA Sec 620(j). Has the country permitted, or failed to take adequate measures to prevent, the damage or destruction by mob action of U.S. property, and failed to take appropriate measures to prevent a recurrence and to provide adequate compensation for such damage or destruction? — No.

5. FAA Sec. 620(l). Has the government instituted an investment guaranty program under FAA Sec. 221(b)(1), 234(a)(1) for the specific risks of inconvertibility and expropriation of confiscation? — Yes.

6. FAA S 620(c). Fisherman's Protective Act of 1954, as amended, Section 5. Has the country seized, or imposed any penalty or sanction against, any U.S. fishing activities in international waters? If, as a result of a seizure, the U.S.G. has made reimbursement under the provisions of the Fisherman's Protective Act and such amount has not been paid in full by the seizing country, identify the documentation which describes how the withholding of assistance under the FAA has been or will be accomplished. — No.

7. FAA sec. 620(g). Has the country been in default, during a period in excess of six months, in payment to the U.S. on any FAA loan? — No.

8. FAA sec. 620(t). Have diplomatic relations between the country and the U.S. been severed? If so, have they been renewed? — No.

C. Relations with Other Nations and the U.N.

1. FAA Sec. 620(i). Has the country been officially represented at any international conference when that representation included planning activities involving insurrection or subversion directed against the U.S. or countries receiving U.S. assistance?

No, as far as is known.

2. FAA Secs. 620(a), 620(n). Has the country sold, furnished, or permitted ships or aircraft under its registry to carry to Cuba or North Vietnam, items of economic, military or other assistance?

No, as far as is known.

3. FAA Sec. 620(u); App. Sec. 107 What is the status of the country's U.N. dues, assessments or other obligations? Does the loan agreement bar any use of funds to pay U.N. assessments, dues or arrearages?

Ethiopia is not in arrears in its obligations to the U.N. The loan agreeme will restrict the loan funds to the Upper Didesa program.

D. Military Situation

1. FAA Sec. 620(i). Has the country engaged in or prepared for aggressive military efforts directed against the U.S. or countries receiving U.S. assistance.

No, as far as is known.

2. FAA Sec. 620(s). What is (a) the percentage of the country's budget devoted to military purposes, and (b) the amount of the country's foreign exchange resources used to acquire military equipment, and (c) has the country spent money for sophisticated weapons systems purchased since the statutory limitation became effective.

a) It is currently estimated that 20-25% of the Ethiopian Government's FY 1976 budget will be devoted to military expenditures. This is an increase over the 15% average in recent years. b) The amoun of foreign exchange resources devoted to military procurement is increasing but precise figures are not available. c) In the context of the present situation in the Horn of Africa, no.

2. (2) Is the country diverting U.S. development assistance or PL 480 sales to military expenditures?	No.
2. (3) Is the country diverting its own resources to unnecessary military expenditures? (Findings on these questions are to be made for each country at least once each fiscal year and, in addition, as often as may be required by a material change in relevant information.)	Increasing resources have been allocated to militar expenditures due primarily to the insurgency in Eritrea, the continuing hostility of Somalia and presumably because of the possibility of conflict over the TFAI.

III. CONDITION OF THE LOAN

A. General Soundness

Interest and Repayment

. FAA Ss 201(d), 201(b)(2). Is the rate of interest excessive or unreasonable for the borrower? Are there reasonable prospects for repayment? What is the grace period interest rate; the following period interest rate? Is the rate of interest higher than the country's applicable legal rate of interest.

The loan terms are low and reasonable. There are reasonable prospects for repayment. Interest during the grace period 2%, during the repayment period 3%. The answer to the last question is no.

Financing

1. FAA S201(b)(1). To what extent can financing on reasonable terms be obtained from other free-world sources, including private sources within the U.S.?

Concessional financing is not believed available for purposes of this loan from other free world resources. Need for lenient terms, size and purpose of loan exclude consideration of other private or official US sources.

