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178

TABLE OF CONTENTS FOR VOLUME VIII

The Credit Programme of the Chilalo Agricultural Development
Unit (CADU) in Ethiopia

by Johan Holmberg,
SIDA

The Chilalo Agricultural Development Unit as a Program Intermediary
for Foreign Assistance in Ethiopia

by John M. Cohen
Haile Sellassie I University

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COUNTRY PROGRAM

THE CREDIT PROGRAMME OF THE CHILALO AGRICULTURAL DEVELOPMENT
UNIT (CADU) IN ETHIOPIA

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SIDA

Addis Ababa
September, 1972

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<u>Table of Contents</u>	<u>Page</u>
I. Introduction	
II. Program Characteristics	4
A. Background	4
1. Historical Summary	4
2. Relation to National Credit System	6
3. Other Programme Activities	7
4. Relation to Pre-existing Local Institutions	9
5. Agricultural Patterns and Potential	10
B. Objectives	12
1. General Objectives	12
a. Announced	12
b. Apparent	13
2. Terms of Loan	15
a. Purpose	15
b. Period	17
C. Organization	18
1. General and Local Structure	18
2. The Mechanics of Credit Provision	20
D. Beneficiaries	23
1. Selection Criteria	23
2. Graduation Policy	24
3. Number and Types	25
4. Other Sources of Credit	26
5. Profile of Farm Community	27
E. Lending Policies and Procedures	28
1. Portfolio	28
2. Interest Rates	29
3. Collateral	30
4. Other Subsidy	31
5. Appraisal Techniques	32
F. Collection	33
1. Repayment Record	33
2. Methods	36
3. Special Enforcement Procedures	37
4. Rescheduling	38
G. Costs and Finance	39
1. Portfolio Profits and Losses	39
2. Administrative Costs	40
3. Beneficiary Savings	41
4. External Finance	42
5. Institutional Solvency	44
6. Foreign Exchange Balance	45

	<u>Page</u>
H. Complementary Factors	46
1. Technology	46
a. Directing, Tying and Packaging	46
b. Programme Extension and Supervision	46
c. Other Arrangements for Technical Transfer	46
d. Nature of Technology	46
2. Supplies and Sales	49
a. Programme Supplies	49
b. Programme Infrastructure	49
c. General Access and Availability	50
d. Guaranteed Sales and Price Supports	50
e. Insurance	51
f. Other Programme Marketing Arrangements	52
g. General Marketing Conditions	52
h. Profits and Risks	53
III. Evaluation	53
A. Performance	53
1. Apparent Uses of Credit	53
2. Effects	54
a. Production and Farm Income	54
b. Technology	57
c. Savings and Other Sources of Finance	57
d. Employment	57
e. Political and Social Structure	59
3. Progress Towards Other Objectives	60
4. Image	61
a. Farmer Attitudes	61
b. General Image of Programme	63
B. Evaluation Procedures and Feedback	63
1. Programme Evaluation Procedures	63
2. Feedback and Changes in Programme	65
C. Problems	67
1. Problems at Government Level	67
2. Problems at Agency Level	68
3. Problems at Farm Level	70
D. Conclusions About Small Farmer Credit	71
1. Major Problems of Small Farmers	71
2. Role of Credit in Meeting the Problems	77
3. Credit and New Technology	78
a. Triggering Small Farmer Development	78
b. Sustaining Small Farmer Development	80
4. Conditions for Success or Failure	82
5. How Could the Programme be Improved	85
IV. Role of Technical Assistance	88
A. AID Inputs	88
B. Other Donor Inputs	89
C. Effects	91
D. Recommendations	92

- Appendix I: CADU's Organization Chart
- Appendix II: Credit Application Form
- Appendix III: Credit Sales Slip
- Appendix IV: Bi-monthly Reporting Form
- Appendix V: References

I. INTRODUCTION

Institutional agricultural credit. Ethiopian banks make only a negligible amount of credit available to farmers. Steps are underway to improve the agricultural credit system, but personnel and other constraints will make it difficult to meet even the minimal credit needs of a modernizing agriculture in the decade ahead.

Seven institutions comprise Ethiopia's banking system. Four are state-owned and three are private. The state-owned Commercial Bank of Ethiopia established in 1963 is the most important commercial bank. It finances through its 82 branches mainly short-term loans, and does over three-fifths of all banking business. Of the three privately-owned banks, the Addis Ababa Bank is the most important with 19 branch offices. The state-owned Agricultural and Industrial Development Bank (AIDB) formed in 1970 through a merger of the 20-year old Development Bank of Ethiopia and the Ethiopian Investment Corporation finances agricultural and industrial development.

The main source of banking funds is deposits, which totalled Eth. \$348 million⁽¹⁾ at the end of 1970 and increased to Eth. \$374 million at the end of June, 1971. At this date deposits by the private sector were 85% of the total (demand 30%, savings 40%, and time 15%), and the balance came from the Government. Deposits in the Addis Ababa region account for over two-thirds of the national total. Most savings are held by urban middle-income groups. The average saving was about Eth. \$1,500, a high figure which includes some institutional funds; over three-fifths were under Eth. \$200.

Most funds available to the banking system have been used for short-term commercial purposes. At mid-1971 the system's credit advances were Eth. \$410 million of which Eth. \$394 (96%) were short-term and the balance medium and long-term loans. Of these, only Eth. \$13 million were for agriculture. Of the short-term advances, only about 7% was for collecting and marketing of agricultural crops, a negligible amount in relation to agriculture's contribution to the GDP.

Commercial banks' annual interest rates to borrowers are at present: short-term 9.0 to 9.5%; medium and long-term, 9.0% to industry and 7.5 to 8.5% to agriculture. The estimated weighted average interest rates charged by banks is about 9.5%, giving a spread of about 5.6% in relation to interest paid to depositors.

At the end of 1970 loans outstanding for agricultural purposes through the banking system totalled about E\$13 million medium and long-term and about E\$28 million short-term. Medium and long-term loans were generally for production purposes to commercial farmers, while almost all the short-term loans were for marketing. Production loans from the banking system were only about a half of one percent of the estimated value of the agricultural production during that year, a negligible figure.

(1) U. S. \$1.00=E\$2.30

SUMMARY

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The Chilalo Agricultural Development Unit (CADU) is a so-called package project focusing a variety of interrelated activities on the farming population within a limited geographical area. The sine qua non of the package approach to agricultural development is this co-ordinated attack on the factors hindering development: operationally oriented research, agricultural extension, provision of inputs, availability of credit, marketing of outputs, training of staff, provision of infrastructure, activities in crop production as well as animal husbandry and forestry. CADU endeavours to encompass all parameters of agricultural development. It is therefore repeatedly stressed in this paper that credit must be viewed as one of several major programmes with which CADU is working, and it is frequently difficult to analyse the credit programme in isolation.

CADU offers to farmers a new technology for agricultural production which has been carefully adapted to the level of knowledge of the peasants. This technology is developed by CADU, disseminated to the farmers by way of an agricultural extension network, and made available to the farmers on credit through a marketing network. The rate of adoption of the innovations offered by CADU grew very rapidly during the years 1968-1971 but declined unexpectedly in 1972.

CADU has developed a well functioning system for collection of credit applications, approval of credit, distribution of inputs, and repayment. The system closely links the agricultural extension network with the marketing network ensuring that farmers purchase inputs rationally and in accordance with their needs. The machinery created for debt collection allows for final delinquency rates of about 5% of all credit granted per year.

All CADU's activities are directed towards the small farmers which are defined as farmers cultivating less than 20 hectares. In the initial years the credit programme involved also medium-sized farmers but it was found that while they benefited inordinately from the programme, they also had a worse repayment record than the smaller farmers. Following the first two years, the limit of 20 hectares was therefore imposed.

The credit programme has to date been almost solely concerned with sale of fertilizer and wheat seed, with fertilizer assuming an increasing share of total sales. However, CADU is also selling improved agricultural implements and cross-bred heifers on credit, and it is expected that sales of these items will increase in coming years.

The credit programme has been instrumental in creating substantial income increases in the project area. There is some evidence that incomes have roughly doubled in areas where CADU has been working ever since its inception and thus had maximum impact. CADU's main goal is "economic and social development", however, and there is yet but little evidence of any social development. It is hoped to gradually achieve social development by conducting the marketing and credit programme on co-operative lines thus eliciting the participation of the project area population.

The commercial banks have been cautious in providing agricultural credit, partly because of the difficulties and risks of such credit compared with commercial credit, and partly because of the interest rate structure, controlled by the National Bank, whereby depositors receive the maximum allowable interest (at 6%) on one-year deposits. This has made it difficult to attract sufficient longer-term savings to support longer-term agricultural credit.

A few loans have been made by farm machinery dealers to farmers but no precise details are available. Little is known about non-institutional sources of finance, although they are thought to provide over half the country's short-term credit at annual interest rates of 40% to 60% or more.

Since its establishment in August 1970, AIDB has spent most of its time building its organization, recruiting staff and handling problems arising from some of its newly acquired investments. Nevertheless, by July 1971 it had approved 154 loans amounting to E\$16 million. In the agricultural sector 136 loans amounting to E\$13 million were approved; 22 were for less than E\$10,000, 85 for E\$10,000 to 50,000, 24 for E\$50,000 to 200,000, and 5 were over E\$200,000. About half of the agricultural loans were for cereal production, and 15 went to co-operatives. During the period AIDB made 18 industrial and commercial loans and investments totalling E\$3 million.

These data suggest that the credit available for agricultural production purposes is negligible, and must be increased if the rate of agricultural development is to be accelerated. Unfortunately, there is very limited information available for use in designing a credit policy and system capable of meeting the changing and accelerating credit needs over the next decade. Accordingly, as part of the forthcoming IDA credit to AIDB, finance is included for a detailed survey by consultants to prepare proposals for a national agricultural credit programme with special regard to small farmers and their needs.

Small farmers in Ethiopia. Ethiopia is a country of small farmers. Some 85% of the population of 25 million are small farmers, and there are estimated to be about 4 million farms with a mean size per farm holding of 2.5 hectares. A recent survey in Gemu Gofa province showed that 92% of the cultivated holdings were less than one hectare in size, and all were less than five hectares in size. Data for other provinces are comparable for the less-than-five hectares category, but there was generally a lower percentage below one hectare in size. Holdings are also severely fragmented. A few years ago it was estimated that nearly half of the holdings in Shoa province were made up of three or more non-contiguous plots; in Gojam province this category contained 89%. Tenancy is common and many landlords are absentees. As will have been clear from the preceding discussion, the institutional credit system in Ethiopia touches only a totally insignificant and negligible fraction of the small farmers of the country, at most about one percent.

Ethiopian agriculture is characterized by low productivity despite the favourable natural conditions for farming. This low productivity is due to lacking knowledge of modern farming techniques and insufficient management, but also--and mainly--to nonavailability of yield increasing inputs, like fertilizers and improved seed, nonavailability of credit and of sound methods for making the necessary inputs and credit available at reasonable prices and in adequate quantities to small scale farmers. An efficient marketing system for farm products does not exist, and the rural feeder road network is totally inadequate.

CADU's place in small farmer development. The Chilalo Agricultural Development Unit (CADU) is a regional agricultural development programme of which credit is one of several essential components. This pilot programme was the first of what was planned to be a series of so-called comprehensive agricultural projects focusing their efforts on a limited geographical area and providing a multitude of co-ordinated services.

CADU has been important in determining the policies for small farmer development in Ethiopia. Subsequent agricultural development projects have in essential respects been modeled after CADU and adopted its package approach to rural development. Most notably, CADU has received replication on a nation-wide level through the minimum package project which aims to promote increased production by providing technical assistance and high-impact inputs such as fertilizer, seed, credit, and marketing facilities to small farmers in selected accessible areas throughout the country. Each area ("minimum package area") covers about 10,000 farmers and the project is expected to expand at the rate of 10 additional areas or 100,000 farmers per year. This programme scheduled to continue through 1975 has a loan request pending with the IBRD; other donors include SIDA, FAO, and USAID. Its total foreign assistance component for the period 1973-75 amounts to **E\$58.4 million.**

CADU's main contribution to Ethiopian agriculture has thus been to provide a design for an approach to small farmer development as well as a testing ground for methodology connected with this process. While CADU with its own activities only can reach a very small fraction of the Ethiopian small farmers, its impact in a wider perspective has been substantial since it has shown that programmes to improve incomes and expand output of small farmers can work.

II. PROGRAM CHARACTERISTICS

A. Background

1. Historical Summary

Around 1965 the Swedish International Development Authority (SIDA) was looking for new countries in which to start large-scale assistance in the field of agriculture. A working party appointed by SIDA had suggested that the "package method" seemed promising based on experiences from India, East Pakistan (Comilla) and Israel. Isolated and more narrow projects had often had limited effects due to a deficient basis for the activities and/or an unsatisfactory follow-up. Agricultural extension, for instance, was often found to be hampered by an insufficient experimental basis or a lack of means of production or credit. The working party suggested that a project of this nature be launched in Ethiopia which by the Swedish Parliament had been confirmed as one of the main recipient countries of Swedish assistance. A request for assistance in agriculture had been submitted by Ethiopia and the conditions for Swedish assistance to this country appeared favourable.

In March 1966 an agreement was concluded for an investigation of the possibilities of launching a regional agricultural development project in Ethiopia, and a project preparation team of about ten members started arriving. In October 1966 the team put forward a proposal for a project to be launched in the Chilalo awraja southeast of Addis Ababa. The project was to use the "package method" implying a local, well coordinated attack on all factors hindering rural development. The project, entitled the Chilalo Agricultural Development Unit (CADU), was to include functions for seed production, crop experimentation, agricultural extension, marketing, cattle development, forestry, infrastructure development, industry promotion. The farmers were to be introduced to use of new and improved agricultural inputs (improved seed, fertilizer, agricultural implements, etc.) which were to be made available to them on credit through a marketing system. The project would also purchase part of the farmers' output of grains and milk in order to enhance their incentives for increasing production.

The project proposal was accepted by the two participating governments in spring 1967 and an agreement was signed for the project to commence on 8 September 1967. The first project agreement period extended to July 1970; it was subsequently extended through December 1970 and then renewed again to July 1975.

Chilalo awraja is one of the three awrajas (subprovinces) of Arussi province. It has an estimated 400,000 inhabitants including some 57,000 farm households; Arussi province has about 825,000 inhabitants. The capital of Chilalo as well as of Arussi is Asella where CADU is located. The town has about 17,000 inhabitants and serves mainly as a commercial and administrative centre. It has no industry but the only secondary school in the awraja (and in the province). The only all-weather road in the project area (and in the province) leads from Addis Ababa via Nazareth to Asella, a distance of 175 km.

CADU started work in the vicinity of Asella in 1968 with the establishment of six agricultural extension areas and seven trade centres (one extension area was divided into two trade centre areas) for distribution of inputs on credit and purchase of outputs. In 1972 the project covers the entire project area with 31 extension areas and 33 trade centres; a further expansion up to about 40 trade centres is foreseen. There have been no fundamental changes in the project's design or policies since the initial project proposal of 1966, and its expansion has in large measure taken place in accordance with established plans.

When the project in 1970 was to be extended for a proposed five-year period, SIDA had recognized that the Ethiopian land holding pattern with a very high percentage of landless sharecroppers (in Chilalo estimated at some 40% of all farmers) was not conducive to rapid development of the country's agricultural sector. SIDA therefore made submission to the Ethiopian Parliament of a land tenancy legislation a condition for the continuation of the project. Such legislation was drafted and submitted in autumn 1970, and CADU was extended from 1 January 1971. However, the legislation is still before Parliament and has not been promulgated. Failing such promulgation the continuation of Swedish assistance to CADU beyond the present project period appears most uncertain, although the total duration of the project originally was put at 13 years.

It was initially foreseen that CADU towards the end of its present period would expand its activities into the other two awrajas of Arussi province. Preliminary surveys of these awrajas have already taken place. However, whether this expansion will be brought about effectively will largely depend on the fate of the land reform legislation and the continuation of Swedish assistance.

Sale of agricultural inputs on credit to farmers is but one, albeit a major one, of CADU's activities. CADU is a system for development with credit as one of several interrelated parts. In the following, it will therefore frequently be impossible to separate CADU's credit function from the remainder of the project.

II.A.2. Relation to National Credit System

Prior to the 1971/72 fertilizer distribution season (fertilizer has to be ordered in summer for delivery during late autumn to the trade centres and supply to farmers during spring and the beginning of the next summer) CADU was not formally tied to the Ethiopian credit system. Loans were obtained from AIDB to finance part of the fertilizer purchases in 1970 and 1971 but the project had full freedom also to approach commercial banks for these funds. However, in 1971 the Ministry of Agriculture adopted a policy decision to the effect that all fertilizer requirements of its subordinated units should be ordered and delivered centrally through AIDB. AIDB would retain title to the fertilizer until it had been sold to the farmer, and the fertilizer was thus delivered to CADU and other projects on consignment. Since the bank has no facilities for collection of credit applications, distribution of fertilizer to farmers, collection of downpayments and subsequent installments, an agreement was reached whereby AIDB in effect appoints CADU and other projects to serve as its agents for the provision of credit to small farmers. CADU is thus tied to AIDB and extends its banking services to small farmers.

The agreement with AIDB (which is concluded between the bank and the Extension and Project Implementation Department (EPID) of the Ministry of Agriculture to which CADU, the Minimum Package Project, and other regional agricultural development projects are subordinated) specifies that credit shall be provided for the purchase of seed, fertilizer, herbicides, pesticides, and agricultural implements only. No more than 75% of the cost of these inputs shall be granted in the form of a loan, and each borrower thus has to pay a minimum of 25% downpayment. The agreement also specifies that farmers whose holdings exceed 20 hectares shall not be eligible for credit.

In 1971 CADU extended credit worth E\$1,437,517 to small farmers in Chilalo. This corresponds to 11% of total official agricultural credit granted by AIDB. It corresponds to about 3.5% of all credit granted to the agricultural sector by the overall banking system.

II.A.3. Other Programme Activities

CADU has the following major components:

- A. Development through applied research of crop varieties, agricultural implements, cattle breeding and feeding methods, reforestation methods suitable for the project area.
- B. Provision of preventive, curative, and diagnostic veterinary services. An artificial insemination programme is in operation and the project has a bull station for production of deep frozen semen.
- C. Agricultural extension through a network of extension areas each intended to cover about 1,500 farmers throughout the project area. The agricultural extension agents disseminate information on new inputs and farming techniques.
- D. Marketing through a network of trade centres usually located adjacent to the agricultural extension offices. The trade centres sell the agricultural inputs to farmers on credit and on cash, collect downpayments and subsequent installments, stock inputs and distribute them to farmers. They also purchase farmers' output (almost exclusively wheat grains but also minor quantities of other crops as well as of milk) for subsequent resale by CADU in the open market.
- E. Co-operative promotion. CADU's long-term strategy calls for the establishment of primary co-operative societies around each trade centre and the take over of the functions of the trade centre by these societies.
- F. Women's extension through women's extension agents placed in about half of all extension areas. These agents conduct courses in literacy, gardening, hygiene, and clothes making for women.
- G. Seed multiplication on a farm covering about 950 hectares. This seed (again almost exclusively wheat) is cleaned and sold to farmers.
- H. Production of grade cattle at a livestock farm covering some 2,800 hectares, where the herd totals about 2,800 heads. Selected local cows are inseminated with imported high-grade semen to produce heifers which in their turn are inseminated and sold to farmers.
- I. Infrastructure development through the construction of feeder roads and water supplies. All-weather feeder roads are currently under construction using conventional capital intensive methods as well as labour intensive techniques. Water supplies are provided through the construction of bore holes, wells, and ponds.
- J. Construction of buildings for CADU. During the past year a variety of project staff quarters, office buildings, and warehouses were erected. Experiments have been made with self-help housing techniques.

- K. Training of extension agents and trade centre foremen in an agricultural school, where trainees are subjected to a course of 22 months' duration.
- L. Industrial development is to be initiated by way of a small scale industrial programme. A number of feasibility studies on possible industrial projects have been carried out, but the programme has not yet been launched.
- M. Continuous built-in evaluation of project performance through an internal reporting system as well as extensive surveys in the project area. Forecasting and a variety of economic analyses are also carried out.
- N. The project has administrative and other common service facilities which include the operation of a fleet of about 75 vehicles, administration of some 650 contract employees including 20 expatriate specialists, boarding facilities, a staff shop, maintenance, etc.

Reference is made to CADU's organization chart in Appendix I.

All of CADU's various activities are focused on small farmer development. Sale of inputs on credit and on cash is done only to farmers cultivating less than 20 hectares. Extension services are provided only to small farmers. Purchases of outputs are made only from small farmers. Maximization of benefits for small farmers guides the constructions of feeder roads. Only agricultural implements suitable for use by small farmers are developed and sold.

II.A.4. Relation to Pre-existing Local Institutions

CADU does not compete with any other local institutions. While the Wollamo Agricultural Development Unit (WADU) was initiated by the IBRD slightly before CADU, it has long since been overtaken by CADU in terms of scope of operations and rates of expansion. Within Chilalo CADU performs the functions of some governmental agencies; thus CADU serves as provincial veterinary office, as the extension arm of the Ministry of Agriculture, of AIDB, and of the Forests Department. CADU's training function has been expanded to include trainees also from other projects under the Ministry of Agriculture. Research activities are co-ordinated with those of other institutions where any risk for duplication exists; however, much of CADU's applied research work has so far been all but unique in the country.

It might be said that CADU was imposed on the existing local government structure in Asella. Without being much consulted this structure was made to conform with the project's activities, and there have been cases of friction. However, CADU has not competed with the local government administration, tried to recruit its staff or anything of that sort.

At its inception CADU was established as an autonomous unit within the Ministry of Agriculture; it was later subordinated to EPID still as an autonomous unit. Being autonomous CADU is free to recruit its staff wherever it can and without interference from the Ministry, and CADU's senior staff is therefore recruited from all possible sources. Expatriate staff is mainly recruited from Sweden.

II.A.5. Agricultural Patterns and Potential

The greater part of the project area is situated on the eastern Ethiopian Plateau at an altitude of between 1,700 and 2,900 metres above sea level. The area comprises about 10,000 square kilometres, of which about 20% is cultivated land. The climate varies with the altitude; at high altitudes the annual rainfall is between 750 and 1,500 millimetres but it decreases to about 500 millimetres in the lower parts of the project area. The maximum temperature is comparatively even (about 20-28° C), while the minimum temperature mostly ranges from 10 to 15° C. In December frost may occur. The area is estimated to include about 400,000 people including some 57,000 farm families. More than 95% of the population derive their main income from agriculture. 90-95% of the population is illiterate.

Of the area cultivated it is estimated that about 42% is sown with barley, 23% with wheat, 10% with maize, 9% with flax and 5% with teff. Wheat is the main cash crop, barley to a large extent being consumed on the farms, and wheat cultivation has expanded since the initiation of CADU. This expansion has taken place largely at the expense of land devoted to barley and to grazing land.

As a result the cattle and livestock population has been reduced somewhat in those areas where CADU's activities are most widespread. On an average, it has been estimated that the farm household has 10.3 cattle (4.2 cows), 4.2 sheep, 1.4 goats, 2.4 horses, donkeys, and mules and 1.5 hens. However, the numbers of livestock differ appreciably between different parts of the project area.

The return from farming was very low prior to CADU's inception. The yield of wheat per hectare was below 10 quintals, while barley gave a somewhat higher yield of about 15 quintals. Due to bad genetic capacity and deficient pasture, particularly during the dry season, the milk yield of a local cow is only about 200 litres per lactation period.

The calving intervals are very long, the calf mortality is great and the time to reach maturity is long. Compared with European conditions, the veterinary problems are enormous, with rinderpest, foot-and-mouth disease, brucellosis, parasites, etc. For African conditions, particularly on the plateau, it is comparatively favourable, particularly due to the absence of fevers transmitted by ticks.

On the crop side the diseases are many (rust, smut and fungus). The insect attacks on the plateau are not too severe. The weed problems are, however, considerable. Farming methods are crude. Fertilizer was not applied until CADU started its activities. The land is ploughed two or three times with oxen using a simple wooden plough with an iron tip that does not turn the soil but merely scratches it.

The income situation is very difficult to determine in a subsistence economy of this kind. However, the value of the production may be estimated at about E\$800 per family and year. The average farmer cultivates 3.6 hectares of land.

Chilalo does not produce anything for export. Ethiopia is a net importer of the principal cash crop, wheat. It is estimated that the area produces around 12% of the country's production of this crop.

Soils in the area are comparatively rich in organic material and have a high clay content. There is a marked deficiency of phosphorus throughout the area. There are also drainage problems, particularly south of Asella. Erosion occurs but is not very severe. An ecological research group appointed by SIDA as part of the project preparation team therefore found Chilalo suitable for intensive agricultural development.

A measure of the area's agricultural potential is provided by the following table showing yields in the area around Asella where the project has been most active. The table also gives an indication of the response of the two major crops, barley and wheat, to improved seed and fertilizer.

	Quintals per hectare			
	<u>1968</u>	<u>1969</u>	<u>1970</u>	<u>1971</u>
Wheat, local, not fertilized	9.8	12.1	13.3	19.5
Wheat, improved, not fert.	--	16.9	14.5	--
Wheat, improved, fertilized	--	20.0	19.2	23.2
Barley, local, not fert.	13.0	15.3	15.9	16.9
Barley, local, fertilized	--	--	19.2	21.5

It may be noted that Arussi is one of the richest of Ethiopia's provinces with an average return from farming and income per household much above the national average, and that this was the case already prior to CADU.

II.B. Objectives

II.B.1. General Objectives

a. Announced

CADU has the following three main goals stated by order of priority in the Plan of Operation:

(a) Achievement of economic and social development throughout the project area. The activities towards this end shall be so conducted as to ensure the participation of the project area population in and their assuming of increasing responsibility for those activities. In the conduct of these activities CADU shall endeavour to avoid adverse employment effects, to observe opportunities to create additional employment, and to direct its work towards farmers in low income brackets.

(b) The continued finding of suitable methods for bringing about agricultural development in Ethiopia when applied in an integrated manner.

(c) The creation of possibilities for the application elsewhere in Ethiopia of the experiences gained by CADU. This implies the creation of financial resources through an increase in the tax-paying ability of the project area population and the training of staff.

CADU's marketing activities, including the sale to farmers of agricultural inputs on credit, are conducted by the CADU Marketing Division, one of the three "autonomous divisions" (refer to CADU's organization chart in Appendix I). The Plan of Operation specifies regarding these autonomous divisions that "CADU shall endeavour to organize some activities as autonomous self-accounting divisions in preparation for eventual conversion into co-operative or commercial enterprises... The divisions shall aim at full cost coverage with a profit for their further development. In the operation of the divisions priority shall be given to their serving the CADU programme."

The objectives of the CADU Marketing Division, as stated in the Plan of Operation, are the following:

(a) Establishment of economic incentives by ensuring marketing outlets and fair prices, including premium for improved quality.

(b) Provision of inputs recommended by the extension service.

(c) Assistance in the acquisition of such inputs through the extension of credit.

(d) Promotion of capital accumulation for development through savings schemes.

(e) Assistance in the creation and management of co-operative societies.

CADU's Plan of Operation may be noted for its failure to provide any indicators of the rate of growth foreseen for the CADU programme in general and the marketing activities in particular. However, CADU's annual budgets provide quantified production targets for each individual activity in the project's work programme (programme budgeting). In respect of the marketing activities, these production targets specify e.g. the number of credit takers, quantity of fertilizer, seed, and other inputs to be sold, quantity of grains to be purchased etc.

It should be noted that the proviso of the first main goal regarding "participation of the project area population" in the conduct of CADU's activities has been understood to mean the eventual conversion of the CADU Marketing Division into a co-operative union. It is hoped to ensure the replication of CADU's marketing activities within this union through the objective of full cost coverage of these activities. There are therefore no subsidies built into the prices charged by the CADU Marketing Division which are calculated to include all types of cost: (the exception to this principle are expatriate staff salary costs).

There has been no major shift in the official goals since the project's start. CADU's goals and objectives are in full conformity with the Third Five-Year Development Plan which aims at developing peasant agriculture in selected areas with the assistance of comprehensive "package" projects of CADU's type. The Plan, in fact, specifically stresses the need for the "package programme" approach to development of peasant agriculture.

b. Apparent

While "economic development" and "social development" are given equal weight in CADU's announced first main goal, CADU's activities to date have been heavily biased towards economic development. In the 1972/73 budget the activities directly connected with the goal of economic development accounted for 59% of total gross project costs (i.e., total costs including expatriate staff salaries but before deduction of revenue) while activities directly concerned with social development were estimated to account for only 3% of total gross project costs. While it is conceptually difficult to draw a clear line between economic and social development, it is quite clear that the thrust of CADU's efforts to date has been directed towards the economic aspects of small-scale farmer development and that the project's marketing activities here have played a central role.