Economic and Technical Soundness

1. FAA Ss 201(b)(2), 201(c). The activity's economic and technical soundness to undertake loan; does the loan application, together with information and assurances, indicate that funds will be used in an economically and technically sound manner?

Yes.

2. FAA S611(a)(1). Have engineering, financial, and other plans necessary to carry out assistance, and a reasonable firm estimate of the cost of assistance to the U.S., been completed?	Yes
3. FAA S611(b); App. S101. If the loan or grant is for a water or related land-resources constuction project or program, do plans include a cost-benefit computation? Does the project or program meet the relevant U.S. construction standards and criteria used in determining feasibility?	Not applicable.
4. FAA S611(e). If this is a Capital Assistance Project with U.S. financing in excess of $1 million, has the principal A.I.D. officer in the country certified as to the country's capability effectively to maintain and utilize the project?	Yes, the Mission Director has so certified.
B. Relation to Achievement of Country and Regional Goals	
Country Goals	
1. FAA Ss207, 281(a). What is this loan's relation to:	
(a) Institutions needed for a democratic society and to assure maximum participation on the part of the people in the task of economic development?	The creation of 17 Peasant Assocs. under this loan is the key rural poor "institution" and will insure maximum participation of 6,800 farm families in the economic development of the project area.
(b) Enabling the country to meet its food needs both from its own resources and through development, with U.S. help, of infrastructure to support increased agricultural productivity?	This program opens up 17,000 hectares of new lands for farming, thereby increasing agric. productivity.
(c) Meeting increasing need for trained manpower?	Program will train agric. extension agents from the Peasant Assocs. to provide; technical assistance to develop 17,000 hectares of new farm lands.

(d) Developing programs to meet public health needs?	The Ethiopian Government will finance three public health units and malaria control for project area.
(e) Assisting other important economic, political, and social development activities, including industrial development, growth of free labor unions; cooperatives and voluntary agencies; improvement of transportation and communication systems; capabilities for planning and public administration; urban development; and modernization of existing laws?	By financing this model project, the lives of the 6,800 farm families will not only be enhanced but it should lead to the replication of similar projects contributing appreciably to economic, political and social development.
2. FAA Sec. 201(b)(4). Describe the activity's consistency with and relationship to other development activities, and its contribution to relizable long-range objectives.	This resettlement program based on establishing cooperating small farmer groups, Peasant Assocs., is an important part of the GOE's rural development program and is expected to serve as a model for replication on a large scale throughout Ethiopia.
3. FAA Sec. 201(b)(9). How will the activity to be financed contribute to the achievement of self-sustaining growth?	If successful the project will lead eventually to establishme of similar projects involving tens of thousands of otherwise nearly destitute farm families. These farmers will measurably contribute to economic growth.
4. FAA Sec. 201(f). If this is a project loan, describe how such project will promote the country's economic development, taking into account the country's human and material resource requirements and the relationship between ultimate objectives of the project and overall economic development.	See the Project Paper Section II.
5. FAA Sec. 201(b)(8). In what ways does the activity give reasonable promise of contributing to the development of economic resources, or to the increase of productive capacities?	See the DAP and relevant sections of the Project Paper.

6. FAA Sec. 281(b). How does the program under which assistance is provided recognize the particular needs, desires, and capacities of the country's people; utilize the country's intellectual resources to encourage institutional development; and support civic education and training in skills required for effective participation in political processes.	See comments for Items II.A. 1(a-f) of this checklist.
7. FAA Sec. 601(a). How will this loan encourage the country's efforts 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?	By opening up new land the activity will increase agric. productivity and through cooperative organizations (Peasant Assocs.) will enable many small farmers to participate in the development process. Some excess production may be sold for export. Items (b) (d) and (f) are not applicable.

8. FAA Sec. 202(a). Indicate the amount of money under the loan which is going directly to private enterprise; going to intermediate credit institutions or other borrowers for use by private enterprise; being used to finance imports from private sources; or otherwise being used to finance procurements from private sources.	The procurement of equipment and materials will be from private sources. The marketing of crops is likely to involve private buyers in the project area.
9. FAA Sec. 611(a)(2). What legislative action is required within the recipient country? What is the basis for a reasonable anticipation that such action will be completed in time to permit orderly accomplishment of purposes of loan?	None required.

Regional Goals

1. FAA Sec. 619. If this loan is assisting a newly independent country, to what extent do the circumstances permit such assistance to be furnished through multilateral organizations or plans?	Not applicable.
2. FAA Sec. 209. If this loan is directed at a problem or an opportunity that is regional in nature, how does assistance under this loan encourage a regional development program? What multilateral assistance is presently being furnished to the country?	This settlement program is designed to help Ethiopia's rural poor. It would not be practicable to establish a regional program in adjacent countries with differing priorities. The World Bank group provides substantial assistance to Ethiopia. The UN provides technical assistance.

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C. Relation to U.S. Economy

Employment, Balance of Payments, Private Enterprise.

FAA Sec. 201(b)(6); 102. What are the possible effects of this loan on U.S. economy, with special reference to areas of substantial labor surplus? Describe the extent to which assistance is constituted of U.S. commodities and services, furnished in a manner consistent with improving the U.S. balance of payments position.

The effects are beneficial. All foreign costs will be procured in the U.S. The activity will not have special reference to U.S. areas of labor surplus.

2. FAA Sec. 612(b); 636(h). What steps have been taken to assure that, to the maximum extent possible, foreign currencies owned by the U.S. and local currencies contributed by the country are utilized to meet the cost of contractual and other services, and that U.S. foreign owned currencies are utilized in lieu of dollars.

It is deemed inappropriate to attempt to use U.S. owned foreign currency in lieu of dollars to pay costs of U.S. goods and services. US-owned local currencies are not available. The GOE will contribute approximately $2.0 million to the project.

3. FAA Sec. 601(d); App. Sec. 108. If this loan is for a capital project, to what extent has the Agency encouraged utilization of engineering and professional services of U.S. firms and their affiliates. If the loan is to be used to finance direct costs of construction, will any of the contractors be persons other than qualified nationals of the country or qualified citizens of the U.S.? If so, has the required waiver been obtained?

The feasibility study supporting the project was prepared by a U.S. firm. The procurement of off-shore euipment will be performed by a U.S. firm and a technical assistance grant will provide the services of a U.S. firm to support the GOE effort.

4. FAA Sec. 608(a). Provide information measures to be taken to utilize U.S. Government excess personal property in lieu of the procurement of new items.	Excess property is not deemed appropriate for the settlement program.
5. FAA Sec. 602. What efforts have been made to assist U.S. small business to participate equitably in the furnishing of commodities and services financed by this loan?	The agency advertising requirements have been and will continue to be complied with.
6. FAA Sec. 621. If the loan provides technical assistance, how is private enterprise on a contract basis utilized? If the facilities of other Federal agencies will be utilized, in what ways are they particularly suitable; are they competitive with private enterprise (if so, explain); and how can they be made available without undue interference with domestic programs?	A U.S. consulting firm will provide technical assistance over the 4 year implementation period of the loan program. This will be grant-funded.
7. FAA Sec. 611(c). If this loan involves a contract for construction that obligates in excess of $100,000, will it be on a competitive basis? If not, are there factors which make it impracticable?	With the exception of a bridge, all construction under the program will be self-help, labor intensive. The bridge will be built by a private firm selected competitively.
8. FAA Sec. 601(b). Describe the efforts made in connection with this loan to encourage and facilitate participation of private enterprise in achieving the purposes of the Act.	Not applicable.
Procurement.	
1. FAA Sec. 604(a). Will commodity procurement be restricted to U.S. except as otherwise determined by the President?	Commodity procurement will be restricted to Code 941 countries and Ethiopia.
2. FAA Sec. 604(b). Will any part of this loan be used for bulk commodity procurement at adjusted prices higher than the market price prevailing in the U.S. at time of purchase?	No.