This is possibly a reflection of the composition of the project's management: both executive directors of CADU to date have been economists; all three present members of the project direction are economists; the Planning & Evaluation Section, a staff unit directly attached to the project direction, has five incumbent economists and one more under recruitment. CADU's present project direction and its staff unit thus includes posts for nine economists, four of whom are expatriates.

However, a more substantive explanation is the positive response experienced by CADU to its marketing activities from the side of the farmers. It

rapidly proved eminently possible to introduce the innovations of improved agricultural inputs and to raise the farmers' net income. The marketing activities have been fairly straight-forward to operate, certain teething problems aside, and the major problem has been of positive nature, namely coping with the rapid growth of these activities.

By contrast, the project's efforts in forming primary co-operative societies have met with scant progress and been marred by fundamental problems connected with the understanding by the farmers of co-operative principles and ideals. Further, it may be argued that first things come first: it is only after the marketing activities have reached a satisfactory scale, become self-sustaining, and involved a significant number of farmers, that any transformation of these activities into any type of co-operative mould may succeed. CADU will therefore during the coming years devote increasing attention to work on social development in general and co-operative formation in particular.

CADU's work with co-operative formation during the coming years will focus on the creation around each present trade centre of the CADU Marketing Division of a primary co-operative society that, at least nominally, is to be fully autonomous and self-sustaining. At present there are 33 trade centres within the project area, eventually there will be about 40. Over a period of several years it is thus intended that all these trade centres will be converted into co-operative societies which then will perform the same functions as the trade centres do today: collection of credit applications, distribution of inputs, collection of debt repayments, purchases of grains, etc. These societies will depend on the present CADU Marketing Division, then to be organized as a co-operative union or secondary society, for assistance regarding central purchases of the inputs, marketing of the outputs (grains and milk), advancement of funds (planned to be obtained by the primary societies on purely commercial terms from the union) and provision of other assets like stores. It is envisaged that the primary societies, in principle, will pay for all services obtained from the union at cost. Membership in the primary societies is to be compulsory in the sense that all farmers wishing to avail themselves of the services of the societies (formerly the trade centres) have to become members to be able to do so. However, membership will still be strictly limited to small farmers, i.e., farmers cultivating less than 20 hectares. To date only the first steps of this co-operative formation have been taken, and it is yet a somewhat moot point whether it will be possible to organize these small primary co-operative societies and make them self-sustaining.

CADU's marketing and credit activities have always been directed towards the small-scale farmers. Initially medium-size farmers were also allowed to make purchases. However, when it was found that they not only became the main beneficiaries but also, rather paradoxically, were the worst defaulters on the credit, they were excluded from participation. Strict limitations on the area to be cultivated by credit takers now limit CADU's marketing activities to "farmers in the low income brackets" in accordance with the project's first main goal.

II.B.2 Terms of Loan

a. Purpose

The CADU Marketing Division offers credit to eligible farmers for purchase of

- fertilizer
- seed
- agricultural implements
- pesticides and herbicides
- concentrate
- pregnant, cross-bred heifers

In 1971/72 fertilizer accounted for no less than 94% of all credit sales, and it is thus by far the dominating commodity. The fertilizer sold by CADU is called NP 18/46 containing 18 kg pure nitrogen and 46 kg P₂O₅ per 100 kg fertilizer. Fertilizer is likely to remain the commodity of overriding importance for the credit programme.

About 95% of all seed sold is wheat seed of different varieties. These varieties have been developed by the Crop & Pasture Section and the seed subsequently multiplied by the autonomous CADU Seed Division.

There has been a clear tendency for the importance of seed to decline relative to fertilizer, and the volumes of seed sold have been drastically reduced in recent years. In 1971 14,239 qt of seed were sold on credit, in 1972 only 4,664. The following table shows sales per credit taker of fertilizer and seed (in quintals):

<u>Year</u>	<u>1968</u>	<u>1969</u>	<u>1970</u>	<u>1971</u>	<u>1972</u>
Seed	5.16	5.20	1.66	0.92	0.37
Fertilizer	0.73	2.06	3.20	2.95	2.75

Sales of seed are believed to have declined because farmers are able to generate their own improved seed having once bought seed from CADU. However, the steady decline from the earlier years also indicates that use of improved seed has to be better stressed by the agricultural extension agents. The agents have not succeeded in imparting to the farmers the benefits of using improved seed.

The agricultural implements have been developed and produced by the Agricultural Engineering Section; during 1972/73 CADU will establish a separate workshop operated on commercial principles for the production of these implements. The most important implements are ploughs, harrows, oxcarts, and threshers. The ploughs and the oxcarts are improved versions of implements long existing in Chilalo, while the harrows and

the threshers have been introduced afresh. The present policy regarding the threshers, which cost over E\$3,000 each to manufacture, is to lease them to farmers; the other items are sold to farmers on cash or on credit of one to two years' duration. All these implements are adapted to the farmers' existing level of technology and are to be pulled by oxen or donkeys (the threshers have a small diesel motor). Sales of implements are yet at a low level, and in 1971/72 only 101 ploughs, 139 harrows, and five oxcarts were sold on credit to farmers. This is equivalent to less than one percent of all credit granted in that year.

Sales of concentrates, pesticides, and herbicides account for a totally insignificant part of overall credit sales (less than one percent).

The cross-bred heifers are so-called F₁ crosses between selected local Arussi cows and imported Fresian semen. They are produced by the autonomous CADU Cattle Breeding Division. The heifers are in their turn inseminated with pure-bred semen and subsequently sold to the farmers on credit or on cash. The credit sales price of one heifer is around E\$620 to be paid over a five-year period. Although the cattle herd of the CADU Cattle Breeding Division totals 2,800 animals, sales of heifers only commenced in June 1972. During the 1972/73 budget year these sales are yet expected to account for only a minor part of total credit sales. However, if the demonstration effect of an increasing number of heifers sold in the project area is favourable, sales of the cross-bred heifers are expected to increase considerably in future years, an important aspect of CADU's efforts to diversify agricultural production and not only propagate production of wheat.

To date the two products of totally overriding importance in CADU's credit programme have thus been fertilizer and seed with fertilizer assuming a rapidly increasing share of total sales.

It should be noted in this context that farmers eligible for credit purchase may, if they wish, purchase these commodities on cash. The volume of cash sales has always been insignificant to credit sales, although the quantity of fertilizer sold on cash increased considerably in 1972. Total credit and cash sales of the two major commodities were in 1971 and 1972 respectively (quintals):

	1971		1972	
	<u>Credit</u>	<u>Cash</u>	<u>Credit</u>	<u>Cash</u>
Seed	14,239	880	4,664	740
Fertilizer	41,955	820	34,990	5,139

b. Period

Virtually all credit granted by CADU to date has been for sale of fertilizer and wheat seed. This is short-term credit with an average of eight months' duration. It is granted over one cropping season. The inputs are distributed to the farmers during planting time in May-June and the due date for full repayment of the principal is in January-February immediately after harvest.

The ploughs and the harrows are sold on credit extending over one year, the oxcarts over a two-year period. The cross-bred heifers are sold on five-year credit.

II.C. Organization

II.C.1. General and Local Structure

The whole of the CADU credit system can be viewed as consisting of four distinct sub-systems:

- (a) advice on and demonstration of the benefits of new agricultural inputs and practices;
- (b) devising a credit system that is geared towards the needs of farmers (in particular those who normally have no ready access to lending institutions) and one that is both effective and inexpensive to administer;
- (c) screening of credit-worthy farmers and making the recommended inputs available at the time and place needed;
- (d) creating a mechanism and set of procedures designed to ensure maximum area coverage and minimal default.

The project area, Chilalo awraja, has been divided into four "development districts"--the Asella Development District, the Bekoji Development District, the Kofele Development District, and the Dhera Development District. Each development district has two Agricultural Extension Supervisors and two Marketing Supervisors. Each development district is divided into extension areas, each extension area having one agricultural extension office and one trade centre. In each agricultural extension office there is one agricultural extension agent and one assistant extension agent (in some areas there are also two womens' extension agents), while each trade centre is staffed with one trade centre foreman and one assistant foreman.

The number of extension areas and trade centres in any development district varies in proportion to the size of the district and its population. Ideally, there should be about 1,500 farmers in each extension area, but the actual numbers show wide variations. The agricultural extension offices and trade centres are located in the major village or market place of each extension area.

It has been mentioned above that CADU at present has 31 extension areas and 33 trade centres. With an "ideal" population of 1,500 farmers per extension area CADU's agricultural extension and credit activities thus reach some 46,500 farmers or about 80% of all farmers in the project area (these figures are very approximate).

Each agricultural extension agent supervises around 15 "model farmers". These are elected by the farmers themselves (subject to CADU's approval) from an area with about 100 farmers. Some of the most important criteria given to farmers when they elect their model farmers are that the candidate should be a full-time farmer; that he should have resided in the area for over three years; that the area he cultivates should be as near as possible

to the average in the area (he should neither be too big nor too small); that he should have a good moral reputation in the area; that he should be receptive to new ideas.

The model farmer is expected to help transmit innovations and new agricultural practices to the 100 farmers that have elected him. He is the focal point of the extension service, and the agricultural extension agent concentrates his efforts on the model farmer. (The women extension programme is also built around the wives of the model farmers)

A committee of seven members is formed around each model farmer's area with the model farmer as the chairman, the "golmassa" (1), one elected landowner and three elected tenants as members. The agricultural extension agent acts as secretary.

Supervision of lending procedures in the field is maintained by the Extension and Marketing Supervisors. The extension agents and the trade centre foremen are provided with a detailed manual outlining the procedures. The main responsibility for correct completion of credit applications lies with the extension agents, while the trade centre foremen collect downpayments and subsequent installments, distribute the inputs, etc. The supervisors usually visit each extension office or trade centre once per week.

(1) A "golmassa" is an elected representative from an area of about 800 hectares. He is the last link between the local administration and the farmers. His tasks include assistance in tax collection, security, collection of data on births, deaths, migrations, etc.

II.C.2. The Mechanics of Credit Provision

In November and December, farmers are informed that they should start applying for credit from January. Applications are received in accordance with a schedule worked out by CADU on the basis of model farmer areas. Typically, however, most applications are received around May.

The farmers approach the agricultural extension agents for their applications for credit. Each farmer applying for credit is expected to have two guarantors who will also sign the application.

Before the extension agent starts filling the credit application, he checks that the farmer has settled his debt with CADU from the previous season. He also checks that if the farmer is a guarantor to another farmer applying for a loan, that farmer has settled his loan from the previous season.

If the applicant is a tenant or a landlord, he is expected to produce a written tenancy agreement acceptable to CADU or to sign one of the four model lease agreements prepared by CADU. The leases define and formalize the relationship between the landlord and the tenant. A landlord who is not willing to have written agreements with his tenants is excluded from the credit scheme (1). Since the landlord will gain from letting his tenant(s) participate (land rent is paid as a fixed percentage of the tenants participate). Most landlords are amenable to letting their tenants participate.

In the process of filling the credit application, the extension agent advises the farmer on his production pattern; on suitable varieties of seed; on the seeding rate and the seeding time; rate of fertilizer application, etc. The application form shows the applicant's production pattern and his number of cows and sheep in addition to the commodities applied for, size of downpayment, the quantity purchased of each commodity. The form is designed to allow computer processing (a copy of the credit application form is attached as Appendix II).

The application is then presented to the model farmer area committee for approval, amendment or rejection. The committee is expected to check that

- the size of cultivated land indicated in the credit application is correct;
- the applicant is credit-worthy;
- his guarantors are acceptable;

(1) In the absence of any land tenancy legislation in Ethiopia CADU cannot bring any legal pressure to bear on landlords. However, by insisting on written lease agreements as a criterion for eligibility, CADU can at least contribute to doing away with the oral agreements which place the tenant at the entire mercy of the landlord.

- they and the farmers in the model farmer area accept collective responsibility for the timely settlement of the credit.

The extension agent then passes the credit application to the extension supervisor. The supervisor checks that the application is correctly filled. He checks that the inputs applied for correspond with the size of land under cultivation; that lease agreements are attached, properly filled and signed, etc. If everything is in order, he initials the application and passes it over to the credit section of the CADU Marketing Division.

The credit section again checks the application--that the necessary supporting documents and signatures are present, that the value of the inputs and the downpayments are correct. That done, the loan agreement is prepared in two copies and passed over to the head of the CADU Marketing Division for signature.

The loan agreements signed by the head of the CADU Marketing Division are dispatched to the appropriate trade centres. The farmer and his two guarantors sign the loan agreement, and the credit sales slip prepared in four copies. The credit sales slip indicates the amount of inputs, the downpayment, and the credit, and it is also designed for computer processing (a sample copy is attached in Appendix III). The farmer collects his copy of the loan agreement, one copy of the credit sales slip, the inputs approved, and deposits the downpayment with the trade centre foreman.

The marketing supervisor collects the loan agreement and two copies of the credit slip. He adds the amount shown on the credit sales slip and counts the downpayment collected by the trade centre foreman. If these are correct, he signs a receipt in three copies, returns the loan agreement and the credit sales slip (two copies) and deposits the downpayment in the nearest bank or with CADU's central cashier.

The credit section of the CADU Marketing Division checks the loan agreement and the credit sales slip. If these are correct, a borrowers' list by trade centre is prepared in six copies, and two copies are dispatched to the extension agent and the trade centre foreman for information and follow-up.

With a volume of over 10,000 credit applications the clerical processing of these applications becomes a major task. Maintenance of adequate control over stocks in the 33 trade centres also is a difficult problem compounded by the distance between the project centre in Asella and the

trade centres and the cumbersome communications. Computer processing of the credit applications and the credit sales slips has therefore been tried since 1971, and a contract has been concluded with a service bureau in Addis Ababa. However, CADU's experiences to date from this trial have not been very encouraging. All the inputs have to be brought to Addis Ababa for punching, a major inconvenience since they are needed in the project centre (a proposal for CADU to acquire its own punching machine has not been approved for budgetary reasons). The input data are often inaccurate. The service bureau selected (the only one in Addis Ababa) developed capacity problems and has proved to be inordinately slow in producing the data lists. A proposal for EPID to rent a computer for use by all the package projects, including CADU and the minimum package project, is at the moment tabled because of the decline in CADU's credit programme 1972, and because of IBRD resistance to the idea. It appears likely that CADU will revert to manual processing of the credit applications and discontinue the trial with computer processing, since it will not be feasible for CADU on its own to rent a computer without the participation of EPID.

II.D. Beneficiaries

II.D.1. Selection Criteria

Owner-cultivators cultivating more than 20 hectares of land, and tenants cultivating more than 30 hectares are not entitled to credit or cash purchases from CADU.

Owners-cultivators cultivating 5 hectares or less and tenants cultivating 8 hectares or less pay downpayments of 25% of the value of fertilizer and 50% of the value of seed purchased. Owner-cultivators cultivating 5.1 - 20.0 hectares and tenants cultivating 8.1 - 30.0 hectares pay downpayments of 50% for both fertilizer and seed.

"Part-time" farmers, i.e., applicants who in addition to farming have other occupations (e.g., government officials, merchants) are excluded for CADU's credit programme. However, tenants working for part-time farmers are eligible.

Farmers electing not to utilize CADU's credit programme and cultivating land of the sizes indicated above, as well as part-time farmers cultivating land of the sizes indicated above, are free to make cash purchases.

Borrowers who have not settled their debts with CADU from the previous season in full within three months of the due date and their guarantors will be automatically excluded both from credit and cash purchase. Guarantors who settled half or more of the debts guaranteed will be eligible for credit and cash purchases provided they meet the criteria of land cultivated as indicated above.

A landlord who refuses to sign a lease agreement with his tenant will, as mentioned in section II.C.2, not be eligible for credit.

Farmers who have purchased inputs from CADU on credit should use these inputs on their own farms and are not allowed to sell them. If it is proven that a farmer has sold inputs purchased from CADU, he will be excluded from any further purchases.

Credit is given only when the total value of the inputs is equal to or exceeds the value of one quintal of fertilizer (in 1972 equivalent to E\$38). The minimum quantity of wheat seed that may be purchased is 100 kg.

CADU has no other selection criteria than those indicated above in addition to approval by the model farmer area committee of the credit application. It is seen that, if anything, the criteria are biased in favour of the tenants and smallest owner-cultivators.

II.D.2 Graduation Policy

CADU does not attempt to graduate successful borrowers in any respect. There is one bank office in the entire project area (in Asella), and there is no practical possibility for the small-scale farmers eligible for credit from CADU to obtain credit from the general banking system, neither is there any evidence that this may take place in the future. CADU is at present carrying out a study of the possibilities of establishing a rural savings institution, possibly in a co-operative form and operating through the present trade centres. If and when such an organization is established, it might be in a position to provide farmers with short-term cash loans. Such loans would then presumably be linked to the credit taker's performance in CADU's credit programme.

II.D.3. Number and Types

The following table shows the number of credit takers since the inception of CADU, and the total amount of credit provided per annum since that time:

<u>Year</u>	<u>Number of Beneficiaries</u>	<u>Amount of Credit</u>
1968	189	15,700
1969	868	158,461
1970	4,769	502,875
1971	14,146	1,437,517
1972	12,480	1,063,120

It is seen that the programme expanded very rapidly through 1971 and then experienced a sudden decline in 1972. The forecasted number of credit takers in 1972 had been between 20,000 and 25,000 and the decline was fully unexpected. Although the reasons for the decline are not yet fully understood (a study of these reasons has recently been launched) it is believed that the falling wheat prices provide a major explanation. In 1971 CADU paid farmers an average price of E\$23.15 per quintal for wheat grains, in 1972 the price was E\$19.19. This fall in the price of the farmers' major cash crop may have served to dissuade them from buying inputs. Further, it should be noted that an unusually large volume of fertilizer was sold on cash in 1972. With a "normal" volume of cash sales and assuming the large volume sold on cash had been sold on credit, the number of credit takers in 1972 would increase by about 1,500 and the amount of credit granted by about E\$164,000 over the figures shown in the table.

In section III.A.2a a table is provided showing a breakdown of the beneficiaries during the four first years of the credit programme by land tenancy status and by size of holding of landowners. The table shows that for 1971, the most representative year of the four, 96.2% of all beneficiaries were either tenants or landowners cultivating 10 hectares or less.

II.D.4. Other Sources of Credit

One survey carried out in 1969 showed that 51% of all farmers interviewed had been indebted in the previous 12-month period. This figure is likely to vary cyclically over the year and to be lower just after harvest and higher just before harvest, when the poorest farmers may be obliged to borrow for food. The average amount of debt per indebted farmer was then E\$130 and the average interest rate the loans carried was 70%; the rate of interest for cash loans was 120% per annum. Interest rates of 20% per annum have been observed. At these rates credit is available from large-scale landowners, merchants, local notables, etc.

There is some evidence that farmers' need for credit from these sources is declining as a result of CADU's activities. A case study carried out in the vicinity of Asella where CADU has been working ever since 1968 showed that although 55% of the studied farmers had taken a loan in the 12-month period covered by the study, the average loan was only E\$55.65 and the annual interest was around 12%. The study noted that "there is little uniformity of credit conditions. Sometimes the effective interest is extremely high, sometimes no interest at all is charged. The loans are not systematically given or taken but rather a means to help or to be helped in periods of temporary need. Often the interest free loans are in fact exchanges of services".

In addition to CADU, the only sources of credit available to small farmers in Chilalo are the traditional: local moneylenders, merchants, friends, relatives, etc. This matter is also discussed in section III.D.3.a below.

II.D.5. Profile of Farm Community

It has been estimated that the farmers participating in CADU's credit programme cultivate a median area of 3.4 hectares (landowners 4.5 hectares, tenants 2.9 hectares). Since the maximum area to be cultivated by a participant in the credit programme is 20 and 30 hectares for landowners and tenants respectively, it is clear that the land distribution is very skewed towards holdings of 5 hectares or less. In excluding farmers cultivating holdings larger than 20 hectares CADU is not excluding more than one or two percent of all farmers in the project area.

If there are about 57,000 farm households in Chilalo, the 12,480 credit takers of 1972 correspond to about 22% of all farmers in the project area. If it is estimated that about 46,500 farmers are reached by the project's extension and credit activities (see section II.C.1), CADU has succeeded in eliciting the active involvement of 27% of those farmers.

Although the vast majority of peasants have holdings smaller than 10 hectares, the land distribution is, as indicated above, very skewed and there are a few landowners with very large holdings. Particularly in the northern part of the project area, where the land is flat and suitable for mechanized farming and where communications are good, there are vast tracts of land cultivated by medium to large-scale farmers. There are cases of holdings exceeding 1,000 hectares. These farms are interspersed with the small holdings of farmers eligible for credit from CADU. Their operations are usually heavily mechanized and they have ready access to credit from the regular banking system. This mechanized farming has expanded at the expense of displacement of tenants after the initiation of CADU, as CADU has demonstrated to large-scale landowners how profitable farming based on wheat can be if the proper inputs are used. It is estimated that about 10% of the area cultivated in Chilalo is under mechanized cultivation.

II.E. Lending Policies and Procedures

II.E.1. Portfolio

The table in section II.D.3. showed the number of beneficiaries and the amount of credit granted per year since the inception of the programme. As the preceding discussion should have made clear, virtually all credit granted by CADU to date has covered purchases of fertilizer and wheat seed. These inputs are applied for by the farmers ahead of the planting season, and the credit is repaid after harvest. The farmer's credit application is prepared by the extension agent after an assessment of the farmer's land use pattern, and the inputs approved shall be in conformity with this pattern. It follows that a farmer is unlikely to have more than one application made for inputs since the amount of inputs is expected to square with his holding. While it may be possible that a farmer at two different times has applied for fertilizer and/or seed and for agricultural implements or for cross-bred heifers, these other commodities have so far been sold in so insignificant quantities that this is negligible. There is thus no rule against a farmer having more than one loan for different purposes, but this has not occurred to any significant degree to date. It has certainly not occurred among the farmers applying only for fertilizer and/or seed.

It is clear that there are large numbers of farmers who apply for credit repeatedly year after year, but no analysis has been carried out to determine the extent of such recurrence. There are no restrictions on the number of loans that may be made to the same farmer.

II.E.2. Interest Rates

The agreement between AIDB and EPID (of which CADU is a part) specifies that "the Bank shall receive interest calculated at the rate of 10% per annum out of the interest to be charged to any borrower in any project area". CADU charges the farmers interest at 12% per annum. This rate of interest has so far applied to all types of credit granted by CADU. Inflation is no problem in this context.

II.E.3. Collateral

There is no form of collateral required. Refer to section II.D.1. for a description of the criteria for eligibility.

II.E.4. Other Subsidy

As mentioned in section II.B.1.a., CADU's policy has been to let the beneficiaries at the outset absorb all costs of the marketing activities and to enable the CADU Marketing Division to break even (and if possible make a profit) on purely commercial terms. Expatriate staff salaries are an exception to this rule, and pro forma salary costs for Ethiopian staff occupying the corresponding posts are instead used in the cost calculations. There are no subsidized interest rates. The farmers pay the full cost of production of the agricultural implements and of the cross-bred heifers.

Naturally, however, the farmers do not in the prices carry the cost of all CADU nor do they carry the cost of the agricultural extension programme which is closely tied in with the credit activities.

There was, however, a subsidy built into the fertilizer prices in 1972. CADU's fertilizer requirements were merged with the requirements of all other units affiliated to the Ministry of Agriculture, and a central order was placed by AIDB for the total quantity. This order thus included the minimum package project which conducts activities all over the country. Since transport costs within Ethiopia greatly affect the fertilizer price to the farmer (transport costs are estimated at E\$0.01/km/quintal and might make a farmer in the north pay perhaps 20% more for his fertilizer than a farmer close to Addis Ababa), the Ministry decided that as a matter of policy prices should be uniform throughout the country at E\$38/quintal and it subsidized any excess cost. CADU's costs per quintal of fertilizer were then estimated at about E\$40.50. It is likely that the same policy will be followed in 1973 also.

II.E.5. Appraisal Techniques

The procedure for credit application by the farmers was described in section II.C.2. When the farmer approaches the extension agent to make an application, the agent is expected to discuss in detail with the farmer his cropping pattern and farming practices. As a rule, the extension agents are unable to visit the individual farms: in one extension area there may well be around 1,000 applicants and the agent and his assistant are expected to focus their efforts in demonstrating new farming practices to the farmers in the area and in working with the model farmers. The data taken on the applicant is shown on the credit application form in Appendix II.

II.F. Collection

II.F.1. Repayment Record

The scheduled due date for full repayment of credit given for purchase of fertilizer or seed is either 15 January or 15 February depending on the area (harvest comes sooner in those parts of the project area where the altitude is lower). For any amount outstanding after the due date farmers are charged an additional fee and those farmers are thus formally defaulters. However, it would in practice be too much to expect the peasants to come punctually and pay their debts before a certain date, and while considerable amounts may still be outstanding at due date most of the credit is in fact repaid. Within three to six months after the due date, something in the order of 90 to 95% of the credit granted has in the past been repaid. Those who have not settled their debts at the expiration of the budget year following the year when the credit was granted may be considered defaulters since this is about five months after due date (for instance, credit granted in April to June 1970 should have been repaid on 15 January/15 February 1971 and those who have not paid by 7 July 1971, when the budget year expires, are the true defaulters). Thus, of the credit granted in 1970, the sum of E\$37,332 (7.4%) was still outstanding with 427 borrowers (8.9%) as of 7 July 1971. Of the credit granted in 1971 the amount of E\$147,765 (10.2%) was still outstanding as of 7 July 1972.

The "true defaulters" are taken to court. In anticipation of litigation many finally pay; others are made by the courts to pay. The final figure of funds lost is therefore close to 5% of the total credit granted.

The figure for outstanding credit as of 7 July 1972 is considered somewhat unsatisfactory. With the increased involvement of the farmers themselves in the process of credit provision and the introduction of collective responsibility for repayment (model farmer areas with particularly poor repayment rates will not receive any inputs at all in the coming season), it is expected that the rate of repayment can be improved.

An analysis has been carried out on credit outstanding at the due date by category of farmer for the years 1968-1970. While it deserves to be stressed, once again, that the amount repaid on due date is not a good indicator of the delinquency rate, there are some conclusions that may be drawn from the tables for the three years reproduced below.

1968 Credit Outstanding at Due Date

<u>Category</u>	<u>f</u>	<u>Credit Outstanding (E\$)</u>	<u>%</u>
Tenants	-	-	-
Landowners:			
(ha) 1 - 10	5	165.70	8.2
11 - 20	2	454.00	22.5
21 - 40	1	4.70	0.2
Above 40	3	1,235.60	61.3
Unknowns	6	155.24	7.7
Total	17	2,015.24	100.00

Of the total credit granted in 1968, 13% was outstanding at the due date with 9% of all credit takers.

1969 Credit Outstanding at Due Date

<u>Category</u>	<u>f</u>	<u>Credit Outstanding (E\$)</u>	<u>%</u>
Tenants	30	2,166.07	2.97
Landowners:			
(ha) 1 - 10	146	11,473.14	15.74
11 - 20	68	15,772.93	21.63
21 - 40	23	5,279.79	7.24
Above 40	29	35,717.25	48.99
Unknowns	11	2,496.00	3.43
Total	307	72,905.18	100.00

Of the total credit granted in 1969, 46% was outstanding at the due date with 35% of all credit takers.

1970 Credit Outstanding at Due Date

<u>Category</u>	<u>f</u>	<u>Credit Outstanding (E\$)</u>	<u>%</u>
Tenants	718	66,479.50	26.9
Landowners:			
(ha) 1 - 10	822	94,660.45	38.3
11 - 20	233	40,310.19	16.3
21 - 40	76	14,768.70	6.0
Above 40	31	5,710.86	2.3
Unknowns	263	25,001.26	10.1
Total	2,143	246,930.90	100.0

Of the total credit granted in 1970, 49.1% was outstanding at the due date with 44.9% of the total number of credit takers.

These tables show that the largest farmers rather surprisingly are the poorest credit risks. In 1968 the farmers cultivating above 40 hectares accounted for 61% of the outstanding credit but only for 18% of all defaulters as of due date. In 1969 this group accounted for 49% of all outstanding credit but only for 9% of all defaulters. It can only be concluded that these farmers have less respect for CADU's regulations which they presume they can disregard at will. In 1970 the stipulation of a maximum cultivated area of 20 hectares was introduced thus effectively excluding larger farmers from participation.

II.F.2. Methods

Repayment is effected in the following harvest, i.e., the credit applications are collected around April - June, harvest takes place during October - December. In order to ensure timely settlement of the credit, the CADU Marketing Division purchases grains from farmers (this is but one of the objectives of the grain purchases). Thus if a farmer brings produce worth E\$200 and his outstanding credit amounts to E\$80, he is paid E\$120 only. To encourage early settlement, interest will be deducted and a refund made to the borrower in terms of grain or money if repayment is made before the due date. Those who do not settle before the due date are made to pay an additional "collection fee" of 5% of the amount outstanding.