3. FAA Sec. 604(e). Will any part of this loan be used for procurement of any agricultural commodity or product thereof outside the U.S. when the domestic price of such commodity is less than parity?	No.
4. FAA Sec. 604(f). Will the agency receive the necessary pre-payment certification from suppliers under a commodity import program agreement as to description and condition of commodities, and on the basis of such, determine eligibility and suitability for financing?	Not applicable.

D. Other Requirements

1. FAA Sec. 201(b). Is the country among the 20 countries in which development loan funds may be used to make loans in this fiscal year?	Yes.
2. App. Sec 105. Does the loan agreement provide, with respect to capital projects, for U.S. approval of contract terms and firms?	Yes
3. FAA Sec. 620(k). If the loan is for construction of a production enterprise, with respect to which the aggregate values of assistance to be furnished will exceed $100 million, what preparation has been made to obtain the express approval of the congress?	Not applicable.
4. FAA Sec. 620(b), 620(f). Has the President determined that the country is not dominated or controlled by the international Communist movement? If the country is a Communist country (including but not limited to, the countries listed in FAA Sec. 620(f)) and the loan is intended for economic assistance, have the findings required by FAA Sec. 620(f) and App. Sec. 109(b) been made and reported to the Congress?	The President has determined Ethiopia is not a communist or communist-dominated country.

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5. FAA Section 620(h). What steps have been taken to insure that the loan will not be used in a manner which, contrary to the best interest of the United States, promotes or assists the foreign aid projects of the Communist-bloc countries?	The loan agreement will contain the standard AID provision.
6. FAA Section (636(i). Will any part of this loan be used in financing non-U.S. manufactured automobiles? If so, has the required waiver been obtained?	No.
7. FAA Section 620(g). Will any part of this loan be used to compensate owners for expropriated or nationalized property? If any assistance has been used for such purpose in the past, has appropriate reimbursement been made to the U.S. for sums diverted?	No.
8. FAA Section 201(f). If this is a project loan, what provisions have been made for appropriate participation by the recipient country's private enterprise?	This is a public services project aimed at resettling 6,800 farm families; consequently, there is no appropriate provision for private enterprise. The project will be administered by the GOE.
9. App. Section 103. Will any funds under the loan be used to pay pensions, etc., for persons who are serving or who have served in the recipient country's armed forces?	No.
10. MMA Section 901.b. Does the loan agreement provide for compliance with U.S. shipping requirements that at least 50% of the gross tonnage of all commodities financed with funds made available under this loan (computed separately by geographic area for dry bulk carriers, dry cargo liners, and tankers) be transported on privately-owned U.S. flag commercial vessels to the extent such vessels are available at fair and reasonable rates for U.S. flag vessels and that at least 50% of the gross freight revenue generated by all shipments financed with funds made available under this loan and transported on dry cargo liners be paid to or for the benefit of privately-owned U.S. flag commercial vessels?	Yes to both questions.

11. FAA Section 481. Has the President determined that the recipient country has failed to take adequate steps to prevent narcotic drugs produced or procured in, 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 United States unlawfully?	No. Ethiopia is cooperating with U.S. and international organizations in the control of narcotics and drugs.
12. App. Section 110. Is the loan being used to transfer funds to world lending institutions under FAA Sec. 209(d) and Sec. 251(h)?	No.
13. App. Section 601. Are any of these funds being used for publicity or propaganda within the United States?	No.
14. FAA Section 612(d) and Section 40 of PL 93 189 (FAA of 1973). Does the United States own host country excess foreign currency and, if so, what arrangements have been made for its release in compliance with Section 40 (FAA of 1973)?	Not applicable.
15. FAA Section 604(d). Will provisions be made for placing marine insurance in the U.S. if the recipient country discriminates against any marine insurance company authorized to do business in the U.S.?	Yes.
16. Section 29 of PL 93 - 189 (FAA of 1973). Is there a military base located in the recipient country which base was constructed or is being maintained or operated with funds furnished by the U.S., and in which U.S. personnel carry our military operations? If so, has a determination been made that the government of such recipient country has, consistent with security, authorized access to such military base on a regular basis to bona fide news media correspondents of the U.S.	Not applicable. Kagnew Station is no longer considered a U.S. Military Base.
17. FAA Section 640(c). Will a grant be made to the recipient country to pay all or part of such shipping differential as is determined by the Secretary of Commerce to exist between U.S. foreign flag vessel charter or freight rates?	No.

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18. App. Section 113. Will any of the loan funds be used to acquire currency of recipient country from non-U.S. Treasury sources when excess currency of that country is on deposit in U.S. Treasury?

No.

19. App. Section 114. Have the House and Senate Committees on Appropriations been notified five days in advance of the availability for obligation of funds for the purposes of this project?

Yes.

CERTIFICATION PURSUANT TO
Section 611(e) of the
FOREIGN ASSISTANCE ACT
as Amended

I, Dr. John L. Withers, the principal officer of the Agency for International Development in Ethiopia, do herewith certify that in my judgment, Ethiopia has both the financial capability and human resources to maintain and utilize effectively goods and services procured under the capital assistance project entitled Upper Didesa.

This judgment is based upon the record of implementation of AID-financed projects in Ethiopia and the results of the consultations undertaken during intensive review of this new project.

John L. Withers
Director, USAID/Ethiopia

10 June 1976
Date

BORROWER APPLICATION FOR ASSISTANCE

(To be added at a later date.)

DRAFT PROJECT DESCRIPTION
Annex A to Loan Agreement

A. The Loan will assist the Borrower achieve a more equitable income distribution, increased food production, and improved quality of life for the rural poor.

These objectives will be achieved through the development of 17,000 hectares of land in the Upper Didesa Valley along with the settlement of 6,800 farm families served by various agencies of the Borrower including the Ministries of Agriculture and Forestry, Lands and Settlement, Interior, Labor and Social Affairs, Public Health and Education and the Commissions of Planning and Relief and Rehabilitation and the Land Settlement Authority.

The Land Settlement Authority will be the primary implementing agent of the Loan project. It will appoint a full-time Project Director to administer and coordinate all aspects of the program.

B. Project Budget: The specific activities to be carried out under the four-year project and the amounts to be financed by A.I.D. and the Borrower are listed below:

		Summary Estimates Project Costs (in thousands U.S.$)		
		AID	Borrower	Total
1.	Extension Services	$ 30	$ 296	$ 326
2.	Project Farm	146	224	370
3.	Machinery Pool	257	154	411
4.	Livestock Health Program	53	53	106
5.	Project Loan Fund	730	221	951
6.	Storage and Marketing	222	76	298
7.	Tsetse Fly Control	178	58	236
8.	Roads	745	33	778
9.	Water Supply	364	100	464
10.	Project Support	93	638	731
11.	Surveys & Mapping	-	144	144
	Total Program	$2,818	$1,997	$4,815

The $2,818,000 A.I.D. Loan will finance all foreign exchange costs (9%) of the project and about 57 percent of the local costs. The Borrower will finance about 43 percent of the local costs.

Outside the above A.I.D.-funded components of the project, the Borrower will further commit itself to finance specific public service activities. These are: Malaria Control and the provision of health stations through the Ministry of Public Health; educational facilities through the Ministry of Education and police protection through the Ministry of Interior.

C. Schedule of Implementation: The Loan project will be implemented in accordance with the schedule of events summarized in chronological order below:

1976

September: Topographical survey and contour map preparation initiated; temporary project headquarters established; malaria control activities begun; grant-funded technical assistance team on board.

October: Conditions Precedent to initial disbursement satisfied; training of extension personnel underway; project equipment specifications prepared and orders placed; first year's settlers selected and start arriving at project site; labor recruited for road construction.

November: Road construction started; Settlers' Reception Center completed surveying and marking of Peasant Association farms and homesteads for first-year settlers begun.