In order to encourage vigorous drive and competition in the collection of repayment, a bonus scheme has been worked out for the extension agents and the trade centre foremen. CADU's Information and P.R. Section keeps all extension agents and trade centre foremen informed of the rating of each extension area. The extension agents and trade centre foremen of the three best areas in terms of the rate of collection are paid bonus at a special ceremony. The Information and P.R. Section also conducts special campaigns to encourage farmers to settle their debts at an early time.

II.F.3. Special Enforcement Procedures

One month before the due date, the Information and P.R. Section reminds the farmers through its campaigns that they are to repay their credit within one month. One month after the due date warning letters are sent to all borrowers who have not settled their debt in full with copies to the model farmer area committees. To indicate the seriousness, the letters are signed by the awraja governor and dispatched through the woreda governors (1). If within yet one month the credit is still due in full or in part, further warning letters are sent signed by the province governor advising borrowers to settle their loan within 15 days. If within 15 days the credit still remains outstanding, the provincial court writes warning letters giving a further 15 days for settlement. If the farmer does not settle his credit after all this, court action is taken against him.

If 5% of the total credit in any model farmer area remains outstanding three months after the due date, the whole area is excluded from participating in the following credit season.

The procedures are considered to reduce to a minimum the possibilities of default. Nevertheless, 5% of the total credit granted is imputed into the sales price of the inputs (this amounts to E\$1.43 per quintal of fertilizers and E\$0.80 per quintal of seed at 1972 prices). This amount is thus kept as a reserve fund for bad debts.

(1) The Ethiopian provincial administrative hierarchy is province - awraja - woreda. Arussi province consists of three awrajas. Chilalo awraja consists of ten woredas.

II.F.4. Rescheduling

No rescheduling of debts is permitted under CADU's policies.

II.G. Costs and Finance

II.G.1. Portfolio Profits and Losses

Unfortunately no valid attempt has been made at CADU to calculate the capital turnover. The calculations made in the past were based on assumptions subsequently proven wrong, and it would be misleading to reproduce them here. Figures of loans outstanding at the year-end were provided in section II.F.1.

II.G.2. Administrative Costs

Specification of the administrative costs of CADU's credit programme meets with some problems of definition. If CADU is a package project with several closely interrelated activities, of which credit is one, the isolation of administrative costs for any particular activity would be arbitrary and not fully meaningful. On the other hand, it is clear that the credit programme is only very loosely connected with, say, the veterinary activities, and that some attempt to isolate the costs of this particular programme would be justified. Therefore, three different pictures of administrative costs are presented below:

1. In CADU's 1972/73 budget the costs of the project's "supporting services programme" are shown to be E\$1,952,559 equivalent to 11% of the total gross cost of the project (i.e., before deduction of revenue but including cost of expatriate staff). The corresponding percentage for 1971/72 was 17%. The supporting services programme includes all CADU's overhead costs seen from a wide perspective: economic analyses, public relations, maintenance, all types of administrative work, operation of carpool and storage facilities, boarding facilities, cafeteria, staff shop, laundry, etc.
2. The Administration Section is responsible for accounting and cashing, personnel matters, purchasing, secretarial work, legal matters, guarding of CADU property, staff clinic. Its total gross cost was budgeted in 1972/73 at E\$737,344 or about 4% of the overall gross project cost. The corresponding figure for 1971/72 was 9%; the higher figure for that year is partly due to the cost of new staff houses which was charged to the Administration Section.
3. It is reasonable to consider the CADU Marketing Division from a budgetary point of view solely responsible for the credit programme within CADU, although this ignores the substantial assistance provided to the programme by the Extension & Training Department. The administrative costs of the Division, nor of any of CADU's units, are not budgeted for separately. However, if the costs of inputs and materials to be sold (e.g., fertilizer and seed) and the costs of investments in construction are deducted from the Division's total budget, an estimate of its administrative costs may be obtained. For 1972/73 these costs thus computed amount to E\$1,323,641 or about 15% of the turnover of the Division budgeted for that year. This figure for 1971/72 is 12.5%. The major cost items in 1972/73 are expatriate staff (E\$82,468), senior Ethiopian staff (E\$95,634), travel and transportation (E\$110,000), transportation, freight and forwarding (E\$485,000), rentals of stores (E\$54,000). It should be noted, however, that the Division depends heavily on CADU in general and the Administration Section in particular for a variety of administrative services, including accounting, and that this latter cost concept therefore is misleading if viewed in isolation.

II.G.3. Beneficiary Savings

Not applicable to CADU.

II.G.4. External Finance

Discussing the financing of CADU's credit programme again raises problems of definition. If CADU is viewed in its entirety to begin with, the overall gross cost of the project according to its 1972/73 budget is E\$17,856,824 (various adjustments have later increased the published figure to close to E\$18 million). Of this amount E\$10,703,179 is to be financed from revenues, mainly from sales of inputs by the CADU Marketing Division. The amount of E\$280,854 is to be transferred from 1970/71 savings. The remaining amount of E\$6,872,795 which is the net cost of the project for 1972/73, i.e., represents the project's need for additional capital in that year, is to be financed by SIDA with E\$4,552,395 and IEG with E\$2,320,400 in accordance with the rules for the project's financing laid down in the Plan of Operation.

The need for external financing of the credit programme varies considerably over the year. In previous years CADU had to deposit about 80% of the value of the fertilizer ordered when it arrived in Ethiopian port around November/December. After the harvesting season between December and March CADU had to pay farmers for wheat grains. The remainder of fertilizer costs had to be paid around March when all fertilizer had been delivered, and the need for additional funds for the programme were highest at that time. Around May the farmers started to deposit downpayments on credit purchases of fertilizer and seed, and these downpayments continued to be received up to the end of July. At this time sales of grains started and enabled CADU to replenish its funds until next season's fertilizer requirements were to be ordered, and the cycle started anew. This cycle still applies although with some modifications.

CADU was previously in the fortunate position that it could largely finance this cycle on its own from unutilized funds at its disposal. The IEG had during CADU's first agreement period, i.e., prior to 7 July 1970, contributed the amount of E\$1,418,000 towards the road construction programme which is budgeted for separately. The road construction programme was not initiated until 1971/72. Until then these funds could be utilized to finance the credit programme since they had been paid out to CADU.

To supplement these "road" funds CADU in July 1970 took a loan of E\$400,000 from the predecessor of AIDB, the Development Bank of Ethiopia, for purchase of fertilizer. Interest for this loan was 8% per annum and the loan was to be repaid (which it also was) by April 1971. It may be noted that CADU had been free to obtain this loan on purely commercial terms from any bank.

The "road" funds were beginning to be utilized in 1971/72 and in July 1971 CADU therefore took another loan from AIDB, this time of E\$900,000, which was also to be repaid at the end of April 1972. Due to the low wheat grain

prices and slow grain sales in 1972, a moratorium up to the end of August was obtained and this loan was then repaid. However, since CADU had large grain stocks even at that time, an overdraft facility of E\$1 million was granted by the state-owned Commercial Bank up to November; the security for the moratorium as well as for the overdraft facility was the grain stocks.

Fertilizer was in 1971 for the first time ordered on behalf of CADU by AIDB, and this practice will be followed in 1972 and probably in subsequent years also. The fertilizer is then ordered and paid for by AIDB, and AIDB retains nominal title to the fertilizer until it is sold to the farmer. On submission of the order for the fertilizer the Ministry of Finance deposits 25% of the value of the order (the order then covers all fertilizer requirements for all units and projects of the Ministry of Agriculture). CADU and the other projects then deposit 25% of the value of their requirements financed by the downpayments paid in by the farmers by July. AIDB carried whatever risk may be involved on the remaining 50%. As farmers repay their credit during December - May the funds are paid back to AIDB.

The agreement with AIDB stipulates that the projects shall pay interest at the rate of 7% per annum for any fertilizer remaining in stock after 1 October every year. This fertilizer is distributed by AIDB to the projects on consignment. After the 1972 distribution season on 1 October 1972 CADU has no less than 4,500 tons of fertilizer in stock due to the unexpectedly low volume of sales in 1972.

AIDB has thus assumed an increasing role in financing the purchase and distribution of fertilizer, and the design of the credit application forms (see Appendix II) which are headed "AIDB/CADU Application for Credit" bears witness of its involvement in CADU's credit programme. The ultimate source of financing for the programme may then be said to be IBRD, USAID, and West Germany which all have contributed the capital of AIDB.

II.G.5. Institutional Solvency

The CADU Marketing Division has in 1971/72 for the first year operated as an autonomous division within CADU. Prior to 8 July 1971 it was entitled the Commerce & Industry Department with the same status as all other units of CADU.

The Commerce & Industry Department in the 1970/71 budget year incurred a loss of about E\$68,000 after stock depreciation, interest on working capital, and depreciation of fixed capital assets. This loss corresponds to about 2.3% of the turnover of close to E\$3 million.

The CADU Marketing Division after the 1971/72 budget year had incurred a loss as large as E\$570,000 equivalent to 7.7% of the gross turnover of E\$7,450,000. However, this turnover includes stocks worth about E\$4,300,000 which have been valued at the market prices prevailing at the end of the budget year. Since prices have continued to fall since that time it would be more correct to depreciate the stock still further which would increase the loss to about E\$840,000 or fully 11.3% of the turnover. In the balance sheet of the Division the stocks account for over 80% of the assets, and the value of buildings, land, and other fixed assets is negligible. By any financial standards the solvency of the Division must be termed very poor after the 1971/72 budget year.

As has been set out elsewhere in this paper, this has been brought about mainly because of the unusually low wheat prices in Ethiopia during 1972. CADU started buying wheat after the 1971 harvest at what was then assumed to be "normal" prices anticipating the price rise that normally occurs towards the following summer. CADU was then purchasing at prices that sometimes were much above those of local merchants in Chilalo. The benefits of the grain purchases were thus transferred to the farmers before they had actually been realized by the project which was counting on speculative storing to finance the operation. With the benefit of hindsight this must be termed an extremely dangerous policy. The wheat price forecast that was the basis for the policy proved to be erroneous. The situation should at an early stage have been redressed and purchases either discontinued or continued at much lower prices when it was evident that there was a large gap between the prices offered by CADU and those of the private sector.

It is not yet clear how the loss in 1971/72 will be covered, but presumably additional funds will have to be provided by the two participating governments. It is clear that it is difficult for the CADU Marketing Division to meet the stipulation of the Plan of Operation that "the autonomous divisions shall make a profit of 10% of their invested capital". The nature of the Division's operations spread out over a multitude of small sales outlets makes them difficult to rationalize, and overhead costs tend to be high. On the other hand, it should with judicious management be possible to make the Division break even as the 1970/71 results tend to indicate.

II.G.6. Foreign Exchange Balance

Ethiopia is a net importer of wheat, and in 1970 31,536 tons of wheat grains and 28,160 tons of wheat flour were imported. CADU's efforts are concentrated on increasing the production of this crop, and the incremental production of wheat directly referable to the project's activities may in 1971 be roughly put at 20,000 tons. In that year CADU sold and consumed a total of 4,533 tons of fertilizer in the project area imported at a cost CIF Addis Ababa of E\$286.00 per ton. Imported wheat costs about E\$335.00 per ton CIF Addis Ababa. The net foreign exchange saving to be attributed to CADU would then be about E\$5.4 million in 1971.

However, in assessing CADU's credit programme this aspect is really not very relevant. The programme has been designed for the primary purposes of assisting small-scale farmers in the project area and of developing methodology for rural development elsewhere in Ethiopia. The project's effects on Ethiopia's foreign exchange reserves may, with some hyperbole, be termed coincidental. If the main cash crop of the project area had been, say, teff, which is not imported, the project would probably have had a negative effect on foreign exchange reserves but yet have been designed in the same manner anyway.

II.H. Complementary Factors

II.H.I. Technology

a. Directing, Tying and Packaging

As will have been clear from the above, CADU's credit programme is tied to provision of agricultural inputs not previously available to the project area farmers. No cash credit whatever is provided. The new technology is considered to be well adapted to the farmers' existing level of technology.

b. Program Extension and Supervision

CADU's agricultural extension service was described in section II.C.1. The model farmers are CADU's primary innovation for dissemination of information on new farming techniques and inputs to the farmers. The extension agents also operate a demonstration plot of 1 hectare as closely as possible to a main road or a market place where farmers can see the new inputs in use and their effect on yields. The agents arrange "field days" intermittently when they assemble as many farmers as possible to demonstrate some particular input or method. In addition, CADU's Information & P.R. Section may hold campaigns using cars with mounted loudspeakers, rallies, etc.

c. Other Arrangements for Technical Transfer

Refer to Sections II.C.1 and II.H.1.b.

d. Nature of Technology

As mentioned in Section II.B.2.a., CADU provides credit for purchase by small farmers of fertilizer, seed, agricultural implements, concentrate, pesticides and herbicides, cross-bred heifers. To date fertilizer and seed have fully dominated sales with fertilizer assuming increasing importance over seed.

Trials have shown that application of fertilizer NP 18/46 at the rate of 100 kg per hectare will increase wheat yields by over five quintals per hectare. If fertilized for the second year the yield increase on the same land will be only three quintals as diminishing returns set in, and the increases will gradually taper off. As a hypothetical example, a farmer who may have yields of 10 quintals per hectare prior to fertilization may obtain 15 quintals the first year of fertilization, 18 quintals the second year, 21 quintals the third year, 23 quintals the fourth year, 24 quintals the fifth year with the curve leveling off between 25 and 30 quintals. Obviously the farmer should fertilize up to the point where the marginal cost for this input equals the marginal revenue increase derived from the fertilizer. With a cost of fertilizer of about E\$40/quintal and a wheat price of about E\$20/quintal, this point will be reached about the fourth

year. This is the point where CADU is today in several extension areas calling for use of fertilizer of different varieties or for advice to the farmers to stop applying fertilizer for one year until the phosphorus contents of the soils have dropped anew. This in its turn calls for a diversification of the agricultural extension work that CADU has not yet brought about.

It is clear from the above that application of fertilizer is eminently profitable for the farmer during the first years. The first year the fertilizer has a benefit/cost ratio of about 2.5:1, the second and third years 1.5:1.

Use of improved wheat seed will increase yields by about two quintals per hectare. The seed should be applied at the rate of 125 kg per hectare and sells at E\$34 per quintal. The farmer's alternative to using CADU seed is to use his own or to purchase elsewhere. If he uses his own, the cheapest alternative, he will forego the revenue of selling this seed as grains at a price of E\$20 per quintal. His real cost for the seed is thus $34 \times 1.25 - 20 \times 1.25 = E\17.50 , and the benefit/cost ratio 2.3:1. The problem with use of CADU's improved seed is that it has to be used judiciously. The Crop & Pasture Section annually issues instructions to the extension agents on which seed varieties should be preferred. However, farmers may demand a variety that did well in a past year but that may subsequently have been susceptible to rust or other pests.

CADU's method for seed bed preparation including seed covering is vastly superior to the traditional method. The farmer has to invest in a plough at E\$40 and a harrow at E\$30 or totally E\$70. The estimated life time of these implements is four years and the annual cost thus E\$17.50. It is estimated that it will take one man and two oxen about 21.5 working days to prepare one hectare using the traditional method while it will take only 9.5 days using CADU's method. Using a shadow price for labour of E\$3/day for the man and the two oxen, the cost saving would be E\$36 per hectare. In addition, CADU's method prepares the soil in a superior manner and a yield increase of 2.5 quintals per hectare may easily be obtained. At a price of E\$20/quintal of wheat the farmer would thus stand to gain $36 + 2.5 \times 20 - 17.50 = E\68.50 from one hectare only. However, since this calculation involves abstract cost concepts like depreciation and shadow price for labour, it is more difficult to convey it to the farmer.

The economics of purchase of a cross-bred heifer are illustrated by the following table:

Year	Capital Cost (E\$)	Maintenance Cost (E\$)	Gross Revenue	Profit/loss (E\$)
1	142.32	145.00	250.00	(37.32)
2	127.53	149.00	275.00	(1.53)
3	109.39	153.00	300.00	37.61
4	91.24	153.00	300.00	55.76
5	80.24	153.00	300.00	66.76
6	70.56	153.00	300.00	76.44
7	-	153.00	300.00	147.00
8	-	etc.	etc.	etc.

The farmer deposits the downpayment and the first installment of the insurance premium the first year and repays the principal over the following five year period; the total price he has to pay is E\$621.28.

Revenues accrue only from sale of milk. The yield during the first year is 1,000 litres, the second year 1,100 litres, and the third and following years 1,200 litres. In addition, the farmer will have the calf since he buys the heifer pregnant. A local cow, by comparison, yields about 200 litres per annum.

The difficulty is to convince the farmer of the profitability of the heifer over a long period and to present the argument in such a manner that he is not discouraged by the high total investment cost.

The extension agents were previously trained for 14 months, seven months of theoretical training at CADU's Training Section followed by seven months of practical training in the field. Their previous formal training was 10 - 12 years in secondary school. This course has now been increased to 22 months starting with six months of theoretical training followed by 12 months of practical training and finally another four months of theoretical training. It must be considered that they are well qualified to transmit these new technologies as they stand today. There is some evidence, however, that certain aspects of their training may have been somewhat neglected, for instance the economics of farm management and of use of improved inputs.

II.H.2. Supplies and Sales

a. Programme Supplies

Each trade centre has a store capable of storing 300 - 400 tons of supplies. These stores are either built and owned by CADU or rented in the vicinity of the trade centre. Supplies are delivered to these stores by the trucks of the CADU Marketing Division from large central stores in Asella and Nazareth. When the loan agreement has been approved and the downpayment paid, the farmer himself collects his supplies from the trade centre store. His own means of transportation is all but invariably the donkey.

The trade centre foreman receives the farmer's downpayment (as well as all subsequent installments) and is charged with the distribution of supplies to farmers. During the peak season he may on any given day of the week have several thousand Ethiopian dollars in the small safe he keeps in his office. This money is collected and brought to the CADU Marketing Division office in Asella by the marketing supervisors who make weekly rounds of all trade centres within their districts. A marketing supervisor may thus carry with him E\$10 - 20,000 in cash after one of these rounds.

There have in the past been several cases of fraud, embezzlement, and outright robberies by marketing supervisors and trade centre foremen handling such large amounts of cash. By gradually improving the training of the trade centre foremen and educational background of marketing supervisors it is hoped to reduce the occurrence of such irregularities.

Prices of the most important inputs were in 1972: fertilizer NP 18/46 E\$38/quintal; wheat seed E\$34/quintal; plough E\$40; harrow E\$30; oxcart E\$155. The production cost of the heifers is E\$420/animal, and together with insurance and interest the price to the farmer for the heifer is E\$620 to be paid over a five year period.

The only supplies that are imported are the fertilizers. Obviously great care has to be taken in ensuring deliveries from the Ethiopian port of entry out to the trade centres on time. In other respects, no special provisions are made for this commodity.

b. Programme Infrastructure

CADU operates through its Infrastructure Department a road building programme, a water supply programme, and a construction programme.

The road building programme started only late in 1971/72, since heavy compaction equipment arrived late during that budget year. Yet 11.6 km of road was completed to 75%. The roads constructed under this programme are costed at E\$16,000 per km when fully completed. They may be characterized as all-weather feeder roads of good quality enabling two-lane traffic. They are built following a feasibility study of roads within the project area

that designated five priority roads linking major villages with existing roads. During the 1972/73 budget year the programme has a budget of about E\$1-million for which it is planned to build some 60 km of such feeder roads.

CADU's Water Development Section has to date been mainly concerned with research on ground water tables, surface water flows, design of wells and ponds for supply of water to farmers. During the dry season a farmer (or usually his wife) may well have to walk over five kilometres to get water, and it is therefore planned to build several wells for collecting and storing rain water. It is also planned to sink boreholes paid for by local communities of farmers, but this scheme has to date floundered mainly because of lack of financing.

The construction programme has so far been almost exclusively concerned with CADU's own facilities and very little extension work with and for farmers has been done. In 1971/72 several stores were built for the CADU Marketing Division, both at the project centre in Asella and in the vicinity of trade centres in the field. The programme also included construction of several office buildings and staff quarters in Asella as well as houses and offices for agricultural extension agents in several extension areas. The total budget for the construction programme was in 1971/72 about E\$840,000.

c. General Access and Availability

CADU enjoys an absolute monopoly within the project area as regards provision of virtually all inputs to small farmers. The private sector has, at least to date, not been in any position whatever to compete with CADU's system for distribution of fertilizer and is not likely to be able to do so in the future. Production and sale of pregnant heifers or of agricultural implements is not at all undertaken by the private sector. In Ethiopia sale of agricultural supplies and services by the private sector is almost exclusively directed towards the modern, mechanized, large-scale farmers. The small-scale farmer's limitations in access to improved agricultural inputs is thus universal, and its elimination is entirely dependent upon government-sponsored projects like CADU, the minimum package project, WADU, and others. It may be a long time before the private sector may be able to substitute or complement these projects.

d. Guaranteed Sales and Price Supports

The CADU Marketing Division buys a part of the project area farmers' production after harvest, stores it, and sells it on the open market later in the season when prices have risen.

The purchases almost exclusively concern wheat grains. In 1971/72 CADU purchased a record quantity of 11,323.5 tons of grains of which 9,388.7 tons were wheat from the farmers. However, it is estimated that this does not represent much more than 10% of the total wheat production within the project area, which in turn is estimated to account for about 12% of Ethiopia's

total wheat production. Purchases are made from borrowers as well as non-borrowers. Nobody is guaranteed a market for all or part of his supplies, and it is left to the individual farmer to decide whether he wants to sell his grains to CADU or to the local merchants.

In the 1972 buying season (i.e., just after the 1971 harvest ending in December) CADU initially had a stable floor price. However, prices in the Ethiopian market fell sharply just after harvest when the government suddenly imported a large quantity which was added to the just marketed harvest. Prices offered by merchants in Chilalo fell with the result that CADU found itself buying at much higher prices than the merchants, and, as a consequence, buying so large quantities that a liquidity crisis appeared imminent. CADU's prices were gradually adjusted to conform with the generally prevailing market prices level, but the experience learned was how dangerous and expensive it can be to operate with a guaranteed floor price. In 1972 Ethiopian wheat prices have generally been exceptionally low, and as a result CADU still in September held in stock most of the wheat purchased in 1972. This is exceptionally late in the season since these stocks will have to be sold off before October when produce from the next harvest will begin to be marketed and prices will fall still further. To illustrate the gravity of the situation: CADU's average purchase price for wheat grains in 1972 was E\$19.19 per quintal. The current wheat price in the open market is around E\$20 per quintal, and CADU incurs costs of about E\$3.50 per quintal. The unsold stock of wheat was in ^{the} order of 85,000 quintals in September with prices continuing to fall.

The grains purchased are graded at the trade centres and farmers are paid according to a certain scale for the quality of their grains. They are transported from the trade centres to the large central stores by the CADU Marketing Division. The grains are then stored there until they are sold in the open market, usually to large flour mills.

CADU also buys milk from farmers. These purchases have gradually declined as wheat production in the project area has expanded at the expense of cattle production. In 1969/70 CADU purchased 318,000 litres of milk, in 1971/72 only 147,000 litres were purchased. With the introduction of the cross-bred heifers, however, it is expected that milk purchases gradually will increase. The milk purchased is sold to a dairy outside Addis Ababa.

e. Insurance

The only insurance entering into any aspect of the credit programme is connected with the pregnant heifers. Into the total price to be paid by the farmer for each heifer, E\$620, is built a premium calculated to cover the risk to the farmer that the animal dies, aborts, or fails to conceive. If this occurs and cannot be explained by mismanagement, the farmer is reimbursed for his outlays in connection with the heifer. The insurance scheme is compulsory, and each buyer has to pay the premium which amounts to 14% of the total purchase price.

f. Other Programme Marketing Arrangements

In principle there are no complementary marketing arrangements to those of the trade centres and the CADU Marketing Division. However, in 1972 CADU experimented with a free grain scale service for the farmers. It has been estimated that the local merchants on an average cheat the farmers on 12% worth of their grains by using false weights, taking advantage of the illiteracy of farmers, etc. The free grain scale service allowed farmers to weigh their grains prior to taking them to a local merchant and caused much anger and resentment among the merchants.

The primary co-operative societies that eventually will be established with CADU's assistance around each trade centre may be able to provide some extra services like off-farm storage facilities and cash loans. However, it is doubtful whether even the co-operative societies will be able to guarantee purchase of all their members' produce for liquidity and storage reasons.

g. General Marketing Conditions

It can in no way be claimed that any shortcomings of the marketing system have significantly affected income levels of the beneficiaries of the credit programme. By being in the grain purchasing market CADU not only supports a relatively high price level (sometime too high as indicated in H.2.d above) but is also able to minimize the effects of irregular practices by local merchants. The local merchant no longer enjoys monopoly and the farmer's options for disposal of his grains have been strengthened (he may still prefer to sell to the local merchant for a variety of reasons: the merchant may grant credit in his retail shop, he may later be willing to provide cash loans on good terms, etc.). The efficiency of the entire grain purchasing apparatus in the project area has perforce been enhanced.

On the other hand, it is clear that the grain marketing operation is an expensive and risky business for CADU to operate. If the grains are sold in the open market, as they have to be, they will also have to be bought according to open market forces. The chances of effectively offering the farmers a guaranteed floor price become very remote. Further, the volume of grains purchased in 1972 increased so rapidly (a volume increase of no less than 370% in comparison with 1971) that the CADU Marketing Division has incurred a variety of management problems.

However, the marketing system, both that of CADU and that of the private sector, has generally been able to expand adequately to cater for the increased volumes of wheat grains generated by CADU's agricultural extension and credit programmes. There are few signs of any real capacity problems within the marketing system that might, for instance, cause farmers to withhold their grains or to haul them long distances for sale elsewhere than in the customary market places.

h. Profits and Risks

The profitability of the technology propagated by CADU was discussed in Section II.H.1.d.

III. EVALUATION

III.A. Performance

III.A.1. Apparent Uses of Credit

Since credit is granted by CADU only in kind and no cash loans are given, the only way for this credit not to be used for its intended purpose would be if the commodities, e.g., fertilizer, were resold. Since each farmer in his credit application is expected to state his cropping pattern, since the inputs he will be allowed to purchase are carefully adapted to the size of his holding, and since the model farmer area committee is to comment on the correctness of the credit application, the farmer can, at least in theory, only sell inputs that should have been used on his own farm. If he sells fertilizer intended for use on his own farm he is unlikely to make a good deal, since he will only be able to sell the fertilizer at a profit of 10 - 20% (buyers would mostly be farmers who previously have defaulted on credit from CADU and who therefore are excluded from purchasing anew) while the fertilizer if used on his land would provide him with a 50 - 150% profit. There is some evidence of resale of CADU inputs (almost exclusively fertilizer) in this manner, but it is believed to be minor and insignificant. CADU's credit is overwhelmingly used for the purposes intended.

III.A.2. Effects

a. Production and Farm Income

It is known that CADU's agricultural extension and marketing activities have generated substantial income increases within the project area. The income increases generated by CADU may be traced to increases in yields per hectare of wheat and to increases in areas under wheat.

In the northern part of the project area, where CADU started field operations in 1968, average wheat yields were 9.8 quintals per hectare in 1968. In 1971 the average wheat yield in the same area was 19.2 quintals; the best wheat variety yielded 24.3 quintals. Yields have almost doubled over four years.

In 1968 the average area under wheat per farmer in the same area was 1.6 hectares, while the corresponding figure for 1970 was 2.3 hectares. It has been estimated that in 1968 36% of the total area cultivated in this area was under wheat, in 1970 49% of the cultivated area was under this crop. In 1968 72% of all farmers in this area cultivated wheat, in 1970 this figure was 92%. Each farmer cultivating wheat derived about 75% of his income from this crop. Of the overall area cultivated in Chilalo it is estimated that the share of wheat has grown from 18% in 1966 to 23% in 1972.

An attempt was made in 1972 to estimate farmers' incomes in an area where CADU has had maximum impact on the basis of the cropping patterns showed in the credit applications. The exercise was considered to produce reasonably accurate figures although they were computed on a "desk research" basis. The mean cash annual income was found to be E\$1,618.28 and the medium cash annual income E\$1,252.77. A study conducted prior to CADU's inception shows that mean annual cash income was then around E\$850. While these figures are all subject to considerable error margins, it will be reasonable to assume that cash incomes have roughly doubled in those areas where CADU has operated ever since 1968 and thus had maximum impact.