December: Credit as required available to Peasant Associations.

1977

January: First year extension agents' training completed; tsetse fly clearing begun; design work on Kolosuri water supply system started.

March: Five Peasant Associations formed and settled; tractor plowing of Peasant Association lands initiated (equipment for first year plowing made available by Borrower pending arrival of new project equipment); first health station established.

June: Project Farm established and staffed.

October: Marking of land plots for second-year settlers begun; construction of Kolosuri water system started; second year extension agents selected and trained; construction of first grain storage facility completed.

1978

January: Tsetse fly buffer zone cleared; six more Peasant Associations formed; first livestock health facility completed and staffed.

February: Second-year settlers settled; tractor plowing of their lands begun.

March: Second health station established.

July: Kolosuri water system operating; five minimum formal schools established.

October: Marking of land plots for third year settlers begun; third year extension agents selected, trained and in place; second grain storage unit constructed; police sub-station established.

1979

January: Third-year settlers selected and settled; six Peasant Associations formed; third health station established.

October: Third grain storage facility completed.

1980

May: Fourth and final grain storage unit completed; project roads completed.

June: Second livestock health facility completed and staffed.

September: A.I.D. project completed, settling 6,800 farm families into 17 Peasant Associations farming 17,000 hectares of land; per capita net income from farm production: approximately US $202; malaria and tsetse fly control programs operating and effective; road network with access to all-weather roads and markets; Borrower providing public services throughout the project area.

GOE PROJECT PERSONNEL

1. Extension Service: Two senior and 20 Junior Extension Agents.

2. Project Farm: One Farm Manager, 2 Technical Assistants, 1 secretary, 8 supportive personnel and day labor as required.

3. Credit Loan Fund: One Credit Supervisor, 1 secretary, and 1 bookkeeper.

4. Storage and Marketing: One Supervisor, 1 secretary, 1 bookkeeper, and day labor as required.

5. Tsetse Fly Control: Day labor as required.

6. Management: One Project Director, 1 Senior Settlement Officer, 1 Agricultural Economist, 1 Personnel Manager, 1 Administrative Assistant, 1 Accountant, 1 Building Maintenance Supervisor, 6 middle-level personnel, 1 mechanic, 4 drivers and 10 permanent laborers.

7. Technical Assistance: One Agriculturalist, 1 Civil Engineer, 1 Accountant/Administrator, 1 Technical Assistant, and 4 middle-level personnel.

8. Surveys and Mapping: Survey parties and day labor as required.

DRAFT LOAN AUTHORIZATION

Provided from: FAA Section 103
Ethiopia: Upper Didesa Development Project

Pursuant to the authority vested in the Administrator of the Agency for International Development ("A.I.D.") by the Foreign Assistance Act of 1961, as amended, and the delegations of authority issued thereunder, I hereby authorize the establishment of a loan to the Government of Ethiopia of an amount not to exceed two million eight hundred eighteen thousar United States dollars ($2,818,000) to assist in financing the foreign exchange and local currency costs of the Upper Didesa Development Project in Ethiopia subject to the following terms and conditions:

1. Interest and Terms of Repayment: The interest on the amount of this Loan shall be three percent (3%) per annum on the disbursed balance of such amount, except during the grace period for principal repayment when the interest shall be two percent (2%) per annum. The Loan shall be repaid within forty (40) years from the date of first disbursement under the Loan including a grace period for principal repayment not exceeding ten (10) years.

2. Currency of Repayment: Payments of principal and interest with respect to the Loan shall be made in United States dollars.

3. Other Terms and Conditions:

a. Goods and services financed under the Loan shall be procured from Ethiopia and from countries included in Code 941 of the A.I.D. Geographic Code Book; provided, however, that goods and services procured with agricultural credit financed under the Loan may have their origin in any country included in Code 935 of the A.I.D. Geographic Code Book.

b. The Loan shall be subject to such other terms and conditions as A.I.D. may deem advisable.

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Assistant Administrator for Africa

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Date