The following table (p. 55) illustrates the distribution of gross benefits generated by CADU's credit programme over the years 1968 - 1971 for tenants and landowners of various sizes respectively. The table shows that CADU's credit programme has gradually been able to improve its goal achievement as regards "directing the activities towards farmers in the lower income brackets". In 1968 9.5% of all credit takers were large- or medium-scale farmers owning 40 hectares or more and these accounted for 31.08% of all benefits generated due to their ability to make large purchases of inputs. In 1970 this group of farmers accounted for only 1.1% of all credit takers and 3.34% of all benefits. The number of tenants among the credit takers has increased from 8.5% in 1968 to 38.1% in 1971. In 1968 tenants and the smallest landowners (1 - 10 hectares) together accounted for 18.28% of total benefits, in 1971 they accounted for 94.0% of total benefits. Corresponding figures for 1972 are at present being computed.

toward

The analysis shows that there has been an unbroken trend/increasing participation by tenants in the credit programme. Since it is estimated that about 40% of all farmers in Chilalo are tenants, CADU has succeeded in eliciting the participation of tenants at almost the same rate as they occur in the project area. This is contrary to the commonly held view that tenants who cannot themselves benefit from all investments and improvements they make on their land would not be inclined to purchase improved agricultural inputs.

The distribution of land and therefore also of income even among those farmers eligible for participation in CADU's credit programme (thus leaving aside the larger non-eligible farmers) is very skewed. A Lorenz curve based on the previously discussed income calculation shows that 36% of all farmers fall in the income strata of E\$1,000 or below but that these farmers only account for 14.5% of total annual income; at the other end of the income distribution the 5% richest farmers account for 18% of total income.

This uneven distribution of land will eventually become a real constraint for the goal of a more even distribution of the income generated by CADU's credit programme. When the proportion of CADU inputs per cultivated area approaches the optimum level, area owned per farmer becomes the limiting factor for further income increases, and the proportion of income increases will reflect the distribution of land. In this situation the benefits generated by CADU will have affected all farmers equally and the income distribution has merely been shifted upward with relative differences still remaining. There are signs that this is, in effect, taking place.

A further constraint is the present share-cropping system. Land rents are paid as a fixed proportion of the tenant's total yield. As the tenant's yield and income increase, the landlord's income will also increase, and the gap between the two will never close.

The inefficiency of the taxation system also acts as a constraint to more even income distribution. The present system, in effect, taxes the farmers according to a degressive scale: rich farmers pay proportionately less than do poor farmers. In fact, there is some rather surprising evidence to the effect that land tax revenues in Chilalo have actually fallen in recent years despite the substantial increases in areas cultivated known to have taken place. A very plausible explanation is simply that farmers' increased incomes have enhanced their possibility of bribing their way out of taxation.

In summary, it may safely be stated that CADU's credit programme has generated substantial income increases within the project area, and the best current estimate is that incomes have roughly doubled in those areas where CADU has operated since 1968 and thus had maximum impact. The distribution of the benefits generated by the programme has gradually improved in favour of the tenants and smallest landowners. On the other hand, there are three structural factors limiting the possibilities of achieving a much more even income distribution in the project area: the uneven land distribution, the share-cropping system, and the taxation system.

b. Technology

CADU has obviously had an impact on the farmers' choice of technology. Fertilizer and improved seed were not available to them prior to CADU and would almost certainly not have been available to them without CADU or some other development project. Use of the new agricultural implements introduced by CADU represents a rare break-through from the traditional way of soil preparation and threshing towards more rational and effective methods. Bottlenecks in the traditional farming pattern (particularly threshing) are eliminated. While the improved implements at present are far from generally accepted in the project area the demonstration effect from those implements already in use is expected to lead to more rapid rate of acceptance in the future. One objective of CADU's credit programme is to introduce to the farmers a complete new or "intermediate" technology based on new (fertilizer) and improved (seed, agricultural implements) inputs adapted to the farmers' existing technology and level of knowledge. To date CADU has been fairly successful in meeting this objective.

c. Savings and Other Sources of Finance

The increased incomes have caused increased propensities to save and invest. In a recent survey 65% of all sampled farmers in a "maximum impact area" declared that they intended to save money during the coming year for future investment. Intentions to save were naturally positively correlated with incomes, but even in the lowest income strata 54% of all farmers claimed to intend to save. The farmers stated that they wished to save in order to be able to purchase better agricultural implements, improve their housing, obtain better education for their children, and to buy more land. The preferred form of saving was somewhat surprisingly found to be a banking service rather than the traditional forms of savings in grains, cattle, or simply keeping cash in the home.

A separate study is being launched to explore further farmers' savings habits with a view to put forth suggestions for an action programme for CADU in this field. At present there is no institutional form of savings available to the farmers nor are there any sources of credit other than CADU and the traditional money-lenders. There would appear to be a need for the establishment of some savings institution, possibly operated along co-operative lines, within CADU's project area, that would absorb farmers' savings and also provide them with cash loans in substitution for the money-lenders.

d. Employment

CADU's credit programme has undoubtedly had a negative effect on land tenure patterns. As a result of the increasing yields within the project area, the value of land and hence land rents have increased. When it has been demonstrated to them how profitable farming can be if better inputs are used, major landowners prefer to evict the tenants on their land and to cultivate their land with tractors in a modern manner. In the case of

absentee landowners (who may be merchants or government officials) this often takes the form of contract farming where the landowner contracts with a large-scale farmer with access to mechanized implements for the cultivation of his land. While studies have shown that the intermediate technology advocated by CADU does neither produce lower yields nor higher costs than mechanized farming, the latter is able to capitalize on the most scarce resource, management skill, and apply it rationally to as large a parcel as possible. From the landowner's point of view there are also several advantages connected with contracting with one large-scale operator rather than with a multitude of small tenants.

The exact magnitude of the tenant displacement indirectly caused by CADU is not known, but it is believed to be considerable. In one extension area where CADU has operated since 1968 and where the topography of the land makes it particularly suitable for mechanized farming, the proportion of tenants of all farmers was 46% in 1968 and 12% in 1972, and eviction in the area is continuing. It is clear that several thousand tenants have been evicted in Chilalo since CADU started its operations. In addition, land rents have continuously increased, and tenants who prior to CADU may have paid one-third of their yield in land rent to the landlord may now be paying one-half or more. It is apparent that the social costs of this tenant displacement in any benefit/cost calculation for CADU as a whole would have to reduce the benefits generated by the project.

On the other hand, there is some evidence that the demand for labour within agriculture in Chilalo is increasing creating an upward pressure on wage rates. If tenants are displaced large landowners while depending on mechanized soil preparation will have an increasing need for manual labour for sowing, weeding, harvesting. In areas where tenant displacement is known to have taken place CADU has experimented with labour intensive techniques for road construction in order to attract unemployed labour. There have actually been considerable difficulties connected with attracting labour for these road construction activities at the going wage rates (those wages offered by CADU correspond to the wage rates that have existed for many years in Chilalo prior to CADU and that still exist outside Chilalo, about E\$1.00 - 1.50 per day for casual labour) suggesting that agriculture pays better. In the absence of any comprehensive study of employment effects it is impossible to generalize these findings too far, but it remains quite clear that CADU has contributed to the process of tenant eviction which in its turn has brought with it an increasing demand for casual farm labour.

It is difficult to say what the net effect of this process may be. On the one hand it is clearly economically rational to consolidate farm holdings into larger production units rather than to have them divided into a multitude of small parcels each cultivated separately by a tenant. This consolidation of holdings and ensuing tenant displacement will probably follow all but inevitably in the wake of agricultural development in Ethiopia, given the country's present archaic land holding system and absence of any land reform legislation. While some of the displaced tenants may find employment

as farm workers, many will have to migrate and settle elsewhere. The IEG has not shown any interest in assisting displaced tenants by providing them with government land, although it is known that there exist substantial tracts of government land (totally in the order of 40,000 hectares) within CADU's project area. Failing any government assistance the social costs of the tenant displacement, to be related to the economic production gains, will remain considerable.

e. Political and Social Structure

CADU's first main goal being economic and social development, it is the project's outspoken intention to increase the social awareness of the farmers. CADU intends to achieve this by creating multi-purpose co-operative societies around each trade centre throughout the project area. Through these societies the farmers will eventually be able to exert influence on the conduct of CADU: the goal explicitly expressed in the Plan of Operation is to "ensure the participation of the project area population in and their assuming of increasing responsibility for (CADU's) activities."

If and when these co-operative societies are formed and made to function, the small farmers in Chilalo will have been able to increase their political and social leverage. They may then through their representatives be able to negotiate on better terms with merchants and large farmers and to exert some pressure whenever necessary.

However, the present situation is a far cry from significantly improving the social and political status of the small farmer in Chilalo. While CADU in focusing its attention on the lot of the small farmer and on the necessity for land reform has pointed at the need for improving his economic and social status not only in Chilalo but also on the national level, the project's real achievements to date have been on the economic side. The establishment of co-operative societies has proved to be a slow process, and CADU's experiences in this field have not been very positive. The Chilalo farmer has been richer as a result of CADU's activities, but it can hardly be said that his political influence has increased nor that he has been able to increase his leverage towards more influential social groups. To the extent he has been able to exert pressure on, say, the grain merchants it has been as a direct consequence of CADU's activities.

While areas owned per farmer probably have not changed much due to CADU's activities, it is clear that the areas cultivated per farmer have increased considerably. The reasons are mainly twofold:

- a. The tenant displacement discussed above under (d) which has left larger holdings to be cultivated by landowners.
- b. A general trend towards increasing cultivation of wheat at the expense of grazing land and hence cattle production.

This trend towards increasing area cultivated per farmer is likely to continue unabated throughout the project area until (a) the cross-bred heifers have been introduced on a scale sufficiently large to make cattle production a viable alternative to cereals production, or (b) areas cultivated approach areas owned which, of course, sets the limit for further expansion.

III.A.3. Progress Towards Other Objectives

In a sense CADU has already met its main goals of finding suitable methods for bringing about agricultural development in Ethiopia and creating possibilities for the application elsewhere in the country of the project's experiences. The most important characteristics of CADU are already being replicated in other integrated agricultural development projects, notably the minimum package project. CADU as a method for agricultural development in Ethiopia is considered a success by the IEG as well as by SIDA and other donors.

On the other hand, it is yet too early to pass a conclusive judgment on the success of CADU or other similar projects over the long run. It is too early to say what the long-term effects of continued tenant displacement will be. It may be that these projects will negate themselves in the long run by increasing agricultural output, reducing the prices of this output, and hence reducing the farmers' demand for the inputs. While it seems clear that CADU and other integrated agricultural development projects represent a promising approach to developing Ethiopian agriculture, it is yet premature to pass conclusive judgment on their efficacy and relevance.

Seen from a more narrow perspective CADU has achieved much by way of methodological development for agricultural development in Ethiopia. The project has one of the country's largest and best equipped facilities for seed research, development, production, and cleaning. CADU has Ethiopia's virtually only facility for agricultural implements research, development, and production. The project has a bull station able to produce and deep-freeze semen for artificial insemination, that is also all but unique in the country. The cattle breeding farm is not matched by any similar facility elsewhere in the country. The system for dissemination of agricultural innovations through agricultural extension agents and selected model farmers has been developed by CADU and subsequently been applied by other projects. CADU has a well developed unit for economic research and evaluation of the project's progress that has been able to generate an important amount of empirical data on the project area and CADU's impact thereupon. The project's training facility has expanded into a major agricultural school that may attract trainees also from other development projects in Ethiopia. Much of the research and methods development that has taken place in CADU has not taken place anywhere else in Ethiopia, and the project is therefore an important testing ground for subsequent agricultural development in the country. This may be its most important achievement.

III.A.4 Image

a. Farmer Attitudes

The farmers are generally well aware of the benefits generated for them by CADU's activities, and the project unquestionably enjoys a substantial amount of goodwill among the project area population.

However, the tenants are conscious that it is CADU that has initiated the development that may spell their doom. They are well aware that their landlords may find it more profitable to cultivate the land without them, and that it is CADU that has made the landlords familiar with the new methods of cultivation. It is therefore understandable that they in many cases view CADU with bitterness.

It is difficult for a small farmer to understand the forces that are brought to bear on the prices for the inputs sold by CADU. It is hard to explain to him that world market prices may force an increase in the price he pays for fertilizer. He will not understand that CADU cannot reduce its price for wheat seed, although the price for wheat grains has fallen, since CADU has increasing overhead costs and its prices must cover its costs. The result is a variety of complaints from farmers about CADU's allegedly excessive prices. The farmers' complaints are usually fanned by the local merchants who view CADU as a dangerous competitor in the grains purchasing market and resent CADU's influence in general. In the 1972 season these complaints against CADU's prices in some extension areas led to virtual boycotts by farmers of CADU's inputs. The boycotts were not longlived and worked to the farmer's disadvantage since they belatedly realized that CADU's inputs might be advantageous after all. This initial purchasing resistance may be viewed as an example of the influence that merchants and local notables may still wield, and of the resentment that they feel towards CADU as a new power factor in their society. They were quick to capitalize on the discontent of the farmers with the falling wheat prices and to picture CADU as the villain.

b. General Image of Programme

As indicated in the preceding Section III.A.3, CADU is generally regarded as a successful model for small farmer development in Ethiopia. The project's approach has been replicated in subsequent rural development programmes in the country. Both participating governments consider the project to be generally successful.

However, it is necessary to provide two qualifications to CADU's generally very favorable image. Firstly, the project is now being judged primarily on the basis of its rapid initial growth rate achieved mainly as a result of the application of fertilizer to cereals. While this certainly is a noteworthy achievement per se, it remains to be seen whether the relatively high level of adoption of the improved inputs prevailing in 1971 - 1972 can be sustained with falling wheat prices. In other words and as was also suggested in Section III.A.3, it is yet premature to judge CADU's long-term achievements. Secondly, while CADU to date has made some impressive gains towards the goal of economic development, progress towards the goal of social development has been meagre. Such progress has been impeded by structural factors like the land tenure system which the project has not been able to tackle alone. It might be argued that it was overly ambitious for CADU to aspire to be able to achieve any significant social development in the prevailing Ethiopian context. However, this is an aspect of much concern to SIDA.

III.B. Evaluation Procedures and Feedback

III.B.1. Programme Evaluation Procedures

In its Planning and Evaluation Section CADU has a built-in evaluation function specifically designed to monitor the project's progress and to assess its impact. This unit is staffed by six economists, three expatriates and three Ethiopians, two of whom constitute the evaluation group specifically charged with the task of evaluation (other tasks of the Planning and Evaluation Section include feasibility studies, cost analyses, forecasting, baseline studies, general economic analyses).

CADU's evaluation is carried out on what has been defined as three different levels: the activity level, the department level, and the project level. The project has a programme budget specifying in some detail each activity in the work programme of each unit within the project, the duration of each activity, the production target (goal) for each activity, and the manpower resources required for the discharge of each activity. On the activity level work on the activities stated in the budget is followed up by way of bi-monthly reports submitted by each unit within CADU to the Planning and Evaluation Section which condenses these reports and submits summaries to the project direction. Appropriate achievement indicators are inserted in the forms used for those reports and the units are expected to report on, e.g., the number of vaccinations carried out during the two-month period, number of credit applications received, quantity of grains purchased, etc. For the Marketing Division, the principal executor of the credit programme, these reports take the form of bi-monthly sales and stock reports. The basic form used for these reports is attached in Appendix IV.

On the department level the Planning and Evaluation Section prepared semi-annual qualitative assessments of work performance within a department or division within CADU (refer to CADU's organization chart in Appendix I). These reports are prepared in accordance with an established format and are intended as candid appraisals made on the basis of not only the bi-monthly reports but also interviews with the senior staff concerned, reviews of written material, and sometimes special cost analyses. In order to be useful for evaluation purposes, these reports have to be written in a fairly explicit manner, and they are therefore classified and given a restricted circulation. This reporting system consisting of bi-monthly and semi-annual reports constitutes what may somewhat presumptuously be termed CADU's management information system.

On the project level the Planning and Evaluation Section carries out a variety of statistically designed surveys in the project area with a view to assessing the project's overall impact. Since it is impossible to incorporate in one survey a measurement of CADU's impact on all the variables constituting the project's rather complex goal structure, a few

variables are selected for measurement in each particular survey. Thus, one study has been executed to determine the project's impact on holdings and land tenure. Studies are currently underway of changes in income and consumption patterns and of changes in farming practices as a result of the extension programme. Several case studies have been carried out where a small sample of farmers has been followed through weekly interviews throughout an entire year. Annual crop sampling surveys are carried out over the entire project area to assess the project's impact on yields. Most of these major studies are published in the CADU series of publications.

CADU's Plan of Operation is deficient in the sense that it does not specify any objectively verifiable indicators to be used for assessing CADU's progress. The production targets in the annual budgets are quantified to the extent possible but may be used only as indicators of short-term progress for one year to another. Base line surveys were carried out at the inception of CADU but were then, when the project was yet in its infancy and little experience was yet available, regrettably limited in scope and coverage. Subsequent base line studies have been carried out for specific project activities (e.g, "Before measurement for the women's extension programme") as well as of basic background characteristics of the project area population, but the entire project area has not been covered by base line studies until 1972.

One major study has been carried out on the development of the credit programme from 1968 through 1970; this study is also published in the CADU series. It is intended that this study will be followed up by annual analyses of the credit applications received each year. The information included in each credit application regarding size of holding, land use patterns, number of animals, land tenure agreements, purchase of inputs, etc. (refer to the credit application form in Appendix II) is fed into a computer. The computer produces lists of all credit takers classified by trade centre, by size of holding and by land tenure agreement and shows the average holding size, land use pattern, and input purchases for each class of farmers. From these lists it is thus possible to tell, for instance, how many landowners cultivating 5 - 10 hectares applied for credit in trade centre X, how much land they cultivated on an average under each crop, how many cattle and sheep they own on an average, what inputs they bought, how much they paid in downpayment, how much they took on credit, etc. It goes without saying that this statistical material provides an excellent basis for assessing what types of farmers CADU is dealing with in its credit programme, what characterizes farmers in different categories of farmers, etc.

In addition to the analysis of the computerized lists of credit applicants, the Planning and Evaluation Section will carry out special evaluations of the agricultural extension programme (already underway as indicated above) and of the efficiency of the marketing activities in general. Both these studies will be based on random samples of 300-400 farmers and will endeavour to assess the impact of these activities, the benefits that have accrued to the farmers, the farmers' attitudes, etc.

III.B.2. Feedback and Changes in Programme

For all the emphasis in CADU on continuous built-in evaluation, the modifications in basic policies implemented as a direct consequence of evaluation have to date been relatively limited. As in most development projects, the possibilities for substantive programme modifications are in practice relatively limited once the Plan of Operation is signed, staff contracts awarded, buildings and other facilities erected, and the whole project set in motion.

A basic reason why the number of programme modifications have been rather limited is that the basic principles underlying CADU's design have been found to be sound and successful. The fast rates of expansion of CADU in general and the credit programme in particular do not point at any urgent need for modifications in basic programme design. There is ample evidence that incomes have increased as a result of farmers' increasing use of improved inputs. The basic assumptions underlying the design of CADU have clearly been proven to be sound.

On the other hand, there have been a great number of short-term modifications in programme execution as a result of the short-term activity evaluations discussed in Section III.B.1. However, these modifications are limited in scope and based on purely managerial decisions ("expand sales of concentrate outside the project area"; "reduce costs of the artificial insemination activity"; "increase prices of cleaned wheat seed").

A few major studies, however, have had impact on policy. The study carried out on land tenure patterns showed that CADU indirectly has had a considerable negative effect on tenant holdings and by increasing land values by enabling higher yields caused wholesale tenant eviction in parts of the project area. While there is little the project can do to arrest this development in the absence of any tenancy legislation, the study prompted a scheme to provide long-term credit to tenants to enable them to compete with large-scale mechanized contract cultivators for rental of land (this scheme is not yet implemented in full). The previously mentioned study of the development of the credit programme 1968 - 1970 provided an eminent justification for the introduction of upper limits on the area to be cultivated by farmers participating in the credit programme by showing how disproportionate a share of the benefits generated by the programme were distributed to affluent farmers. The annual crop sampling surveys provide important indications of the success or otherwise of the agricultural extension and credit programmes in different parts of the project area by showing how different combinations of fertilizer and seed may produce very different results in different parts of the area due to variations in soils, climate, etc. The general baseline surveys and the case studies carried out by the Planning and Evaluation Section carry much weight when new project activities are introduced in parts of the project area.

The views of project area farmers are frequently solicited before new project activities are initiated, and the Planning and Evaluation Section usually has the capacity to carry out limited surveys of farmers in a specific area to determine, e.g., their attitudes to a co-operative society, to prices charged for agricultural inputs, to initiating women's extension courses. When there is any suspicion that CADU's image for some reason may be tarnished in the eyes of the farmers, as was the case in 1972 when volumes sold fell sharply in several extension areas, a survey may be carried out to determine the reasons underlying this change in farmers' attitudes. An important quality of CADU's evaluation function is that it has the capacity to keep "CADU's ear to the ground", and this quality is much utilized in the daily conduct of the project's activities.

III.C. Problems

III.C.1. Problems at Government Level

The basic problem at government level concerning CADU's activities is probably connected with the real commitment of the IEG to small farmer development. While the IEG has initiated several so-called comprehensive agricultural development projects aimed specifically at small farmers, it has still failed to promulgate any legislation on land reform although such legislation has now been before Parliament since 1966. Mechanized agriculture remains heavily subsidized through the conspicuous absence of any import duties on mechanized agricultural implements and on fuel for such implements. Taxation, availability of credit and inputs, and access to markets all remain heavily weighed in favour of large, mechanized farms without any sign of any real intentions on the part of the IEG to redress the situation. Although it is well known that large scale tenant eviction has taken place in Chilalo, and although it is equally well known that the IEG has large tracts of land in Chilalo, this land continues to be parcelled out to the most affluent farmers, church dignitaries, and other notables, while literally nothing of it has been given to the displaced, landless tenants. Indeed, the IEG has responded to CADU's direct questions by claiming that there is no government land in Chilalo. As long as this remains the attitude of the government, and large scale tenant eviction is allowed to follow unabated in the wake of agricultural development, the social costs ensuing from such development will be of such a magnitude that it is justified to raise the question--as has been done in Sweden--whether the development effort is justified in the first place.

On the more practical and pragmatic level it cannot be said that CADU has experienced many problems with any of the two participating governments. CADU is an autonomous unit within the Ministry of Agriculture of the IEG and has been able to maintain this status not only in form but also in practice. SIDA and the IEG obviously retain their influence by approving their participation in CADU's annual budgets and by controlling that these budgets have been prepared and subsequently executed in accordance with the Plan of Operation. In other respects the direct influence of the participating governments on the day-to-day conduct of CADU's activities is very restricted and, in practice, largely limited to rulings by the Ministry of Agriculture of the IEG in occasional, specific cases. CADU receives all requisite practical support from the IEG, financial contributions are always paid on schedule, the project direction has direct and unlimited access to the Minister of Agriculture who more often than not accepts its advice. There is, in fact, every sign that the IEG regards CADU as a successful project well worthy of support and therefore is prepared to grant it all practical support. However, as set out in the previous paragraph, this support has profound limitations when viewed in a deeper dimension involving the value systems and basic policies of the IEG.

III.C.2. Problems at Agency Level

The rapid growth rates of the credit programme together with the difficulties to locate qualified and competent Ethiopian staff have caused major managerial and administrative problems for the CADU Marketing Division. With a budgeted turnover in the 1972/73 budget year of E\$8.5 million the Division is a venture of substantial size. Even under the best of circumstances it is difficult to operate a marketing organization of this size in an area where communications at times are virtually nonexistent, where the purchasing and selling activities are distributed over 33 small trade centres scattered throughout the area, where the staff is mostly young and inexperienced, and where demand and other economic variables are extremely erratic and difficult to predict. The extremely rapid growth of the marketing activities has in this environment led to severe problems of administrative and operative efficiency.

The staffing problems have in the past doubtless been severely underestimated. Initially the trade centre foremen were given only three months of training after graduation from secondary school. This readily proved to be grossly inadequate for staff who were to be responsible for handling cash in the order of several thousand dollars per week in addition to stocks of hundreds of tons. The inevitable result was a large number of irregularities like embezzlement and fraud, inaccurate accounting, large staff turnover. The same has been true for the marketing supervisors who are responsible for collecting cash and documents from the trade centres and to bring them to CADU's treasury in Asella; the turnover of these supervisors has been such that at one point this summer four of the five supervisors were dismissed or suspended for irregularities. As a consequence the training of the trade centre foremen has gradually been expanded, first to 14 months and then this year to a 22 months' course. The marketing supervisors have also been upgraded, and young university graduates are now preferred for these posts. Improving the quality of managerial and clerical staff in the Marketing Division is a different problem connected with the general scarcity of qualified personnel in Ethiopia in general and in Asella in particular. In summary, the Marketing Division has to date experienced serious personnel problems which have reduced its operating efficiency.

The marketing activities have in the past been headed by an expatriate. It has somewhat belatedly been recognized that this was insufficient, and another expatriate will be appointed shortly.

It has proven to be extremely complex to conduct efficient marketing operations from a technical point of view in the context of the peasant farmers of Chilalo. Forecasting, e.g., fertilizer and seed demand and grain sales has been most difficult. Demand for fertilizer grew exponentially during 1968 - 1971, but fell sharply and completely unexpectedly in 1972. On the other hand, grain prices fell unexpectedly in 1972 with the result that CADU has on its hands an unexpectedly large stock of wheat grains to be sold at unexpectedly low prices. It might be argued that CADU has displayed poor skill in economic forecasting and marketing management.

However, more weight should be attributed to the general difficulties of conducting a large scale and novel economic activity in an environment easily subjected to external "shock" variables and therefore very unstable and erratic.

A major reason why the number of credit applications as well as sales of fertilizer and seed fell unexpectedly in 1972 is believed to be the fall in wheat prices. It appears that fertilizer prices are rising while wheat prices are falling, and in the light of this year's experience it is conceivable that this also in future years may affect farmers' demand for inputs. If this is proven to be the case, price levels for agricultural inputs and outputs, a factor outside CADU's control, may be the ultimate stumbling block for CADU's credit programme. In September 1972 just before harvest when wheat prices usually reach their peak, the Addis Ababa wholesale price for wheat was at E\$21.50 per quintal against E\$37.50 in 1970 and E\$28.08 in 1971. At the same time it appeared that CADU in the 1973 season would have to sell its fertilizer at E\$45 per quintal against E\$38 in 1971 and 1972. It is the farmer who is caught in this squeeze, and he is likely to respond by not buying improved inputs. While the price increase for fertilizer may be occasional (reportedly caused by a world-wide shortage due to large shipments to Bangladesh) wheat prices in Ethiopia are, in fact, likely to decline in future years. This may well end CADU's rapid growth rate which, it should be admitted, benefited from the very high wheat prices prevailing in 1969 - 1971.

By focusing its extension and marketing programmes virtually on the propagation of one single crop, wheat, CADU has in a sense ensured rapid and easy success. Wheat cultivation is easy to expand and the benefits of using fertilizer and improved wheat seed are readily understood by farmers. However, there is now coming a time when a more sophisticated and diversified approach will be required from CADU. The changing price levels have already been mentioned: CADU has to devote more effort to imparting to the farmers the economics of use of improved inputs to convince them that it will still be profitable for them to use the improved inputs. CADU has to develop viable rotational crops to offer to the farmers since wheat obviously cannot be grown on the same land for several years. By applying fertilizer NP 18/46 to the land for several years farmers will have raised the phosphorus contents of their soils, and it may now be time for CADU to introduce different fertilizers. In parts of the project area cattle production still predominates over cereals production, and in these areas CADU has to make a greater effort than in the past in promoting sales of cross-bred cattle and in animal husbandry extension work. Sales of agricultural implements have to be increased, and the farmers have to be taught methods for erosion control, ditching, proper crop rotation. All this will require more effort, more education and training from the agricultural extension agents, and a more imaginative and diversified approach from the agricultural extension programme as a whole. It may be correct to say that CADU has successfully passed through its first stage which has produced greatly increased wheat yields in the project area as a result of rapid rates of adoption of improved inputs sold on credit. The second stage will be how to translate this fast initial growth into a general and lasting growth for agricultural production as a whole guarding against the risk of monoculture and dependence on one crop only. This is perhaps the major problem facing CADU at the present time.

III.C.3. Problems at Farm Level

The preceding discussion has anticipated most of the problems at farm level. It has been mentioned how increasing yields in the project area have led to increasing land rents, to increasing mechanized cultivation, and to increasing tenant displacement. The unequal land distribution has been discussed that ultimately will constrain the impact CADU can have on income distributions. The inefficient taxation system serves the same end of reducing the possibilities of altering the current income inequalities.

It is yet premature to say whether the economic development brought about by CADU will significantly affect social values and behavior. One study has pointed at some changes in farmers' attitudes towards, e.g., the woman's role in the family, to education of children, and to traditional social societies, but its findings cannot yet be generalized too far.

It has already been mentioned how farming has been biased in favour of wheat cultivation as a result of CADU's efforts, how grazing land has been cultivated at the expense of cattle production, and how farmers increasingly have become dependent on one crop. It is also premature to say whether this is a negative or positive development. It is clear that cattle production as it has traditionally been practiced in Chilalo is irrational and unproductive. On the other hand there are obvious dangers connected with the current tendency towards monoculture. To what extent this will, in fact, become a problem or not will largely depend on the success CADU will have in diversifying its extension and marketing efforts.

III.D. Conclusions About Small Farmer Credit

III.D.1. Major Problems of Small Farmers

It was mentioned in the introduction that about 85% of Ethiopia's population are dependent on small-scale farming for their livelihood. It is estimated that agriculture, forestry and fisheries contribute 54% to GDP and 98% of total merchandise exports (1970). In a country so heavily dependent on not only agriculture but also on small farmers, the problems of small farmers become the problems of the country, and a major paper could be written on this subject alone. Below some of the most important areas are indicated where the prevailing situation has to be improved, if development of agriculture in general and of small scale farming in particular is to be brought about in Ethiopia.

Rural roads. Rural roads will have to be built so that farmers can get their produce to market at reasonable cost. Considerable progress has been made in recent years in expanding the nation's road network but this is yet vastly insufficient. In a country totalling 122.2 million hectares there were in 1971 only about 23,000 km of roads, of which some 8,000 km were all-season roads and the balance dry-weather trails. About one-third of the all-weather roads are paved. There are few secondary and feeder roads, and perhaps as many as three-quarters of Ethiopia's farms are more than half-day walking distance from a road. This means that transport costs are often high enough to make it scarcely worthwhile to produce much of anything for the market.

The Imperial Highway Authority is responsible for the construction and maintenance of roads. So far, however, rural road building has not been undertaken as part of the overall economic development effort and this agency has concentrated most of its effort on all-season roads. Neither the IEG nor this agency have paid much attention to where rural roads should be built, to what standard, by what organization, or by what methods. To ensure maximum spill-over effects and also efficiency of operations large plantations and development projects such as CADU have therefore themselves been obliged to improve the rural road network in their particular areas. Farmers in adjacent areas to and in fringe areas of such projects will obviously find it easier to adopt the modern inputs and improved practices promoted by the projects if a road system exists. The resulting reduction in transport costs, which may be up to 80%, may make the difference between a profit or a loss from improved practices.

Inputs. The greater part of the agricultural sector has yet to be influenced by modern inputs and technical improvements. Ethiopia's 4-million farmers spent only about E\$29 million for improved seed, fertilizers, pesticides and animal pharmaceuticals in 1970. Existing agricultural development programmes only reach a small fraction of all farmers in the country.

Imports of fertilizers have increased considerably in recent years. In the mid-1960s imports were running around 2,000 tons, while the expected figure for 1971 is about 24,000 tons (of which CADU alone accounted for almost one-third). The quantity imported for use by various government projects in 1971 was 14,000 tons and the balance of 10,000 tons was accounted for by commercial companies either for use on their own plantations or for sale to large scale commercial farmers. The 14,000 tons imported for use by government projects may only have reached perhaps 40,000 farmers or 1% of all farmers in the country.

Very little improved seed is available to farmers. The present level of imports represents only about 400 tons of seed, which is a fully negligible amount in relation to the area cropped. Some institutes and projects like CADU multiply their own seed for subsequent sale to farmers. However, there do not exist any seed inspection and certification standards in the absence of which quality is variable and frequently poor. The IEG is aware of the problem of seed supply but has been somewhat dilatory in preparing legislation which is an essential prerequisite to the establishment of a viable seed industry. However, demand from farmers has been rising in areas where agricultural projects have been initiated and it may be anticipated that requisite legislative steps will be initiated shortly.

The use of pesticides and animal pharmaceuticals is negligible. Imports of pesticides totalled E\$3-million fob in 1970 mainly for use by commercial farmers on the cotton crop. As a result of lack of livestock development projects to demonstrate the benefits to producers use of pharmaceuticals is equally limited.

Most of the farm land in Ethiopia is cultivated by ox-drawn locally made plows. These plows require from four to eight passes to produce what is still an imperfect seed bed; their design has not changed from biblical times. Threshing is done by treading with oxen. Powered operations on typical small peasant holdings normally stop at this point. Planting, weeding, and harvesting are usually by hand. This "mechanization" system contributes to sheet and gully erosion ranging from mild to very severe, sub-optimal plant populations, heavy weed infestations, and grain yields from nil to some eight quintals per hectare. Even this unappealing situation is likely to become worse because the increasing pressure of population and the resulting higher cropping intensities create a need for more animal power and intensify the squeeze on the feed supply for work oxen. But crop residues are already inadequate as a feed source, fodder crops are not planted because of shortage of suitable areas, and grazing land near cropped areas is already over-used. Improved mechanization is one of the essential remedial measures.

On the other hand there were in 1971 about 2,500 agricultural tractors in Ethiopia. Farm machinery is exempt from import duties and fuel used on farms is not taxed. As a result, there has of late been an increasing interest in tractorized operations with owner-operators as well as businessmen and government officials from urban centres working through farm managers. Contract cultivation is commonplace, particularly by owners of farms where they are themselves too small to keep mechanical equipment economically employed. The rapid expansion of mechanized farming has led to large-scale eviction of tenant farmers.

Marketing. It is widely believed that marketing costs are now unduly high, indeed so high that many farmers find it scarcely worth the effort to produce beyond subsistence and minimal cash needs. The following hypotheses may be put forth regarding the present marketing systems: (a) there are few independent buyers in production areas. The purchases from farmers are probably credit linked in many cases; (b) as discussed above, the cost of transport from the farm to the final market is high relative to the market value of the product; (c) there is insufficient on-farm and primary market storage capacity (this may be a result of a shortage of credit for storage as well as a lack of physical capacity); (d) dubious market information is received by farmers; (e) at the retail level, tradition and an inflexible market structure tend to raise prices; (f) the number of people and title transfers in the marketing chain are excessive, and the resulting inefficiency raises costs; (g) units of measurement are not standardized, and transactions are often on the basis of erroneous assertions on weights and measures which leave the farmer the victim.

As those points suggest, the attack on the marketing problem must include the construction of rural roads, the provision of credit to traders, the improvement of storage, and the introduction and use of a standardized system of weights and measures. It further requires decisive action by the IEG in creating an efficient body to undertake effectively a purchase and sales programme aimed at price stabilization; the existing governmental agencies come nowhere near to filling this function. Additionally, the private sector should be given access on commercial terms to whatever amount of credit is needed to finance inventory, working capital and transportation and storage facilities.

Information and agricultural extension. The present lack of research information on most commodities constitutes a major constraint on development. Increasing the research effort at the most practicable rate is a top priority necessity. There is an urgent need to review on-going research programmes in the light of present and planned manpower and finance, to explicitly define targets and priorities. Research should include crop varieties, yield responses to different input combinations, agricultural implements development, soil erosion control, etc. In general terms, priority should be assigned to extension-oriented research into cereals, pulses, oilseeds, coffee and livestock.

Concurrently a national agricultural extension system has to be built up to enable research findings to be disseminated to farmers. Present resources for agricultural extension work are grossly inadequate, but with the establishment of the minimum package project a major achievement in this field will have been made.

Land tenure. The perhaps overriding issue effecting the Ethiopian farmers' economic environment and their will and capacity to increase production and raise incomes is land tenure. Most Ethiopian farm families have neither title to the land they work, nor a lease-hold on terms which provide the necessary incentives to invest in land improvements and undertake innovative practices. This is a major obstacle to expanding the national output of agricultural products, quite aside from its effects on income distribution and rural welfare.

There are three main tenures: (a) individually owned lands including Church lands; (b) communally owned lands; (c) government owned lands. In CADU's project area individual ownership and governmental ownership prevail, but communal ownership is common in the northern part of the country.

In individual tenure areas maldistribution of ownership stands out as the most glaring feature. Some of the large estates are gigantic. A study in Hawassa showed that 44% of the landowners owned 3.4% of the land while 6% owned 74%. Coupled with maldistribution of ownership is the prevalence of absentee landlordism. A recent estimate indicates that 23% of all owners in individual tenure areas are absentees, and 32% of the total owned area is held by absentee owners. However, there is no real evidence to show that absentee landlords treat tenants differently than do resident landlords. Neither help tenants much with improved farming practices, provision of working oxen, inputs or credit. The concentration of wealth and power which results from this maldistribution of ownership is obviously a formidable barrier to any meaningful land reform.

More than half the total cultivated area is farmed by tenants, and more than half the rural population are tenants. Security of tenure is inadequate, and landlords can, and do, evict tenants without justification and at short notice. Compensation is seldom paid for improvements made by tenants. Most rents are paid in kind, usually as an agreed percentage of the annual crop, the usual rent being one-third of the crop. However, in addition tenants are frequently made to pay tithe (an old tax supposedly abolished in 1967 to be paid by landowners but usually passed on by them to their tenants) in the form of one-tenth of the annual produce, so that a tenant whose agreement stipulates that he will pay one-third of his crop as rent will in fact pay two-fifths. Provision of labour services by tenants in addition to rent payments is still common practice. As a consequence of rural development and increasing crop yields rents often rise, as they have in CADU's project area, from one-third of the annual crop to half.

A high proportion of agricultural holdings, whether operated by owners or by tenants, are less than two hectares in extent, and in many localities farmers cannot obtain land sufficient to absorb the labour of their families. In such conditions of land shortage it is not surprising that farms are frequently dispersed over several separate pieces of land. No reliable study has yet been made of the extent, and effect, of this fragmentation.

The expansion of mechanized farming has taken place at the expense of the traditional farming practices by tenants. The following model provides an indication of the magnitude of this development: It may be assumed that (a) 30% of the 2,500 tractors in the country were in areas which were previously traditionally farmed (a conservative estimate since available data indicates that the percentage is probably closer to 40 than 30); (b) there is, on average, one tractor per 80 hectares (again conservative since one study estimates one tractor per 120 hectares); (c) there is, on average, one peasant (tenant) per 1.5 hectares; (d) three peasants are re-employed as agricultural labourers per 40 hectares after mechanization. This gives the previously traditionally farmed area under mechanization in 1970 as $0.3 \times 2,500 \times 2 \times 40 = 60,000$ hectares which corresponds to 40,000 peasants. Of these 5,000 were re-employed. The remainder 35,000 corresponds to about 170,000 people by conservative estimate. If the mechanization process continues at almost the same rate, an additional 180,000 peasants will be replaced during this decade corresponding to almost 0.9 million people. With the peasant subsidies on mechanized farming, however, mechanization is likely to grow at an increasing rate thus displacing well over 1 million people in the current decade.

It is unrealistic to expect rapid progress on either the income of production sides in agriculture, or in the development of a domestic market on which industrial expansion can be based, until bold measures in land tenure are taken. There is little organized public pressure for land reform reflecting the political impotency of the Ethiopian peasant. The IEG seems unable to mobilize support for the necessary adjustments, even though the national development plans and other policy statements loudly proclaim the need. A Ministry of Land Reform was set up in 1966. In 1966 the parliament rejected mild tenancy legislation; a re-submission in weakened form in 1970 was less than favourably received; a further version is still before parliament. In no other area is the gap between public declaration and performance so large.

Resistance to land reform comes in large measure from within the government itself. Civil servants, soldiers and police are frequently granted government land, usually 40 hectares apiece, for "patriotic services"; in the last two years 104,000 hectares were granted, while pending applications (many of which admittedly will not ultimately result in grants) covered a further 428,000 hectares. Only about five percent of the grants were to landless persons, who generally experience difficulties in obtaining land in this manner owing to the cumbersome and slow procedures involved. Most land granted in this manner is taken up merely for

speculative purposes and, at best, leased to tenants. "Patronage" grants of land are still made by provincial governors and often to people, as is still the case in CADU's project area, who already have more land than they can effectively use.

Small farmers are hampered in their development in more than one way by the question of land tenure. This issue clouds the outlook for foreign assistance to the agricultural sector, and until positive far-reaching action is taken on the land tenure front, foreign assistance for agriculture may become increasingly difficult to obtain. An ample supply of projects worthy of foreign support can be readily foreseen, but without significant land tenure adjustment lenders may be reluctant to come forward. Sweden has already expressed itself firmly on this score.

III.D.2. Role of Credit in Meeting the Problems

The role of credit was not mentioned in the previous section. However, it is evident that very few Ethiopian farmers get credit from any institutional source, public or private. The total amount of credit granted to the agricultural sector in 1970/71 was around E\$41 million or E\$10.25 per farm, a grossly inadequate figure particularly as most of the credit granted went to large commercial farmers. The nonavailability of credit remains a major hindrance to the development of small farmers in Ethiopia.

However, it should be clear from the discussion in the preceding section that many of the major problems facing small farmers in Ethiopia are so fundamental that availability of credit per se and in isolation will not contribute much to their development. Many if not most of the major problems lay outside the province of credit. In the absence of a land reform, without rural roads and a strengthened, government supported marketing system, there are definite constraints to the impetus that may be given to development of the static peasant society.

What is required is more of a co-ordinated attack on the factor hampering development, a comprehensive package effort of the type represented by CADU and other similar development projects in Ethiopia. It is necessary to provide credit as part and parcel of a programme that includes road construction, improved marketing facilities, provision of inputs, research and extension. The issue these projects today cannot tackle is land tenure and this remains their main weakness.

The major contribution made to date by CADU and other projects providing rural credit is simply stated: by providing credit and, in effect, serving the functions of banks they have made available to the peasant improved agricultural inputs that he could not otherwise have acquired. These inputs will enable the peasant to increase his yields, to raise his income and eventually to finance some of the investments which are necessary for increasing the productivity of the land he cultivates. However, for a great many Ethiopian peasants such an income increase will not provide them with what they most need and aspire, namely title to the land they cultivate. Quite to the contrary, their increased yields may well serve as an incentive for the landlord to evict them from this land, and for a great many Ethiopian farmers this vicious circle will remain a reality in the absence of land reform.

III.D.3. Credit and New Technology

a. Triggering Small Farmer Development

The credit situation prevailing in Ethiopia in general and in CADU's project area in particular may be assumed to resemble that of many developing countries. A study carried out by CADU in 1969 showed that in a twelve month period 51% of the farmers interviewed had been indebted. Among the landowning farmers and tenants it was found that 49% and 53% respectively had taken loans in this period. The average amount of debt per indebted farmer was E\$130, and the average interest rate the loans carried was 70% or E\$90. The rate of interest for cash loans was 120% per annum. It was also found that of the total loans taken or granted only 36% were paid back during the stipulated time and this constituted 27% of the total volume of the loans. Of the total loans taken 54% were for productive purposes (mostly for seed and for uses outside agriculture) whereas the rest or 46% was taken for consumption purposes (mainly for food). Average annual incomes at that time were around E\$700 - 800.

A survey carried out in 1972 in six of the ten woredas of Chilalo showed that 28% of the interviewed farmers were indebted at the time of the interview. Although CADU is operating in the areas where the survey was carried out, only 7% of all debts were to CADU, the remaining 93% being loans obtained in the "grey" credit market.

The two main economic implications of the traditional credit structure are (a) it prevents the indebted as well as the non-indebted farmers from undertaking investments on their farms, and (b) it leads towards a greater concentration of holdings resulting in a more uneven income distribution. It is clear that if the average farmer is indebted by E\$130 and has to pay E\$90 for interest alone, not only will he be unable to undertake investments, but it is doubtful if he will ever be released from the debt. This situation may result in the dispossession of the peasants who own small plots of land and for the tenants it may mean perpetual servitude. Its consequences on the income distribution structure, which is already very uneven, needs no elaboration. The credit structure could also bar investments in agriculture (and in other sectors also) in another way. The interest on loans and especially cash loans being so high, the owners of financial capital would be reluctant to invest their money in other ventures, since there are few outlets that can compete with this rate of return. The breaking up of the traditional credit structure should be regarded as one of the most essential steps for initiating development among small farmers in Ethiopia.

As CADU has demonstrated, the small farmer is very receptive to technical innovations and can be readily induced to adopt improved inputs if it can be demonstrated that he will stand to benefit from them. However, he is in no position to acquire these inputs, however beneficial they may be, if they are not sold to him on reasonable credit terms. A farmer cultivating, say, three hectares and wishing to use the fertilizer on his land may have to pay about 15% of his annual income for this fertilizer, an amount that he is likely to be unable to raise in cash. If he is not given access to institutional credit his only recourse will be to the traditional moneylenders and, as has been set out above, their loans are given on crippling terms that would negate the benefits of the inputs. To enable small farmers to accept an improved level of technology institutional credit is thus an essential prerequisite.

III.D.3.b. Sustaining Small Farmer Development

It follows from the discussion in the preceding sections that institutional credit is a necessary if not sufficient criterion for triggering small farmer development in Ethiopia. A variety of other factors will also have to be taken into consideration and the provision of credit should only be one component of a package containing marketing facilities, an extension network, applied research or access to the findings of such research, road construction, availability of suitable inputs. If these other factors are not provided and if the development effort is not made on a fairly broad basis, whatever development may have been triggered by the provision of credit may not easily be sustained.

There is also the problem of absorbing farmers' increased incomes and providing incentives for them to save and invest and thus making growth sustaining itself. "Worthwhile" investment objectives are not forthcoming in great numbers in the farmers' traditional markets and the development project would be well advised to provide them: improved agricultural implements, improved cross-bred cattle, simple furniture and household utensils, opportunities for improved housing. This aspect is again connected with the low level of monetary activities in most Ethiopian rural areas. In a country with a more mobile and active economy where the monetary economy is a reality throughout, such a wider assortment of capital goods and services would be forthcoming by itself through the private sector. In Ethiopia they might eventually be forthcoming but after such a lag that the momentum would be long lost. It is important to capitalize on the rapid and early income increases by providing the farmers with opportunities to convert them into productive investments. CADU's consumption pattern survey has shown that there is a considerable time lag between the income increase and a real increase in daily standard of living: the farmer may enjoy greater increased incomes within a span of only a few years but it takes much longer time for him to alter his consumption habits and, say, start eating meat more often or to decide to send his children to school. In the meantime and until his consumption patterns are significantly changed, there is a substantial potential for investment. With a view to sustaining growth the development project should assist the farmer in making this investment.

It has been discussed in section III.C.2 how CADU is now increasingly being faced with the problem of diversifying its extension and marketing package into new crops, new techniques, and new products. To sustain the momentum of development initiated by CADU it is necessary that the project does not sit back and be contented with the yield increases obtained for one crop but that it continues to carry out research on new crops and varieties and on farming techniques and that it makes a conscious effort to continuously introduce them in its extension and marketing programmes. Integrated

agriculture is a dynamic process and has to be sustained on a continuing basis with new approaches. It is therefore important that foreign assistance not be withdrawn from a project until it is known that local personnel is able to provide this continuing innovative effort. It is not sufficient to simply continue doing what was done in the past; innovations have to continue to be forthcoming.

It is possible that over the long run credit may be phased out provided that inputs continue to be made available at the rate required and demanded. Given the present land distribution system in Ethiopia and assuming no bold measures to alter this system within the foreseeable future, benefits derived from a credit programme will eventually reach a maximum when inputs per cultivated area approach optimum levels and the areas owned become the limiting factor. At this point only the very smallest farmers will be unable to pay for their inputs in cash. There has been some empirical evidence to this effect during CADU's 1972 fertilizer distribution season. In some of CADU's "old" extension areas where the project has been working for several years and farmers have by now seen their incomes substantially increased, in 1972 there was initially a great resistance among the farmers against buying CADU inputs on credit. Eventually farmers came around to realizing that the inputs might be beneficial after all, but by that time the congestion became so great that the extension agents had problems to complete all credit applications and many farmers were faced with the alternatives of paying for the inputs in cash or not having any at all. A large number of farmers actually paid cash for the inputs and CADU's overall cash sales of fertilizer in 1972 were much larger than in the previous year. This experience although very limited suggests that a great many farmers who now buy on credit in actual fact do have the wherewithal to purchase inputs on cash terms. The consumption pattern survey also suggests that this may be the case in areas where CADU has been operating for some years. If this is so, credit is akin to the technical assistance expert who to be fully successful should manage to make himself dispensable after a few years of assignment. Institutional credit is very definitely an instrumental factor in triggering small farmer development, but it may not over the long run be equally necessary in order to sustain this development.

III.D.4. Conditions for Success or Failure

There appears to be a general consensus among observers in Ethiopia that CADU to date has been a fairly successful project. CADU's experience is a convincing demonstration that small Ethiopian farmers do respond to incentives and eagerly adopt new technologies. As a consequence, CADU's package approach to rural development is being adopted by new projects sponsored by other donors than SIDA. To be sure it is yet premature to state conclusively that CADU's development effort has been successful. Enough has already been said about the problems facing CADU to make the point that the future may well hold for CADU a much slower rate of growth and that the conduct of the project is essentially becoming more complex and difficult.

However, if it is accepted that CADU to date has been doing fairly well, the following reasons for its success may be advanced.

Right technology. Undoubtedly CADU has succeeded in developing and offering farmers a new technology at the right level of advancement. Fertilizer and improved seed are easy for farmers to adopt and their benefits are abundantly clear. The agricultural implements developed by CADU adhere closely to the farmers' existing level of technology and are designed specifically to eliminate bottlenecks in the traditional farming practices. Their use therefore presents no problem to the peasant who can readily comprehend their value. CADU has not fallen for the temptation to introduce a mechanized technology that would have been completely alien to the farmers, that would have had negative social effects, and that would never have survived CADU itself. By introducing a new level of technology that is so simple that it fits into the farmers' terms of reference CADU has approached the farmers on their own level and thereby ensured rapid rates of adoption.

Right project design. Already at the outset CADU's project preparation team had recognized that the problems of Ethiopian agriculture were so fundamental that essentially the only way to tackle them was a coordinated attack on all or most of the factors hindering development. A multitude of interrelated problems required solution if any development was to be brought about. The conditions for agricultural development were so poor that the project would have to have its own facilities for research, staff training, road construction, etc., since appropriate government agencies did not exist. It was recognized that an extensive agricultural extension programme was required to disseminate to farmers the new technology and a network of marketing outlets closely linked to the extension centres to make the new technology available to farmers. It was recognized that this new technology would have to be made available on favourable credit terms if the farmers were to be able to adopt it. It was recognized that the existing marketing channels were grossly inadequate and hardly served the farmer's interests, and that a marketing organization offering to buy

the farmers' produce on reasonable terms and in competition with the traditional channels was required in order to provide the farmers with an additional incentive to increase production. It was recognized that the package offered to the farmers would have to be balanced and that efforts would have to be directed towards not only crop production but also towards animal production, forestry, and --later-- industrial production. It was recognized that economic development should be coupled with social development and that the project's active efforts towards this end were required. Finally and perhaps most importantly, it was recognized that the requisite development effort of necessity would have to be large and hence very costly.

Right approach. Although it is now gradually beginning to be evident that the heavy emphasis on wheat cultivation has to be abandoned in favour of a more diversified approach, it is in hindsight equally evident that the approach of focusing all efforts in the field of agricultural extension on this crop has been correct. It has been easy to obtain substantial yield increases for this crop and to gain a momentum that may later be diversified. Scarce resources for research and seed multiplication could focus on one crop, and the work of the extension agents, initially somewhat probing, could in this way be facilitated.

CADU's philosophy towards subsidization has also undoubtedly been a correct one. In charging farmers the true cost (albeit excluding expatriate salary costs) of inputs CADU has eliminated the risk for a future crash on the day when foreign assistance eventually has to be terminated and the programme has to stand on its own feet. CADU's marketing and seed multiplication operations are in principle expected to be fully autonomous and self-sustaining already today three years before the expiration of the present project period. It is only by making these operations self-supporting that their replication and survival of the cut-off date of Swedish funds may be ensured.

Good management. The seemingly chauvinistic statement should be made that CADU has been well managed. The project has enjoyed the rare privilege of having the project preparation team remaining almost intact for the project implementation phase thus ensuring continuity, and to this day there are expatriates serving with CADU who also served on the project preparation team appointed in 1966. It has also enjoyed continuity of management, and since 1966 there have only been two executive directors. Government support has at all times been excellent with all requisite funds forthcoming as required and on schedule. The project's autonomy within the government structure has been a great asset as it has not been hampered by most of the normal shortcomings of the civil service of a developing country. CADU has been able to have almost complete autonomy over the use of its own funds with a minimum of

involvement by either of the two participating governments once the budget has been approved. It has been able to construct its own facilities without being obliged to abide by slow government procedures and to recruit its staff at its own salary scales.

It cannot yet be said that CADU has done better or worse than other similar programmes, because virtually no similar programmes have been initiated in Ethiopia that as yet may compare their results with those of CADU. The one exception is the IBRD-assisted WADU which was initiated at the same time as CADU but has made much slower progress. However, CADU's main gain has probably been to serve as a large-scale testing ground for the development of a variety of parameters for use in the promotion of small scale Ethiopian farming. While the financial, administrative and technical resources demanded by CADU prohibit extensive reproduction of the CADU approach throughout Ethiopia, the research and organizational "spin-off" will be extremely valuable in other similar development efforts. The CADU experience strengthens the view that innovations in small farmer agriculture may be keys to both achievement of accelerated overall growth and, if carefully exploited, increased employment opportunities in existing areas. The CADU research has gone some distance toward dispelling the idea that a production agriculture is necessarily mechanized or that mechanization is essential to timeliness of operations. CADU's approach to disseminating the results of this research to farmers has provided subsequent projects with several valuable guidelines. Much of the data and information generated by CADU is unique for Ethiopia and thus offers the only indications available as to the result of certain farming techniques, extension methods, cattle breeding programmes. By providing a body of knowledge where none previously existed CADU has made its greatest contribution to Ethiopian agriculture.

III.D.5. How Could the Programme be Improved?

The procedures developed by CADU for dissemination of new farming techniques, for making these techniques available to farmers, for providing credit, for collecting credit repayments, for reducing delinquency rates are certainly not optimal but appear sufficiently workable in the peasant farmer environment to be dependable. CADU charges the farmers the full cost of the credit provided and thus no concessional interest rates in line with its basic policy of not subsidizing the distribution of inputs. It is believed that the principles underlying CADU's credit programme need not be questioned.

On the other hand, it is beginning to be clear that growth has made the CADU package increasingly complex and difficult to manage. A variety of costly activities are continued largely because of vested interests and because the bureaucratic courage to discontinue them has not existed. CADU's multitude of different activities need to be streamlined and the project's efforts focused where it is known that benefits are readily generated to the farmers. Heavy emphasis should be placed on agricultural extension and marketing while, e.g., research-- as is also planned--should be gradually phased out or converted into separate research institutions outside the auspices of CADU.

Apart from the fundamental issue of land reform which need not be further discussed in this context, there are two "macro" areas where it is believed that substantial progress could and should be made to assist the development of small-scale farming in Ethiopia. The first concerns the participation of the government in the grain trade, the second the participation of the private sector in the provision of agricultural inputs.

It is clear that the current grain marketing system in rural Ethiopia is so inadequate that a project striving at increasing the output of small-scale farming is obliged to cater not only for the provision of inputs but also for the collection and resale of the outputs. However, as CADU's experiences from this year's grain marketing activities make clear, grain marketing is a risky and difficult business for a development project to enter on its own. To be truly beneficial to the farmers the marketing system should be able to stabilize farm gate prices, but for one relatively small organization to do this without the support of a central, national body is very difficult. This calls for stronger initiatives of the government in the field of grain marketing.

At present there are two bodies operating in this field, the Grain Board and the Grain Corporation. However, their efficacy is so low that it has been suggested that the Grain Board be disbanded altogether and the Grain Corporation strengthened and given different functions. There is indeed a strong need for the strengthening of the Grain Corporation and its active involvement in grain purchasing, storage, distribution, and pricing. The minimum package programme which is to spread over the entire country brings to the fore this need for more effective government action in the field of grain marketing. In the absence of such action the marketing of the output of the minimum package areas all over the country is going to be a gigantic task which may well be the undoing of this project. The development project cannot be expected to shoulder the responsibility and financial risk--which is substantial--for grain marketing. While this has been possible with relatively limited volumes, it will simply be unfeasible with the fast increasing output (the minimum package project has forecasted an incremental production of cereals of 5,300 tons in 1971 and of 438,100 tons in 1980 as a result of its activities).

To achieve a more rapid spread of the distribution of inputs over the country, the private sector could conceivably be induced to take part. It has previously been said in this paper that it is fully unlikely that the private sector within the foreseeable future should be able to compete with or even complement CADU's activities within CADU's project area. However, there is no reason why the private sector's contribution to the distribution of fertilizer and improved seed could not be enhanced in other areas than Chilalo. Such distribution could conceivably take place in relatively easily accessible areas and involve not only small but also medium-size farmers cultivating, say, up to 100 hectares. The private sector would not be in a position to establish an extensive extension network in these areas and would probably have to rely on a few scattered demonstration fields for demonstration effect. It would not be able to furnish the same type of intensive effort as CADU within Chilalo or the minimum package project within its minimum package areas. However, if provided with agricultural inputs on concessional terms by AIDB on the same terms as CADU (i.e., the Bank retains title to the inputs until they are actually sold to farmers) private firms could be induced to establish rural centres for distribution of inputs. Some loss sharing arrangement would initially have to be worked out with the government which presumably should be interested in eliciting the participation of the private sector to this end.

With the likelihood of a bold solution to the issue of land reform fairly remote, it might also be questioned whether some type of concessions should not be developed in favour of tenant farmers within the auspices of a credit programme like that of CADU. Even though CADU does not allow purchases of inputs by farmers cultivating more than 20 hectares, the distribution of incomes between those farmers eligible for participation in the

credit programme is very uneven: a recent calculation of incomes for such farmers showed that the highest annual income of the sampled farmers was over E\$47,000 while the lowest was below E\$400. A farmer earning over, say, E\$4,000 is fairly affluent by any Ethiopian standards (a young university graduate may earn E\$6,000 per annum in Addis Ababa) and a rich man by rural Ethiopian standards. If improved income distribution is an objective per se, it may well be argued that the more affluent farmers should be made to pay for the less affluent, and that prices should be charged according to a sliding scale discriminating against the richer farmers. The difficult problem of determining exactly how much land each credit applicant is cultivating (an issue which naturally would be much more difficult to solve if farmers had a strong incentive for claiming to cultivate a small area) could be solved by farmers' committees and collective responsibility according to the system evolved by CADU.

CADU's agricultural extension and marketing activities could possibly be more effectively conducted if they were merged into one organization. At present they are two separate field networks: one system of extension offices run by extension agents and administered by the Extension and Training Department, one system of trade centres run by trade centres foremen and administered by the CADU Marketing Division. While the agents and the foremen are expected to co-operate closely in the conduct of the credit programme, field coordination is frequently imperfect. The Extension and Training Department and the CADU Marketing Division also find that they often have conflicting interests: the former wishes to reduce prices of inputs as much as possible in order to maximize the number of participating farmers while the latter is anxious to charge prices that not only cover costs but also yield a profit. This dualism should be eliminated and these two units be merged. While this may be desirable in theory, such a merger would in practice present a variety of organizational and staff problems, and it is doubtful whether it can so late in CADU's lifetime be brought about.

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IV. ROLE OF TECHNICAL ASSISTANCE

IV.A. AID Inputs

AID is in no way involved in the conduct of CADU.

IV.B. Other Donor Inputs

CADU is financed jointly by the Swedish International Development Authority (SIDA) and by the IEG. These two parties contribute in kind and in cash towards the costs of the project. In principle, senior Ethiopian staff is provided under the Ethiopian in kind contribution, expatriate staff under the SIDA in kind contribution, while operating costs (i.e., costs of other staff categories, services, materials, investments, etc.) are shared under the cash contribution with SIDA defraying 67% and the IEG 33% of total costs.

CADU's goals, design, funding and the obligations of the two participating governments are specified in the Plan of Operation, where the following cost totals are shown: (E\$000)

<u>1967/68</u>	<u>1968/69</u>	<u>1969/70</u>	<u>1970/71</u>	<u>1971/72</u>	<u>1972/73</u>	<u>1973/74</u>	<u>1974/75</u>
4,637.0	5,265.0	3,960.0	5,563.1	7,283.6	6,693.5	5,689.4	5,279.8

CADU's total cost for the period 8 September 1967 - 7 July 1975 has thus been put at E\$44,371,400 of which SIDA will contribute E\$28,995,600 and the Imperial Ethiopian Government (IEG) E\$15,375,800.

The Plan of Operation shows the following estimated senior staff requirements in man years (for this purpose senior staff has been rather inadequately defined as staff of "high and middle level". On the Ethiopian side this roughly means all skilled personnel with salaries of E\$400/month and above):

	<u>1970/71</u>	<u>1971/72</u>	<u>1972/73</u>	<u>1973/74</u>	<u>1974/75</u>	<u>Total</u>
SIDA	15.25(1)	30.25	25.00	16.25	11.50	98.25
IEG	48.00(1)	149.00	186.00	211.00	229.00	823.00

There has been no significant contribution from other foreign donors than SIDA to CADU. Expatriate staff is mostly but not exclusively recruited from Sweden.

One of the fundamental points of this paper has been that it is difficult to view CADU's credit programme in isolation and broken out of the CADU package as a whole. However, if the CADU Marketing Division and the Extension and Training Department are regarded as those units within CADU primarily concerned with the credit programme, the personnel assistance they receive from SIDA may be summarized as follows:

(1) Figures for 1970/71 cover only the period 1.1 - 7.7 1971 since CADU's current agreement period runs from 1.1 1971 - 7.7 1975.

CADU Marketing Division: The head of this unit has always been expatriate but there have been no other posts for expatriate staff provided. However, recently a post has been created for an expatriate cost analyst. The current head of the unit has previous experience from Swedish farmers' co-operatives and co-operative marketing and has training in the fields of management and agronomy.

Extension & Training Department: The head of this unit was a Swedish agronomist until June 1972 when this post was "Ethiopianized". At present there is a Swedish agronomist serving as head of the Training Section, where the agricultural extension agents and the trade centre foreman are trained, and another Swedish agronomist serving as agricultural extension supervisor. There is also a Swedish lady in charge of the women's extension activities.

CADU's staff training programme has been touched upon previously in this paper but may be recapitulated here. The agricultural extension agents and the trade centre foremen are recruited from boys with 10-12 years of formal schooling. They are put through a course of 22 months' duration: first six months of theoretical training, then 12 months of practical training in an extension office or a trade centre, and finally four additional months of theoretical training. All theoretical training are provided by the Training Section of the Extension & Training Department which operates full boarding facilities with a capacity of 100 trainees; these facilities are used by other units within the Ministry of Agriculture also. Bursaries are provided to the trainees during the period of the training. Scholarships for studies abroad are only provided to senior staff: the Plan of Operation provides for E\$115,000 per annum for training abroad of CADU staff.

IV.C Effects

It may be simply stated that CADU in general and its credit programme in particular could never have been brought about without technical assistance. The approach to rural development in Ethiopia advocated by CADU's project preparation team was then entirely new to the country. The fact that this approach is now being replicated in other projects bears witness of the fact that it was well suited to the conditions prevailing in rural Ethiopia. Technical assistance was instrumental to the establishment of CADU and will, given the shortage of trained manpower and of funds for development in Ethiopia, continue to be instrumental for any current or foreseeable projects.

IV.D. Recommendations

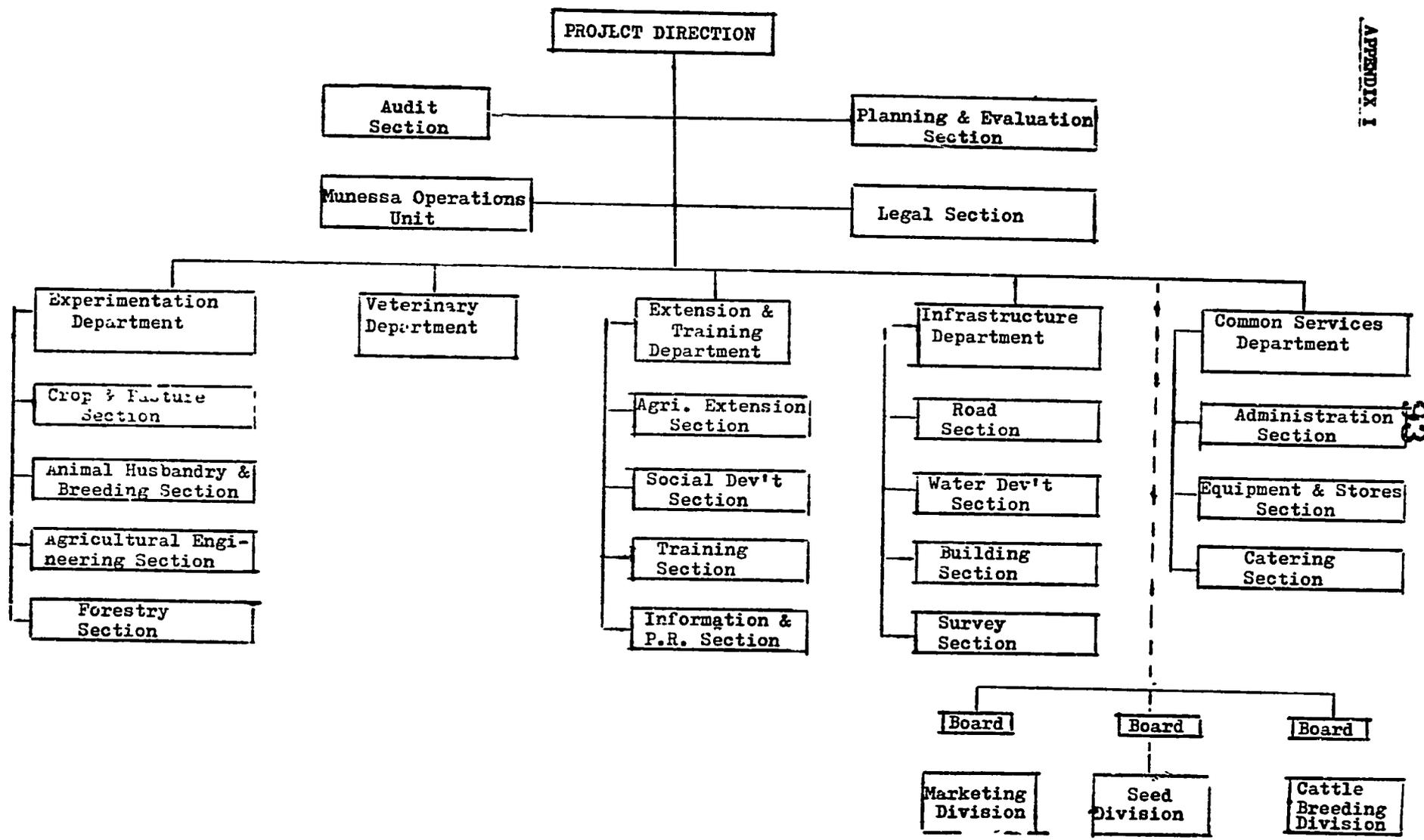
The experiences gained by CADU show that credit is an essential integral part of a package programme encompassing all major factors hindering Ethiopian rural development. It has also shown that credit alone can contribute but little to small farmer development, and that it is the integrated approach only that can have any hope of improving the lot of the peasant. A close analysis of CADU's accomplishments will also show that there are definite structural limitations to the extent to which agricultural development projects in Ethiopia can alter existing income distributions, influence social behavior, and avoid the social costs of tenant displacement given the present land tenure system and land holding patterns.

However, if CADU is considered a satisfactory model for rural development in the Ethiopian context, the best that may be done would be to replicate CADU on a national scale, and this is what is taking place with the establishment of the minimum package programme as well as other package projects like the Ada Agricultural Development Project. A programme of the size of the minimum package project represents the maximum effort the IFG is able to undertake in the field of small farmer development. In Ethiopia it is difficult to recommend anything over and above this project.

In general, it is difficult to visualize credit isolated from other parameters for rural development. The "product mix" applicable in one particular country will be very different from what is required in another: in Ethiopia it is necessary to tackle a large number of fundamental issues all at once while in, say, Kenya it might be possible to focus the efforts only on provision of credit and inputs. The role of technical assistance donors in the field of credit provision will therefore vary much from one country to another. As has been repeatedly stressed in this paper, credit is in Ethiopia but one essential factor among many to be provided by programmes aimed at fostering small farmer development.

ORGANIZATION CHART FOR CADU

APPENDIX I



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THE CHILALO AGRICULTURAL DEVELOPMENT
UNIT AS A PROGRAM INTERMEDIARY
FOR FOREIGN ASSISTANCE IN ETHIOPIA

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96

CONTENTS

	Page
I. ROLE OF LOCAL INSTITUTIONS AND JOINT ORGANIZATIONS IN LESS DEVELOPED COUNTRIES AS PROGRAM INTERMEDIARIES FOR FOREIGN ASSISTANCE	1
Findings and Implications of Initial A.I.D. Study	1
Purpose of the Study of CADU	4
II. RURAL CHANGE IN ETHIOPIA: THE CHILALO AGRICULTURAL DEVELOPMENT UNIT	5
General Background and Setting	5
Initial Aspects: Origins and Objectives of the Project	8
Operative Aspects:	
Organization and Administration	13
Plans, Programs and Means of Development	16
Outcome Aspects: Achievements, Problems and Failures	39
III. CADU AS AN INTERMEDIARY ORGANIZATION AND THE FINDINGS AND IMPLICATIONS OF THE INITIAL A.I.D. STUDY	42
Profile of CADU According to the Matrix of Most Significant Causal Factors	42
CADU and A.I.D. Intermediary Hypotheses	52
Utility and Validity of Findings and Implications of Initial A.I.D. Study in the CADU Context	52

I.

ROLE OF LOCAL INSTITUTIONS AND JOINT
ORGANIZATIONS IN LESS DEVELOPED COUNTRIES
AS PROGRAM INTERMEDIARIES FOR FOREIGN ASSISTANCE

Findings and Implications of Initial A.I.D. Study

In 1971 the Technical Assistance Bureau of the Office of Development Administration undertook a study of various institutions and organizations which could be utilized as program intermediaries¹ for foreign assistance. The purpose of the study was to evaluate prior experience with selected host country intermediary organizations in order to gain insights to the factors preventing, controlling or facilitating the effectiveness of such organizations as catalysts to change at the local level. This more specific focus was stimulated by the prior identification of local action² capability as a critical problem area in the overall task of stimulating change. The study began on the premise that intermediaries are extremely important, if not essential, mechanisms for stimulating local action, since it is usually not possible for foreign aid agencies to reach directly to the local level and stimulate the popular involvement implied by the term local action. The study placed its emphasis on the effectiveness of the intermediary mechanism as a catalyst to introducing change at the local level irrespective of the level at which the intermediary unit existed or the major function performed.

The project identified four basic types of intermediary organizations and engaged in case studies of specific organizations of each type. These basic categories and the case study of each were: (1) bi-national organizations (servicios³ in Latin America or the Chinese-American Joint Commission on Rural Reconstruction⁴); (2) host government organizations (the Philippine Rice and Corn Production Coordination Council⁵); (3) semi-

independent organizations connected with the government but not part of the formal governing structure, which have a high degree of autonomy (the East Pakistan Academy for Rural Development⁶); and (4) non-governmental organizations (the Brazilian Institute of Municipal Administration⁷).

These studies were then analyzed by a small working group in order to identify the positive and negative causal factors relating to success or failure of each organization studied. The study focused on two sets of factors: (1) intrinsic organizational features; and (2) environmental characteristics. The basic goal behind the analysis was to develop not only a set of factors which could be used to provide profiles for various intermediary organizations but to generate hypotheses pertaining to the interrelationship between such factors.⁸ The general findings of the project were that the most significant variables are: (1) the quality of leadership in terms of organization, management and motivation; (2) the mutuality of interest in regard to the congruence or divergence of interests existing between the assistance provider, the leadership of the intermediary, the target population and the other important actors involved; (3) the basic environmental factors which influence any attempt to stimulate local action, such as levels of health, education, social stratification, political tensions or previous contact with outside influences; (4) the utilization of past experience as a guide to program design; (5) the autonomy or freedom of action allowed the intermediary in undertaking programmatic action; (6) the legitimacy accorded the organization by the target population, the host government and the other important actors involved; (7) the basic resources committed to the organization's activities, such as funds, manpower, status and authority; (8) the managerial effectiveness with which the resources are employed and utilized both to achieve

its direct and immediate purposes and objectives and to enhance its ability to survive and continue to perform effectively in the future; (9) the use of other organizations to extend the intermediary into the local social system by working with existing local organizations or creating new ones; (10) the degree of congruence and integration of the intermediary with the broader national interests, policies and programs; and (11) the extent of the intermediary's concentration or dispersion of resources.⁹

In addition, the study concluded that the independent variables were leadership, mutuality of interest and environmental factors, with environmental factors being largely unalterable and leadership and mutuality of interest being alterable. Legitimacy, autonomy, resources available, congruence and use of other organizations were said to be partially dependent variables. And the use of past experience, managerial effectiveness and the extent of concentration of resources were determined to be wholly dependent variables. Finally, it was found that the causal factors could be characterized in terms of whether they are extrinsic or intrinsic to the intermediary itself, an important distinction because of the fact that intermediary organizations are frequently evaluated on the basis of their internal merit with inadequate regard to external factors.¹⁰

Four basic hypotheses were produced on the basis of the analysis of the case studies. These were:¹¹

Hy₁: That external factors are often more important than internal factors in determining the extent and speed with which success is obtained.

Hy₂: That in the absence of strong central government support, private or semi-government intermediaries are unlikely to do well.

Hy₃: That autonomy is both a critical causal factor in determining the success of an intermediary and a characteristic which makes intermediaries attractive mechanisms for extending assistance for local action purposes.

Hy₄: That the existing level of development, what might be called "initial state conditions" of the country in which the intermediary organization is located, is the single most important determinant of the nature and form of intermediaries, the purposes they serve, and the ratio of external to internal resources required.

Purpose of the Study of CADU

The purpose of this study is twofold: (1) to provide the Technical Assistance Bureau of the Office of Development Administration with a basic empirical description of the CADU project; and (2) to analyze CADU from the perspective of the significant variables and hypotheses produced by the A.I.D. study of intermediary organizations in order to produce a profile of the CADU organization as well as to test the utility and validity of the typology of significant variables and the hypotheses developed to complement them.

II.

RURAL CHANGE IN ETHIOPIA: THE
CHILALO AGRICULTURAL DEVELOPMENT UNITGeneral Background and Setting

Ethiopia is the oldest independent African nation and one of Africa's most underdeveloped countries. This ancient kingdom contains some of the most mountainous and physically diverse terrain in the world, and over 2,000 years of dynamic history as well as geographical and cultural isolation rest heavily on her. Today, covering an area of 1,221,900 square kilometers,¹² with an estimated population of 24,000, Ethiopia is one of the larger and more populous developing African countries. More than 85% of the Ethiopian people derive their livelihood from agriculture; in turn, the economy is to a great extent dependent on agrarian production.¹³ In comparison to other developing nations, the economy has been based predominantly on subsistence production with little or no market orientation, and the growth of towns and development of urbanized economic orientations have been very retarded. It was not until the end of the nineteenth century that economic growth came to the country, and although changes have occurred, they are small and confined mostly to a few isolated areas. Economic development has begun to take place in Ethiopia, but it is the development of a dramatic dualism and this historic Christian empire remains basically a nation of subsistence peasants living in the almost untouched traditional feudal world of their ancestors, behind the modern facade of the capital city, its political institutions and its complex of development plans and projects.¹⁴

Ethiopia is currently one of the most backward agrarian nations in the world; yet her potential for development is among the most promising. Despite the fact that agriculture is the foundation of the Ethiopian

economy, historically little has been done to stimulate its growth or to diversify its production patterns. However, in recent years the government has proclaimed its commitment to change in rural agrarian areas and stated its intention to stimulate the process of rural change.¹⁵ This commitment and intention have been extended to include the increase of agricultural production, the reform and regulation of historical land tenure systems, the establishment of better functioning institutions of local government, and the mobilization of rural population through a wide range of self help and community development projects.¹⁶ Towards these ends a number of ministries and agencies are involved in stimulating and attempting to implement a wide variety of policies and programs relating to the basic dimensions of rural change.¹⁷ One of these programs is the Chilalo Agricultural Development Unit (CADU) which is a large scale package program operating in Chilalo Awraja, one of the three administrative subdivisions of Arussi Province.

Historically, the Chilalo region was outside the control of ancient Abyssinia. At first it was the broodland of the nomadic and fierce Arsi Galla people, then it was conquered by the armies of Menelik II at the end of the nineteenth century and colonized by northern peoples who took the lands of the Arsi and turned them into tenant farmers, or drove them with their cattle off the plateau. The colonizers built a feudal tenure system and integrated the area into the Empire of Ethiopia, with an extremely deconcentrated local government system which emphasized extraction and law and order. Finally it came under the influence of the Swedish government as the center of one of the most intensive agricultural development programs in Ethiopia.¹⁸

The bulk of the land mass of Chilalo Awraja is situated on Ethiopia's eastern plateau, with only small regions in the north and west being located in the lower elevations of the Rift Valley. The total size of the administrative unit is approximately 10,100 square kilometers which in agricultural terms is 1,010,000 hectares or 25,000 gashas.¹⁰ The area is situated at a geographical point where the three main agrarian areas of Ethiopia merge, for there it is possible to find the plow culture, the cattle culture, and the ensete culture. Two basic types of agriculture production exist side by side in the area, the peasant farming of cereals on small holdings under complex land tenure systems, by ancient cultivation techniques; and commercial mechanized farming of large tracts of land. The area is one of the most populated in Ethiopia, containing some 395,000 people.²⁰ Approximately five or six percent of the population live in towns, of which Asella, at 17,000 inhabitants, is the largest. It is the provincial wereda capital, as well as the headquarters of the CADU project.²¹ The inhabitants of the towns are engaged primarily in administrative, commercial and farming activities. Of the non-urban population, it is estimated that 82% are engaged in settled agricultural production, 17% in semi-nomadic pastoralism, and 1% in settled livestock raising.²²

The total amount of land under cultivation ranges between 150,000 and 175,000 hectares, with more and more pasture land being placed under plow and tractor every year. The area has good soils and climate which contribute to making it one of the most promising agrarian areas in the nation. If the awraja is divided into northern and southern regions, then the north is predominantly a wheat producing area and the south a barley and flax producing region.²³ It can be roughly estimated that in the north 53% of the farmers are landowners, 29% tenants, and 17% on relatives'

land with mixed status, and in the south 40% are landowners, 39% tenants, and 21% on relatives' land. In addition, it is estimated that while some 50% of the awraja's farmers are tenants, they cultivate only 20% of the cultivated land. The average area cultivated can be estimated at 4.7 hectares, with landowners averaging 5.6 hectares and tenants 3.8.²⁴ However, although the general plow culture mode of production utilizing oxen on three to eight hectares still predominates, there is especially in the north an increased number of mechanized farmers, some farming up to 5,000 hectares.

In Chilalo Awraja there are a number of market towns and a fair infrastructure system. But both marketing facilities and the road system are in need of improvement if economic growth is to take place. Health facilities are inadequate and early death from disease is a constant part of rural life. Most of the population lives outside of the few water and electricity systems, and few of the inhabitants are able to send their children to area schools. Interest rates are high and institutional credit available to only a very few well-off farmers. These and many other aspects of the Chilalo area are covered in a set of some 80 internal CADU publications which should be consulted by those interested in a more in-depth description of both the project and the setting.²⁵

Initial Aspects: Origins and Objectives of the Project

The specific concern of this paper is the role of CADU as an intermediary organization in the process of stimulating rural change. For this purpose it will be necessary to focus on the project's objectives, its organization and administration, its plans, programs and means of development, and its achievements, problems and failures. But before moving on to these subjects, it is helpful to consider the relationship of the project to the concept of a package approach toward rural change,

for CADU is actually an integrated attack on the rural sector which tries to ensure that all the links in the chain of development are present.

As the development decade of the 1960s progressed, more and more importance was attached to agricultural development and the possibilities of providing not only additional food for rapidly increasing populations, but to improve the income levels of rural inhabitants and thereby help generate increased demands for industrial produce as well as an improved basis for capital accumulation.²⁶ One of the most promising of the schemes devised to stimulate agricultural development was the idea of concentrating development funds in promising areas where all the necessary activities and programs could be exercised in an integrated manner. This approach was particularly attractive in the Ethiopian context, for in view of the numerous constraints on Ethiopian agrarian development, it was obvious that any isolated activity would have only limited effects and the best possibilities for success lay in intensive efforts in limited areas of great potential. Such an approach is generally known as an integrated package program.²⁷ As a concept, package programs had been developed primarily in India, East Pakistan and Israel, and of the various programs, Comilla was the most influential on the CADU program design.

In the history of international development, the Comilla Project, or the Pakistan Academy for Rural Development, located near the town of Comilla in East Pakistan, must be ranked as one of the most successful and influential agricultural development programs in the third world.²⁸ While the Comilla project and others like it were to influence the developmental planning in Ethiopia, the central question relates to the transferability of the model to an Ethiopian environment. The success of the project was in part a reflection of the peculiar characteristics of the social system

in which it was nurtured, and about the only thing really in common between Comilla and Chilalo is that they were both areas selected to be the sites of package programs designed to have local but social system-wide development impact. The problems in both areas were credit, marketing, improving production, infrastructure development, cooperatives, local government improvement, local participation, training, research and long range vision, but there were certain factors present in Comilla not present in Chilalo, especially a positive orientation toward the imperatives of development by the national government, a fully cooperative set of local government organizations,²⁹ a conducive set of stratification patterns and, most importantly, an absence of landlords and the burden of an oppressive land tenure system.³⁰ Even these favorable conditions in Pakistan did not provide an easy path toward development goals,³¹ but their absence in Chilalo was to create extremely difficult roadblocks to the successful implementation of project designs and the achievement of project goals.

It is precisely these roadblocks which the Swedish government avoided giving their full consideration to when they designed the project.³² The official basis for the selection of Chilalo Awraja was said to be: (1) the existence of natural conditions suitable for intensive production; (2) the availability of transport and marketing facilities; (3) the relatively favorable land tenure conditions that existed when compared to conditions prevailing elsewhere in the Empire; (4) the people of the area seemed desirous of progress; and (5) the existence of a possibility to expand the experience gained into a larger area of Arussiland.³³ The principal problems from the Ethiopian side were perceived to be the political difficulties which were bound to arise with the introduction of concentrated development resources in such a limited area. On the Swedish side the

difficulties of the land tenure system were noted.³⁴ Both sides overcame their initial concerns, with the Ethiopian government believing that it could confine the project's impact to economic growth and developmental reforms compatible with the existing system, and the Swedish government believing that conditions in the Chilalo region minimized the land tenure problems, and accepting the government's assurances that a land reform bill would be submitted to Parliament during the first contract period.³⁵ As of 1972, the assumptions of the Ethiopian government seem to have been correct and those of the Swedish government incorrect. And the main reason for both results lies in the dictum of Myrdal which both parties were well aware of: Integrated development will not succeed if land reform is ignored.³⁶

Nevertheless, the project was promulgated and a working organization established. CADU was formed as an independent unit within the Ministry of Agriculture and charged with the overall implementation of the project.³⁷ The unit is funded by both the Ethiopian and Swedish governments³⁸ and is coordinated with a ministerial committee which was established to integrate the project with other activities currently being undertaken by other ministries of the Ethiopian government.³⁹

Objectives of the Project

At the project's initiation and the creation of CADU as an institution, the goals of the entire undertaking were: (1) to bring about economic and social development in the Awraja; (2) to give the local population an increased awareness of and responsibility for development work; (3) to verify methods of agricultural development; and (4) to train staff not only for the project itself but also for other similar efforts.⁴⁰ The

basic premise in this early stage was that economic development would be given priority and that social development would be expected to follow from success in the economic area.⁴¹ Hence the thrust of the project was to be directed at farmers in lower income brackets in an effort to improve the living standards of peasant farmers. Towards this end, it aimed at the introduction of intermediate technology and not commercial agriculture, in an attempt to increase the productivity of rich and middle peasants and tenants through agricultural innovations, credit and marketing. With the signing of a new development agreement in 1971, these goals were expanded and stated in a more explicit form: (1) the first main goal shall be the achievement of economic and social development throughout the project area; (2) activities toward this end shall be so conducted as to ensure the participation of the project area population in and their assuming of increasing responsibility for those activities; (3) CADU shall endeavor to avoid adverse employment effects (tenant evictions) and to observe opportunities to create additional employment; (4) the activities shall be directed mainly toward farmers in lower income brackets; (5) the continued finding of suitable methods for bringing about agricultural development in Ethiopia when applied in an integrated manner; (6) to create possibilities for the application elsewhere in Ethiopia of the experience gained by CADU; and (7) the increase of financial resources through an increase in the tax paying ability of the project area population.⁴²

The concern of this paper is not so much with CADU as an organization as it is with CADU as a force of change in the Chilalo region. For this reason attention will be focused primarily on the initiation of social and economic development by the project and the goal of improving the ability of the local population to participate in and eventually become responsible for the development efforts in the awraja. Before expanding

these aspects of CADU's goals, it is necessary to present some background material on CADU as an institution.

Operative Aspects:

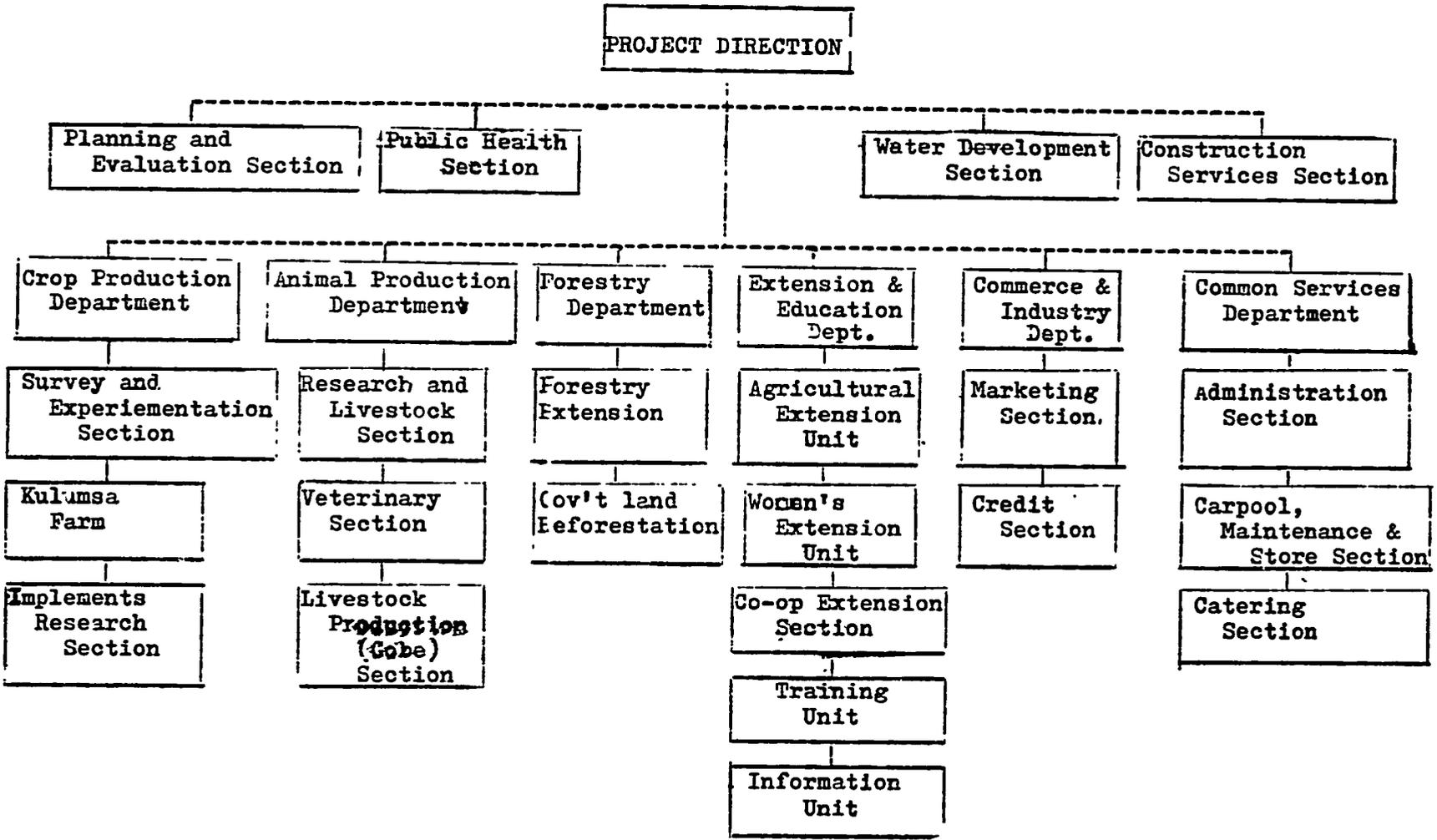
Organization and Administration of the Project

The organizational format of the project has undergone a number of amendments in the course of the first four years of operation. The CADU organization chart presented in Figure 1 represents the project as it was in operation at the end of the first contract period,⁴³ and it should be noted that the format has again been changed as of mid 1971.⁴⁴ This format is presented in Figure 2.

Responsibility for the different activities of the project is entrusted to various departments and sections, all of which operate within the common framework of an established work schedule and budget. Control of activities at the institution level is under an Executive Director who is responsible for the overall operation of the project.⁴⁵ Of the various departments and in the entire organization, the concern of this paper is with the Planning and Evaluation Section, the Crop Production Department, the Animal Production Department, the Forestry Department, the Extension and Education Department, the Commerce and Industry Department, and the Water Development Section. These departments and sections can best be described by relating their specific tasks to the overall objectives and goals of the project.⁴⁶

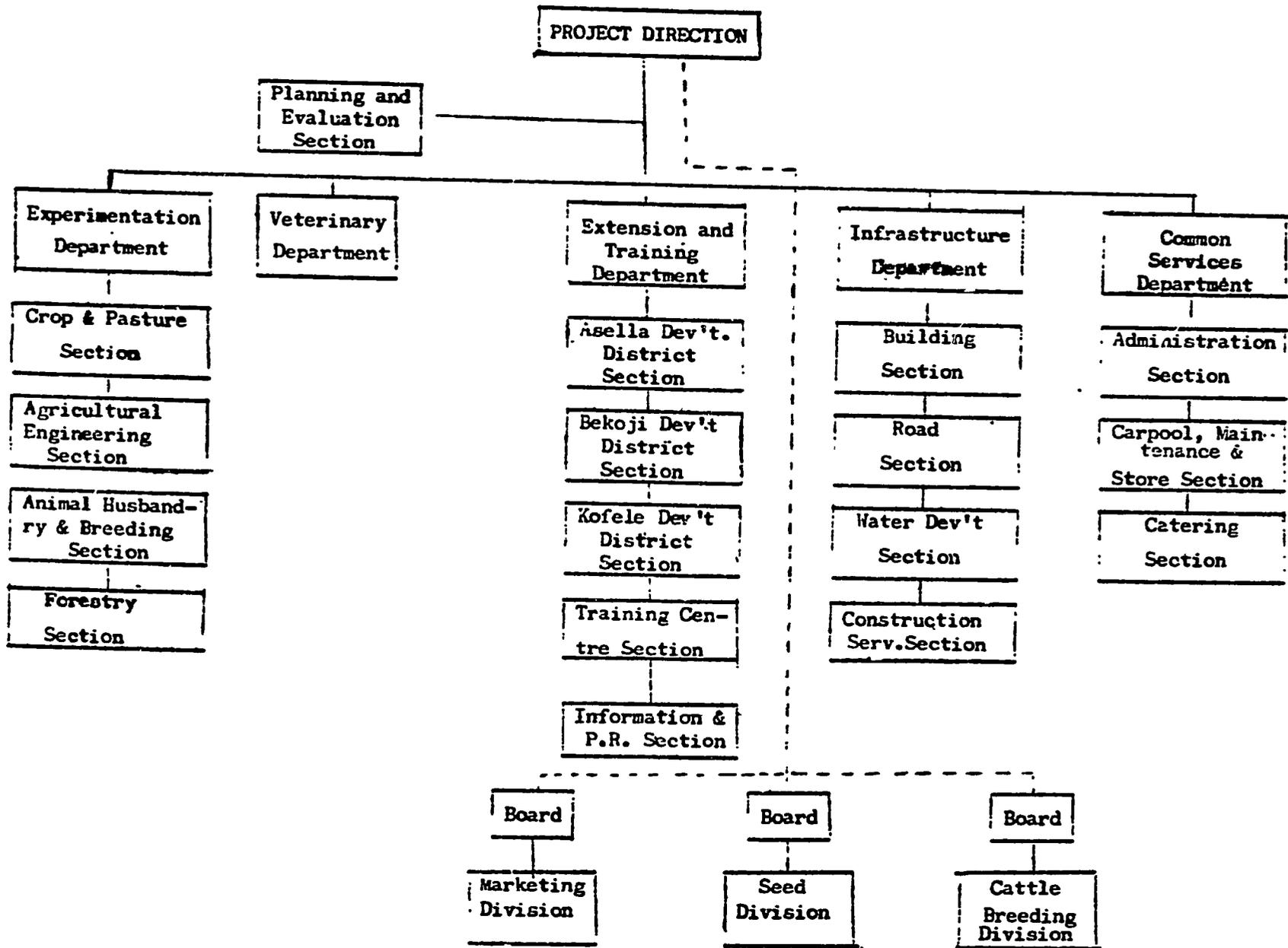
The Planning and Evaluation Section is charged with maintaining a continual evaluation of the entire organization, ensuring the efficiency of its various units, recommending ways to improve the attainment of project goals, identifying and conducting feasibility studies on potential projects and activities, collecting statistical data on the project area and the effects of the project's activities, and developing the methodology

Fig. 1 : CADU Organizational Format up to July 1971.



110

FIG. 2 : CADU Organizational Format Since July 1971.



111

of development which this planning and evaluation feedback process should produce.

The Crop Production Department has three subdivisions. The Survey and Experimentation Section directs its activities toward finding new crops and varieties, determining the optimal growing techniques for different crops and varieties, establishing methods for pasture improvement, controlling seed production with respect to trueness to variety, cleanliness and germination, improving knowledge of soil conditions in the area and determination of possibilities of drainage and erosion control, establishment of suitable methods of seed control, and developing an extension staff trained in new techniques. The Kulumsa/Asassa farms are involved in producing improved varieties of seed for sale, preparing land given to resettled peasants,⁴⁷ and operating at a level at which the entire seed production activity pays for itself. And the goals of the Implements Research Station are to develop tools for soil preparation, crop handling and transport, to increase the knowledge of conditions under which more mechanized operations can be profitably employed, to train extension staff in the use of new equipment and to train artisans in the production and maintenance of new equipment.

There are three sections in the Animal Production Department. The Research and Livestock Section is charged with establishing of optimal breeding and management methods for dairy cattle, sheep and poultry, and the training of the extension staff in new methods. The goals of the Veterinary Section are to increase the knowledge of prevailing livestock diseases, to suppress livestock diseases through preventive services, to maintain the health of cross-bred cattle through curative services, to increase the production of cross-bred cattle through artificial insemina-

tion, to produce semen from cross-bred bulls, to create a cadre of inseminators and vaccinators, to train extension staff in veterinary fundamentals and to control milk hygiene. Finally, the production and sale of grade cattle for the improvement of milk production is the principal goal of the Gobe Livestock Production Section.

The Forestry Department through its various sections aims at establishing nursery techniques and methods of planting and management of plantations, finding suitable tree species for the various ecological zones, increasing planting of trees, particularly for fuel and construction purposes and for soil erosion controls, producing seedlings, establishing timber plantations and reforesting government land in Mmessa forest and at Asassa.

The Agricultural Extension Unit, Women's Extension Unit, Cooperative Extension Unit, Training Unit and Information Unit are the components of the Extension and Education Department. The Agricultural Extension Unit tries to promote the adoption of new products, methods and inputs for agricultural development through demonstrations, advice and assistance with respect to credit applications, to improve knowledge of agricultural conditions through an annual analysis of the demonstration results, and to prepare for the extension of the project's geographic coverage. The Women's Extension Unit is charged with increasing the general concept of development among women in the project area, training women in home economics and establishing women's groups. The goal of the Cooperative Extension Unit is the creation of a basis for the establishment of cooperative societies which will involve themselves in the marketing of produce and the procurement of supplies and credit. The Training Unit takes as its major tasks the selection of groups to be given special training in various dimensions of the change process, the

training of project staff, the offering of courses for agricultural staff from other projects and the practical training of selected students from agricultural colleges and other institutions. And the aim of the Information Unit is to increase knowledge of development programs and project objectives and achievements, to create special campaigns to promote various project activities, to disseminate in cooperation with the government information about legislation pertinent to project goals, to promote self help schemes, particularly in regard to water and educational projects and to promote adult literacy work.

Plans, Programs and Means of Development in the Project Area

Implicit in the project's plans, programs and means of development is the underlying assumption that the target population must realize the possibilities of development and that the first step in this direction comes with the establishment of improved marketing facilities. This basic strategy of making the first stage of project implementation concentrate on bringing peasants into the market economy was necessitated by the developmental constraints which have been discussed. The international experience and the development literature produced out of that experience has stressed land reform as the basic foundation on which any integrated rural development program must be built.⁴⁸ Since it was clear at the beginning of the project that land reform would not be immediately forthcoming, the question arose of whether it might not be better to use the provision of services and capital inputs as a starting point for a strategy of change. However, experience in other countries indicated that when this approach is applied in areas untouched by agrarian reforms, there is a marked tendency for the benefits to be maldistributed toward the wealthier large scale farmers.⁴⁹ Since the basic aim of the project was to benefit tenants and small landowners, the risk of this starting

approach had to be avoided. Hence the only realistic remaining strategy was to begin by trying to bring the peasants into a market economy by offering them the possibility of selling their agrarian produce at a fair and stable price. The idea was that as the peasant came to understand the incentives of market production, he would more readily accept the utilization of improved inputs which utilization would in turn be stimulated by the offering of attractive and simple credit facilities, as well as the demonstration of benefits from new inputs by extension and education activities. In the processes, the GADU officials would supply a number of services in order to stimulate the entire process and at the same time hope that the Ethiopian government would deliver some type of tenure reform by the time the overall process had gained momentum. This strategy is illustrated in Figure 3.

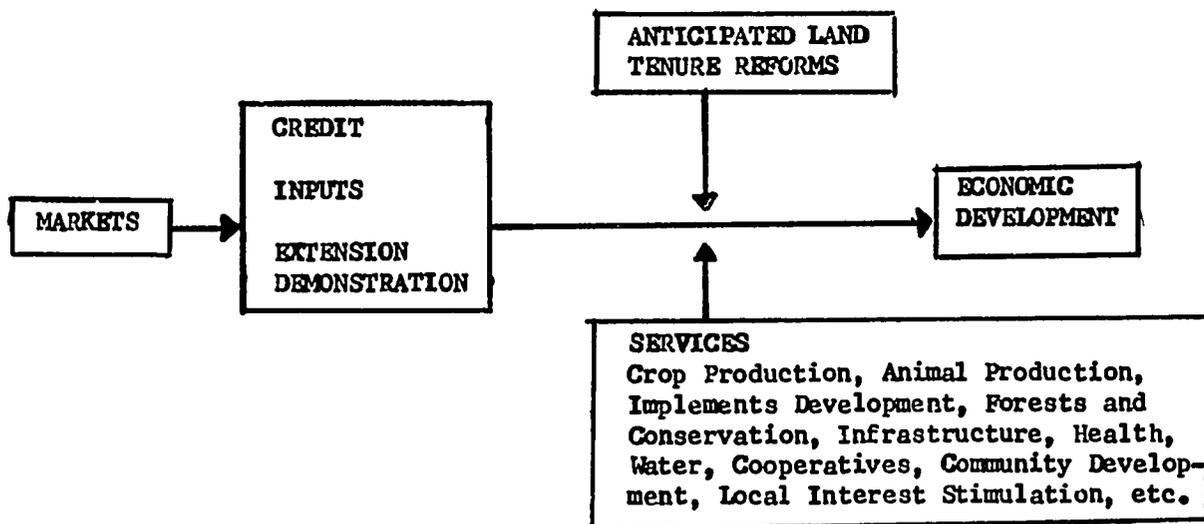


Fig. 3: The Basic Economic and Social Developmental Strategy Utilized by the GADU Project in Chilalo Awraja

The other aspect of the project's strategy which concerns this paper relates to the improvement of the local population's ability to participate in the development process. The underlying assumption is that for develop-

ment to be successful, the target population must want to improve its own position as well as that of the social system in which it lives. Toward this end the project aimed at making the target population aware of the possibilities of development and stimulating needs which their cooperation and activity could fulfill. The importance of local participation is underlined by the 1970 project appraisal team which argued that the project was not likely to reach the first objective of contributing significantly to economic and social development unless it reached the second objective of obtaining the active participation of the local population in the development process.⁵⁰ The general position of the project officials has been that local participation hinges in part on the local government officials and in part on direct attempts to contact local people and win their confidence and support. It is interesting to note that little effort was made to gain the support and acceptance of project activities by those rural and urban community leaders who constitute the provincial elite of the awraja social system. The project basically runs against many of the interests of government officials, major merchants and businessmen, large landowners, traditional secular and religious leaders and a host of local notables. This is because there is generally a contradiction in any programs to enlist their support for efforts extending beyond growth. The significant reforms required to stimulate all dimensions of change would greatly threaten those provincial elites whose present power and status are largely dependent on maintaining the traditional social order and the land tenure systems on which it to a large extent rests.⁵¹ But the issue is actually moot since the project has had remarkably little effect on the goal of target population participation through either of the basic strategies that have been attempted. The overall participation strategy is illustrated in Figure 4.

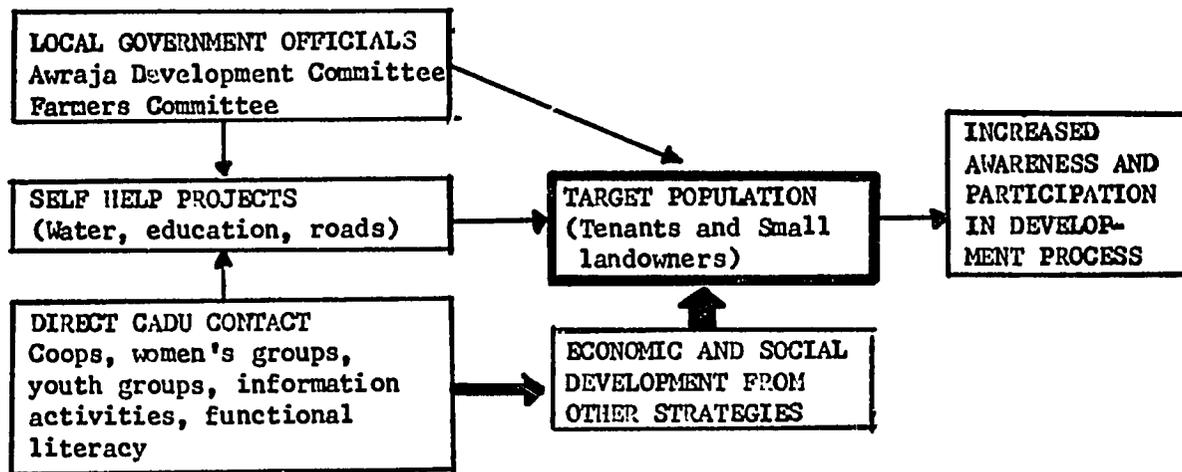


Fig. 4: The Basic Target Population Participation Strategy Utilized by the CADU Project in Chilalo Awraja

The first steps taken by the project in 1967 and 1968 were to introduce trading centers which offered farmers the possibility of selling milk and wheat at fair and stable prices. Prior to this time the marketing of farm produce was controlled by petty traders, marketing middlemen and grain merchants who bought at poor prices which they fixed at will and under weighing conditions that ran a cheating factor of as much as 15% against the seller. The decision to concentrate on milk and wheat markets resulted from the fact that the area was best suited for such production and that markets were favorable for such products. Purchase prices for both milk and wheat were maintained above the traditional market prices, which was not difficult to do given the exorbitant margins characteristic of that sector of the economy. On the whole the farmers received an additional net income of \$E 1 per quintal. One of the objects of this process was to influence market prices upward through CADU-introduced competition, in anticipation that higher prices would influence the target population toward favorable market orientations. In the process CADU bought grain and milk from all farmers in order to aid the operating cost by increasing volume and lowering sales costs.

Prior to the arrival of CADU there had been no real possibilities for marketing milk, despite the economic potential of cattle raising in the area. But as of 1971 eight milk collection stations were operating on the Asella to Bekoji road. Milk is collected once a day, tested for sourness and possible foreign ingredients and processed with CADU dairy production equipment in Asella. The collection stations pay delivering farmers \$E 0.25 per litre and aim at a minimum sales price of \$E 0.35 per litre. Initially, the project had aimed at the sale of milk in the major markets of Nazareth and Addis Ababa, but in mid 1971 most of the milk being collected was sold to CADU employees and Asella townsmen.⁵² The major problem with putting the project on a self supporting economic basis is the fact that the project requires some 1,400 litres daily to cover its costs and seasonal variations due to poor pasture, transhumance practices, and the low production capacity of indigenous cattle. Some efforts have been made to study pasture land problems, to introduce supplementary feeding during the dry season and to cross breed local stock with imported animals in order to improve milk production. Although the milk production market showed increased collection for the first three years, it dropped significantly in 1970/71. The main reason for this drop appears to be that farmers find wheat cultivation more profitable than cattle and that development is creating land utilization pressure on former pasture land.⁵³ However, the cattle breeding activities described later are designed to improve milk production greatly. These cross bred cows will sell for more than \$E 500 so it is essential to maintain this market as an inducement for sales. Therefore, an increase in milk marketing is a long range proposition. The purchases of milk in this area of market stimulation are given in Table 1.

TABLE 1

MILK PURCHASES BY CADU MILK
COLLECTION STATIONS 1967/1968
to 1970/71

YEAR	NUMBER OF STATIONS	LITRES COLLECTED	COST/BENEFIT (\$E)
1967/68	1	4,000	600
1968/69	1-5	136,000	20,400
1969/70	6	318,000	47,700
1970/71	8	159,000	23,850
1971/72	9	147,113	22,066

Source: CADU, Planning and Evaluation Section, Cost/Benefit Analysis on CADU for the Period 1967/68-1974/75 (Asella: Chilalo Agricultural Development Unit, 1971), p. 5.
The cost/benefit figure represents the price increment paid by CADU above traditional market prices. CADU, Marketing Division, "Annual Report 1971/72" (unpublished internal memorandum), p. 3.

The principal plow culture crops are wheat, barley and flax. For market oriented reasons, CADU primarily entered into the purchase of wheat but gradually expanded into barley and flax as well. In the process of purchases, the project has not fully covered its own marketing costs through sales, but this condition is changing because of the improvement in storage and transport facilities.⁵⁴ The only major problems in the stimulating of markets have occurred in regard to wheat. The decline of wheat prices in 1971/72 led to confusion that has been taken advantage of by provincial economic and political elites to erode the confidence of the target population in CADU and to attempt to freeze CADU out of grain marketing activities.⁵⁵ The purchases of wheat, barley and flax in this area of market stimulation are set forth in Table 2.

TABLE 2

WHEAT, BARLEY AND FLAX PURCHASES AND COST/BENEFITS
BY CADU TRADE CENTERS 1967/68-1970/71

YEAR	WHEAT		BARLEY		FLAX	
	(Quintals)	(Cost/SE)	(Quintals)	(Cost/SE)	(Quintals)	(Cost/SE)
1967/68	480	1,440	-	-	-	-
1968/69	2,300	6,900	-	-	710	2,840
1969/70	6,314	18,942	-	-	798	3,192
1970/71	23,980	71,940	520	1,560	6,100	24,400
1971/72	93,887	281,661	12,149	36,450	3,327	13,308

Source: CADU, Cost/Benefit, pp. 4-5. The cost/SE figure represents the price which CADU has paid above traditional market prices. This has averaged \$7 3/quintal for wheat and barley and SE 4/quintal for flax. CADU, Marketing Division, "Annual Report 1971/72," p. 1. In 1971/72 CADU also bought 1,068 quintals of peas, 904 quintals of rape seed and 1,900 quintals of maize.

At first the purchases of milk and wheat were small, but by 1968/69 the farmers had developed enough interest in CADU marketing activities that it became possible to introduce the three variables of improved inputs, credit and extension demonstrations. The basis of improved inputs was in the first instance research.⁵⁶ Early in the project good results were achieved in variety tests and the project was soon ready to distribute improved varieties of seed.⁵⁷ These were matched with fertilizer and soil studies.⁵⁸ In addition extensive experiments were carried out to produce an impressive accumulation of data on soil preparation, seeding rates and methods, pasture management and fodder conservation, weed, pest and disease control and crop rotations.⁵⁹ In terms of the availability of inputs to the target population, the only supply problems have been with fertilizers. This relates to the need to forecast fertilizer needs so that a sufficient quan-

tity can be imported each year.⁶⁰ Good seed production has been achieved and efforts in this area may level off as farmers begin to save seeds from improved seed harvests and even begin to sell surplus seeds to other area farmers.⁶¹ It should be noted that by 1970/71 CADU crop experiments had led to sales of improved barley seed, maize seed and fodder beet seed.

With the groundwork for inputs successfully laid, the question became one of the best way to introduce these yield-increasing improvements to the farmers. The solution was to create an extension system based on model farmers and demonstration plots. As in most underdeveloped countries, literacy levels made it necessary to awaken farmer interest through successful demonstrations rather than through written materials. So in 1963/69, while the marketing activities were continuing to expand, an effort was made to demonstrate the effects of new inputs. Toward this end CADU established extension areas under an extension agent who worked with a number of model farmers.⁶² CADU called together all of the farmers living within designated 800 hectare areas and asked them to select from among themselves five candidates⁶³ of whom one is chosen by CADU to be a model farmer. The extension agent then works with the model farmer to teach him how to use the new inputs and uses his land for demonstrations and field day activities⁶⁴ when new techniques are further demonstrated. The agent is also located in specific towns where he maintains an additional demonstration plot. The main emphasis was put on the use of high yield wheat seeds and fertilizers. The results in the first year of demonstration were remarkable⁶⁵ and demands for these inputs began immediately. It must be assumed that this was due not only to the successful extension and demonstration efforts but also to the successful awakening in the target population of an awareness of the possibility of non extractive markets.

It was clear from the very beginning that the demonstration of new inputs and the provision of fair markets would achieve little success if the target population of tenants and small landowners could not afford the new inputs. The provision of credit for these farmers and the distribution of the selected seed variety and fertilizers began prior to the sowing season of 1968. The extension of credit and the distribution of inputs was done through the trade centers under the guidance and control of the extension agents and trade center foremen, with credit given in the form of seeds and fertilizer rather than in cash. In 1968/69 there were nine trade centers and seven extension areas; together they serviced 868 farmers who had decided to take advantage of new varieties of seed and/or fertilizer. The results proved so satisfactory that in 1969/70 18 trade centers and 10 extension agents provided credit and fertilizer to 4,769 farmers. Finally, in 1970/71 the results had led to 25 trade centers and over 20 extension areas providing services for over 14,146 farmers.⁶⁶ However, these figures represent those taking credit. More than these numbers actually bought seed and fertilizer during the given periods, as only credit and extension services are reserved to small farmers.⁶⁷

The farmer and the extension agent prepare a loan application supported by a simple farm plan accepting the new inputs and related agricultural techniques. If the application is approved, the farmer obtains from the trade center the requested supplies against a certain percentage of cash payment. A nine-month loan agreement terminating after harvest covers the remainder of the cost of inputs.⁶⁸ CADU has tried to keep the loan burdens as low as possible by making all inputs available at the lowest possible cost and by providing credit at an interest rate of 12% per annum.⁶⁹ Participating farmers who do not repay their loans at the end of harvest season are excluded from obtaining future loans.⁷⁰ The

down payment figure amounts on the average to 25% of the value of inputs and carries the condition that the crop be resold to the collection center.⁷¹

These credit arrangements have proved attractive and under the stimulus of the CADU market have continued to grow annually,⁷² a fact clearly reflected in the figures of Table 3.

TABLE 3

AMOUNT OF CREDIT AND NUMBER
OF LOANS EXTENDED BY CADU
1968/69 to 1971/72

YEAR	NUMBER OF LOANS	TOTAL AMOUNT OF CREDIT EXTENDED (E\$)
1967/68	189	15,700
1968/69	868	154,461
1969/70	4,769	502,875
1970/71	14,146	1,437,517
1971/72	12,480	1,063,120

Source: CADU, Annual Report 1970/71, p. 2. CADU, Marketing Division, "Annual Report 1971/72," p. 3.

In the course of this rapid expansion of credit, the extension agents and trade centers have been under great pressure. Each extension area agent and his assistant have faced heavy work loads and there is some evidence that the network of extension areas was expanded too rapidly.⁷³ This is actually due to the project's success which leads areas neighboring on established extension areas to pressure CADU for the creation of one covering their area. The agent's work goes beyond demonstration; in the credit application and farm plan preparation he is in an excellent position to discuss production practices with farmers and give them advice on better farm management. The trade centers have also expanded rapidly. They sell

farmers seeds, fertilizer concentrate, implements, insecticides, herbicides and knapsack sprayers, and plastic buckets and milk pots for rent to milk suppliers. They also are the centers for purchase of wheat, with some centers also used as milk collection stations. In the sale of seeds, fertilizers and other farm goods, CADU tries to break even. For example, in 1970/71 it bought wheat at \$E 23.50 per quintal and sold it in larger markets for \$E 27.50 per quintal, with fertilizer purchased at \$E 33.05 per ton and sold at \$E 38.00 per ton.⁷⁴ The margins were used merely to cover administration of marketing process, transport and storage costs. The increased sales of inputs are reflected in Table 4.

TABLE 4

SALES OF QUINTALS OF IMPROVED
WHEAT AND FERTILIZER BY CADU
1967/68 to 1970/71

YEAR	IMPROVED WHEAT (in quintals)	FERTILIZER (in quintals)
1967/68	1,400	25
1968/69	5,465	3,431
1969/70	8,250	15,670
1970/71	14,600	45,325
1971/72	4,664	34,990

Source: CADU, Cost/Benefit, p. 4. (Note: these figures include sales on both cash and credit basis). CADU, Marketing Division, "Annual Report 1971/72," p. 3. Cash sales expand the 1971/72 figures slightly.

In the initial years CADU extended credit and inputs to any farmer willing to innovate, and the development constraints in the awraja became apparent in the results which followed. In particular, the uneven distribution of land and the tenancy or sharecropping patterns led to the unfortunate occurrence that participants in input and credit programs

tended to be outside the target population of tenants and small landowners. For greater clarity, the target population was considered to be owners with less than 25 hectares and tenants with less than 40 hectares. When credit statistics were analyzed it turned out that of the \$E 15,700 extended in 1968/69, 32% had gone to farmers holding more than 40 hectares. In 1969/70 this increased to 34.5% but by 1970/71 the percentage had dropped to 2.0%.⁷⁵ Conversely, the tenants took 3.9% in 1968/69, 15.4% in 1969/70 and 27.6% in 1970/71.⁷⁶ This rather dramatic turnabout resulted from major modifications in the credit program. In 1970 it was decided that credit would be strictly limited to the original target population. Tenants on more than 40 hectares and landowners with more than 25 hectares could continue to buy inputs from CADU on a cash basis but they were no longer to receive credit toward such purchases.⁷⁷

In terms of the benefits accruing from the marketing, inputs, credit and extension activities, the project seems to be a very sound investment.⁷⁸ The total net project cost, total minimum benefits and internal rate of return are set forth in Table 5, and they indicate that after an initial period of heavy investment, total minimum benefits are rapidly approaching the gross cost of the project. The benefits of the project were at first generated solely by the use of improved wheat seeds; however, as of 1970/71 the benefits were due to fertilizer and improved wheat together.⁷⁹ On the basis of cost/benefit calculations, the Planning and Evaluation Section of CADU estimates that the existence of the project has increased the real annual income of the average farm household in the project area by 10% under conservative estimates. That is, whether or not the farm household has participated in CADU activities, its real income has increased by \$E 75. But for those who participate, the increase amounts to some \$E 337 per year

TABLE 5
 COST/BENEFIT AND INTERNAL RATE
 OF RETURN OF CADU PROJECT
 1967/68 to 1970/71

SUBJECT	1967/68	1968/69	1969/70	1970/71
Total Minimum Benefits (\$E)	52,080	511,157	1,726,806	3,954,119
Total Net Project Cost (\$E)	2,880,100	7,312,500	3,660,800	5,636,400
Difference (\$E)	2,828,020	6,801,343	1,933,994	1,682,211
Internal Rate of Return (%)	-	5%	13%	20%

Source: CADU, Cost/Benefit, p. 5. Cf. to CADU, Annual Report 1970/71, p. 7.

or approximately a 50% increase in real income.⁸⁰ It is clear from these figures that the CADU project is stimulating growth, or one of the dimensions of change in the awraja. It is also clear that the project is expanding because of this economic success, a fact reflected in Figure 5, which illustrates the initial project area in 1968 and the project expansion as of mid 1971.⁸¹

However, it should be noted that these figures and tables do not measure or indicate changes in income distribution, employment within the project area, population migration, tenant eviction, increase in tax collection and public services, changes in expectations, living conditions, food consumption patterns, health, acceptance of new agricultural implements, public participation in the development project, attitudes of the target population toward change and a host of other variables relating to the other basic dimensions of change: development, transformation and modernization.⁸²

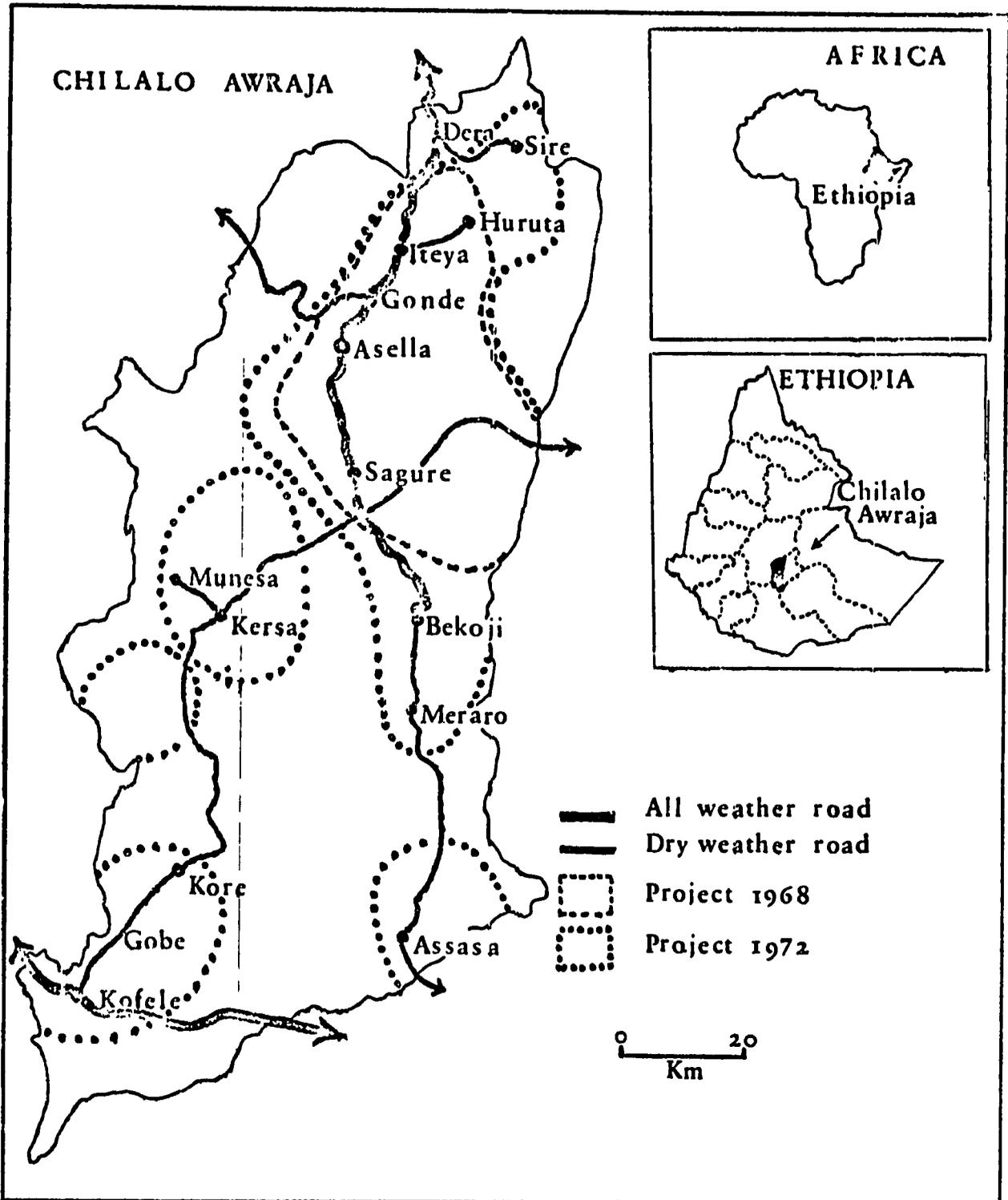


Fig. 5: CADU Expansion 1968 to 1971.

This economic growth has been supported by a number of services which will now be briefly presented. The principal aim of these services is gradually to introduce innovations to the rural population through developing crops, animals, and implements roughly similar to what the farmer has always known. On the whole, CADU has resisted the temptation to introduce wholly foreign implements and techniques to the area, the one exception being CADU's early flirtation with mechanization. Fortunately it was decided that with few exceptions it was not profitable to introduce tractors until later stages of growth had been reached. Nevertheless, services were provided to farmers in the area during the first year; however, it soon became apparent that the social cost of this innovation was tenant eviction and since that time the project emphasis has been on intermediary technology.⁸³ Toward this end the Implements Research Station has tried to improve present farming implements and develop local artisans to manufacture and maintain the new products. Concentration in this area has been on: (1) soil preparation--improving the present plow, developing a harrow for proper seedbed covering, producing simple bags for seed and fertilizer broadcasting, and designing a new hand hoe; (2) harvest, threshing, cleaning and storage--developing a better sickle, introducing a new scythe, demonstrating better grain storage systems and producing a small portable threshing machine; and (3) transport--the improvement of present animal transport by introducing wheelbarrows and ox-drawn carts in order to aid the growing market dependence and amount of agrarian production brought about by the project's presence.⁸⁴

The development of water resources for human and livestock consumption has been given high priority. Success here would be principally reflected in improved human health and increased milk production. Experts in this area have undertaken a comprehensive survey of both surface and ground water

resources, resulting in a master plan for water development.⁸⁵ Importantly, these plans are to be implemented by the awraja inhabitants rather than CADU, whose role in water development is to organize local self help activities, oversee local cost contributions, aid in long term financial loans, make available detailed plans and provide technical services where required.⁸⁶ Forestry resource activities have been connected for the most part with solving potential ecology and soil erosion problems⁸⁷ and trying to inventory forest resources, determine plans for management of resources, offer programs for better utilization of forest resources and develop seedlings for producing better varieties of trees for introduction to private farms.⁸⁸ The forestry program has been marked by mixed success,⁸⁹ but it seems to be moving in the right direction regarding its principal goals of controlling tree cutting, stopping wind and water erosion, and developing alternative timber resources.

CADU has maintained an active interest in the health of the awraja inhabitants since the very beginning of the project. The original purpose of health activities was to determine how health and nutritional factors were limiting economic growth, as well as to relate population expansion to rural problems and experiment with possibilities of introducing family planning.⁹⁰ Towards these goals, CADU has spent approximately \$E 138,195.⁹¹ As a result of this undertaking, CADU has been able to contribute to the basis of knowledge on rural health and stimulate the government to strengthen provincial health services as well as increase the nutritional teaching and family planning aspects of mother and child care. As of mid 1971 CADU had phased itself out of health activities and turned over health service performance to the government.⁹²

Finally, CADU has shown acconsistent concern with infrastructure problems. It is clear that an adequate local road network is important in

the stimulation of area innovations, especially when they aim at increased agricultural yields and market orientations. Studies⁹³ have produced proposals to build five stretches of road totalling 150 km⁹⁴ as well as to improve and construct market facilities, and to date some progress has been made in this area.⁹⁵

Since the activities of the Crop Production Department were covered earlier, it remains only to consider the innovation services of the Animal Production Department. The main thrust of this service has been toward improving the milk producing capacity of the region through the introduction of cross-bred cattle and the use of veterinary services to undertake preventive measures against livestock disease. CADU has undertaken to improve the low lactation ability of indigenous cattle by producing cross-bred animals, demonstrating them to local farmers, leasing them to interested farmers, and providing artificial insemination services for successful farmers.⁹⁶ Original production of cross-bred cattle took place on 250 hectares outside Asella, but today production is carried out on the 2,800 hectare farm in Gobe and the 2,500 hectare farm in Asassa. Production of animals has increased steadily and now numbers over 1500.⁹⁷ Artificial inseminations have been extensive but results have not been entirely satisfactory.⁹⁸ Experimentation has been carried on in regard to cross-breeding, lactation, feeding practices and cattle management and housing.⁹⁹ Finally, veterinary services of the project have concentrated on vaccinating for rinderpest, anthrax, contagious pleuropneumonia and other disease, offered some curative services for hoof-and-mouth disease, parasites and brucellosis. It is unclear whether all these efforts in animal husbandry will have significant impact on economic growth in the awraja, for the recent trend has been toward a reduction of pasture lands

in favor of the returns in crop production. Farmers find the cattle produced by CADU to be expensive and the artificial insemination programs have had mixed results.¹⁰⁰ These problems are clearly reflected in the leveling off of milk marketing activities previously described. Thus it is entirely doubtful whether the cattle potential of the area can be tapped to the extent originally envisioned by the project founders.

Although the strategy used by CADU to achieve economic development has had solid success, the same results have not been achieved for the strategy of increasing the local population's participation in the development effort. Cooperatives have gotten off to a slow start, in part because of the restraints of land reform and the vested interests of provincial elites and in part because of the project's decision to let cooperatives develop slowly as social trust in CADU's activities and the possibilities of development grow. CADU's long range goal is to convert marketing activities, sales of inputs and credit facilities already described into cooperatives. The idea is to assemble participants at the trade centers on a number of occasions and inform them about coops and what they can do for a rural population. After such elementary instruction, they are encouraged to elect trustees who undergo more intensive training courses wherein CADU staff instruct them on the economic advantages of group over individual purchases, sales and credits, and train them in the daily management activities of cooperatives. Pre-coop societies are then formed in which the trustees participate in all activities of the trade centers, which continue to be run by CADU. Finally, when the time is ripe, the trustees and participants inherit the trade center as a cooperative. By mid 1971 CADU had aimed at cooperatives in the trade areas of Bilalo, Kechema, Asella and Sagure, but only the Bilalo coop was operative.¹⁰¹

It is probably correct to argue that the goal of local participation was intended to be more than the passive utilization of CADU services and that it was intended that individual farmers become more involved in, and eventually responsible for, the making of decisions governing events and activities beyond their own farm boundaries. The project has proven that peasant farmers, despite land tenure and other constraints, are responsive to economic innovation.¹⁰² But this growing awareness of economic innovation and the possibility of change has not yet led to a trend toward social mobilization. Attempts to stimulate local governmental participation have been notably unsuccessful and grass roots farmers organizations have yet to get off the ground. Only in the extension service, the coops, and a few isolated self help activities has any form of local participation taken place. The reasons for this lack are intricate and the subject of much discussion;¹⁰³ perhaps the best way to introduce this problem is to analyze the failure of the Awraja Development Committee and the cumbersome Farmers' Committees.

The general position of most foreign advisors to the project has been that it must work closely with local government officials. In virtually all the commentary on this subject CADU has been severely criticized for failing to do so. Not once has any advisor questioned the underlying assumption that local government officials want to work with CADU, at least on anything more than the stimulation of economic growth, or the possibility of gaining personally from CADU-connected activities.¹⁰⁴ One of the central emergent propositions of this paper is that it is very much against the interests of local government officials and their provincial elite allies to stimulate local participation. In other words, although it is clear that the project was not very well designed in regard to stimulating local participation, it is also very clear that it would probably be in very much

the same situation as it is today had the project design been good.

One of the few concrete attempts to engage in local participation and dialogue was the Awraja Development Committee, which was intended to serve an information and coordination function. It met only once, on January 16, 1969, to discuss an agenda covering an introduction to CADU, marketing, credit and cooperative programs, industrial and commercial possibilities, extension programs, identification of model farmer activity, experimental land adjudication issues, rural science teaching, the Asella water system, and water and road development programs. Attending were the Awraja Governor, the Mayor of Asella, the wereda governors of Tiyo, Dodota, Metosa, and Tiyo, the provincial education officer, health officer, agriculture officer and land reform officer, the executive and assistant executive directors of CADU, representatives of farmers in each of the six extension areas, and representatives of the major businessmen and landowners of the area.¹⁰⁵ The initial problem with the meeting was that its members varied considerably in terms of status and power, which under the values and norms of the traditional system inhibited from the beginning any real interchange of ideas or cooperation. In the presence of such problems the meeting was static and neither side ever seemed able to muster the effort for bringing another meeting together.

As time passed and the top level staff came under increased pressure to build toward popular participation, the project seemed to turn toward the opposite pole of the Ethiopian hierarchy and aimed at the formation of Farmers' Committees.¹⁰⁶ Actually the scheme involves four levels with an end goal of 600 Model Farmer Area Development Committees with 3,000 members at the bottom. Here the model farmer, a local government golmassa, three elders and the extension agent work as a committee in each model farmer area to increase cooperation, coordination and exchange information

on the local level, to provide a forum for transmission of CADU programs, to provide feedback on the project, to undertake credit screening, and to create a nucleus for collective responsibility. Above this level is the Extension Area Development Committee which has the same objectives and is expected to number 40 committees with 280 members, composed of an elected model farmer, an elected golmassa, three tenants and two landowning farmers--the model farmer, golmassa and farmers elected from among their members--and the agricultural extension agent, trade center foreman, marketing supervisor and agricultural extension district supervisor of the extension area. Serving the same objects but over a wider geographic area will be the four District Center Development Committees with 57 members, each committee having a representative farmer elected by the extension area committees, all wereda governors in the development district, and the agricultural extension supervisor and marketing supervisor of the district. And finally, serving the same purposes as well as seeking to ensure greater integration of development work with local administration, the 21-member Awraja Development Committee operates with the Awraja Governor, the Executive Director of CADU, a representative of the provincial enderassie, a farmer representing each district, all wereda governors, field agents of all ministries in the awraja, a head of CADU Information Unit, and others who might be appointed from time to time. Above all this is the now existing ministerial committee which will aim at coordinating CADU with other activities of the Ethiopian government.¹⁰⁷

This cumbersome and complicated scheme has been planned as far as the implication of forming these committees on the work load of CADU employees and cost calculations regarding transportation, per diem, stationery and other expenditures.¹⁰⁸ What does not seem to have been thought through is

whether or not the system will work. It would seem as if the CADU officials have come under pressure to improve local participation and are reaching out for impressive solutions. But Chilalo Awraja is not Comilla Thana and has no social foundation for building basic democracies. If the Awraja Development Committee has proven unworkable for the project's history, why should this ponderous substitute work?¹⁰⁹

Operating under all these efforts to generate local participation is the Information Unit. It has engaged in an almost propaganda-like effort to inform people about CADU's objectives, activities and achievements through the use of portable units to cover market places, church gatherings and other public meetings. It is now considering the idea of politicizing the people in order to prepare them for the possibility of land tenure reforms and to teach them about the system so that CADU may survive after the Swedish presence ends.¹¹⁰ Whether this will work or not is an entirely different matter.¹¹¹

Outcome Aspects: Achievements, Problems, and Failures¹¹²

The initial objectives of the CADU project were to bring about economic and social development, to give the local population an increased awareness of and responsibility for the development process, to verify methods of agricultural development, and to train staff not only for the project itself but for other similar projects. Moreover, the specific aim of the project was directed at small scale landowners and tenant farmers with an intent to raise not only their production levels but their standards of living. Unfortunately, the Swedish survey team which established the project design had little understanding of the economic, political and social realities of Ethiopia. It is difficult to believe that a group of development experts were not aware of two basic developmental factors: (1) that the

rural social system of any developing nation is inseparable from the larger setting of the central society of which it is a part; and (2) that the commitment of the center to all dimensions of change is essential to the process of social mobilization and transformation at the rural level.

Given the constraints operating in rural Ethiopia in general and Chilalo Awraja in particular, the CADU project has been remarkably successful. Change has come to Chilalo through the efforts of the project but not necessarily along the lines envisioned by the project design. Unfortunately, the constraints of feudalism, an uncommitted center, and a land tenure system which concentrated the principal source of agrarian wealth in the hands of a rural aristocracy, limited the change so that it benefitted the large farmers, the merchants and the tradesmen of the town. Not that there was no benefit to the small scale landowner and tenant, for there were substantial benefits generated for them by the project, but rather the bulk of change has tended to benefit primarily the wrong agricultural class. CADU aimed at the small scale peasant and indirectly hit the large scale farmer. It proved that improved seed and the use of fertilizer could make agriculture profitable, and it did not take a great deal of time before the provincial elites learned this lesson by observing CADU projects and began to engage in large scale mechanization and the resulting displacement of former tenants. Change came to Chilalo through the efforts of CADU, in the form of growth, but not in the form of rural development, transformation and modernization.¹¹³

Local power interests either resisted CADU programs or tried to capitalize on them. Central governmental institutions and power interests gave the project little support where it was most needed, for no land tenure or landlord-tenant legislation was forthcoming. Both peripheral and central

government officials ignored the pressing needs of CADU when those needs posed a direct threat to their vested economic and political interests. Land prices rose, grazing land was squeezed and tractors and harvesters began to appear in the north, their purchase and use stimulated by positive tax incentives, and credit incentives, instituted by the central government. Only the determined efforts of the CADU staff prevented the project from becoming subservient to these traditional forces. And only because of these officials has there been any direct and substantial increase in the standard of living and production levels of the small scale landowner or tenant. As a result of CADU's indirect influence of the large landowner, the threat of displacement by the tractor hangs over the tenant and the threat of inability to compete in economic production hangs over the small scale landowner. Little rural consciousness has developed, local participation is still non-existent, a subject political culture predominates, and political and economic power remains in the hands of those who held it before CADU arrived, and has in fact grown stronger by riding the crest of the economic boom generated by Swedish aid. Change has occurred but not the kind of change anticipated. Growth without development, transformation or modernization has come to Chilalo Awraja.¹¹⁴

III

CADU AS AN INTERMEDIARY ORGANIZATION
AND THE FINDINGS AND IMPLICATIONS
OF THE INITIAL A.I.D. STUDYProfile of CADU According to the Matrix of Most Significant Causal Factors

1. Quality of leadership. The leadership of the CADU project has been quite high. While foreign leadership is not a substitute for domestic leadership, it did provide a good initial foundation of organization, managerial efficiency and staff motivation. Fortunately the Ethiopian staff which gravitated into former Swedish held positions was particularly skilled. The present project director, Ato Paulos Abraham, is an extremely qualified and intelligent man who has served the project well. The same holds true for Ato Henock Kifle, who entered CADU as an economist in the Planning and Evaluation Section and has since become Assistant Director of the project. The Ethiopians operating at other levels are of a far higher quality than would normally be found in areas of government activity. Their working relations with the Swedish employees at the various levels of the operation have tended to reinforce their organizational and managerial skills as well as their motivation. In fact, in comparison with most other government operations found in Ethiopia, CADU employees are highly motivated and interested in their jobs--a characteristic which is clearly the result of good project leadership.

On the other hand, the quality of leadership in the local government officials is extremely low. The Awraja Governor, Fitawrari Tadesse Taye, is a rather dynamic man but his power to involve himself in leadership for change has been rather dramatically restricted by Dejazmatch Sahlou Diffayei, the Provincial Governor and his supporters in the municipal town officers and wereda governors. Since the establishment of Chilalo as a development center, the central government has done nothing to improve the local

government in the awraja. There have been no training programs or salary increases which would have promoted more efficient government. Only the appointment of the Awraja Governor indicates any concern of the center with leadership in the periphery. The local government officials, particularly the wereda governors, look to CADU for increased benefits since they know little will come from the center. They argue that their burdens have increased because of CADU's presence, its meetings, field agents, cooperatives, marketing activities and credit collection problems. Because of these burdens they believe CADU should provide them vehicles, interest free credit and better office amenities. CADU will not do this and the wereda governors resent it. CADU has been in the unenviable position of either working with the local officials who are distrusted by the target population or avoiding local government leadership and being damned for it. Actually, there is little local government would do to lend leadership and influence to aid CADU, and were CADU to work closely with local officials, they might have more trouble earning the target population's confidence. In fact, CADU's basic goals make it a threat to local administrators and it is difficult to see meaningful cooperation result, even if CADU made more efforts toward seeking its leadership and organizational support.

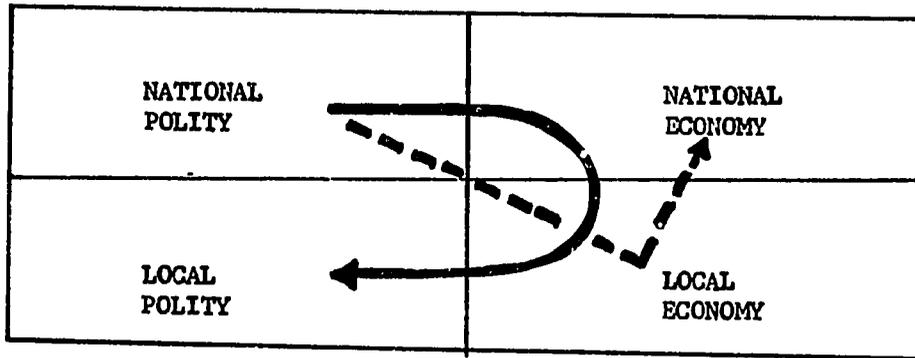
Hence the internal quality of leadership has been quite high while external local government and local elite leadership has been uninvolved, if not reactionary and hostile. It should be noted that the external leadership has to a great extent been positively oriented toward growth in terms of yields, taxes and increased roads, schools and other infrastructure items. But it has been very much against their interests to lend their leadership to the stimulation of local participation or development, transformation and modernization. The reasons for this are given in the discussion of the next variable.

2. Mutuality of interest. There has been a remarkable divergence of interest between the assistance provider and the local and national host government leadership. The result has been that it has proven difficult to link any intermediary goals beyond growth to the basic interests, policies and programs of the Ethiopian government. And it seems quite clear that this problem was not thoroughly or explicitly analyzed both before and during the period of utilization of the intermediary mechanism so that the extent to which the central authority supports or inhibits program application by the intermediary can be judged.

The basic problems of rural change in Chilalo are so enormous that they can not be solved without the active commitment of the central government to change. The basic fact about the role of government in stimulating change is that it is committed to growth and not to other more sweeping change such as transformation or social mobilization. This is because the basis of the social system is a feudalistic land tenure system that in the southern provinces exploits the peasant population, determines social status, and establishes the basis of power and authority. The relationship between land tenure and political power is such that if the government stimulates only economic growth, the constraints of the whole social system will limit the transformational effects of such growth, and if it stimulates all dimensions of change it will eventually undermine the entire traditional power structure and status system, most probably destroying it.

At a very minimum, extensive rural change can have disastrous consequences for the local polity; since the local polity is crucial to the support of the national polity, the process is being carefully controlled by the center. Hence Ethiopia has had to adopt a strategy to develop the local economy to benefit the national economy without changing the local

polity. This is very different from the strategy envisioned by the Swedish staff and most of the Ethiopian staff of the CADU project. This lack of mutuality of strategy is exhibited in Figure 6.¹¹⁵



----- = Ethiopian government strategy
 _____ = Swedish/project strategy

The low level of mutuality of interest beyond economic growth is exhibited primarily in the difficulties of the project staff in stimulating local participation and in the land tenure question. The government has not been cooperative in either area, indicating that not only is the government resistant to basic social change, but also to change which could affect economic growth. Since local participation has been discussed it seems best to consider the land reform issue in greater depth in the discussion of the next variable.

3. Basic environmental factors. The basis of the package program design has been its attempt to attack basic environmental factors. This attack has been or promises to be successful regarding most factors except those related to the land tenure system. That is, there have been many historically adverse factors holding back change, but the CADU intermediary mechanism has taken into account most of these and tried to neutralize or overcome them. The major environmental factors which have stood in the way have been: social stratification, vested interests of elites in system maintenance and an unresponsive central and local government system--all of which it is contended relate to the economics of the land tenure system and the values and norms introduced into the social system through the historical operation of the land tenure system.

The presence of CADU in Chilalo Awraja and its rather dramatic successes in diffusing innovations and stimulating economic growth has revealed the enormous problems of land tenure in Ethiopia. Although the project was designed to improve and develop the agrarian production of tenants and small scale landowners, the effects of better agricultural techniques and the use of improved seeds and commercial fertilizers has been communicated to the surrounding landowners. The major landowners as well as the middle sized landowners now realize that agriculture can be very lucrative. The result is that land prices have nearly doubled, pressure has increased on pasture land to convert it into cultivated areas, large scale mechanization has arrived in force, and outsiders have tried to profit from the infrastructural and production advantages in the awraja created by more than five years of activity by CADU and its maximum package program. The price of economic growth has been paid mainly by landless peasants, a price which has been easily extracted because of the lack of legal protection for tenants. And

in the ensuing growth, other land-related problems have been revealed. These problems relate to such basic issues as outmoded types of land tenure, cadastral surveys, land registration, unutilized lands, absentee ownership, land-man ratios, parcellation, inventory and control of government land and land grants, resettlement, land litigation and land taxation.¹¹⁶

Ever since the establishment of CADU in 1968, the Swedish government has been at the center of the land reform controversy. The initial agreement between the Ethiopian and Swedish governments contained a provision requiring the Ethiopian government to implement new tenancy legislation in the area within two years from the commencement of the project.¹¹⁷ Since such legislation was never passed, it became a substantial issue between the two governments when the first agreement expired in June 1970. At that time a six-month extension was signed, during which the Swedish government placed great pressure on the Ethiopians for reform while debate on the issue raged in the Swedish Parliament and press.¹¹⁸ When the government resubmitted the agricultural tenancy proclamation to Parliament in late 1970, it was taken as an act of good faith and a second agreement was signed extending the CADU project from January 1971 to July 1975. The new agreement contained the specific provision that the government will implement the reform legislation throughout the project area not later than one year after its promulgation.¹¹⁹ At the closing of the parliamentary term in 1972 with no action on the reform, the disillusioned Swedish government again began to put substantial pressure on the Ethiopian government. And as of late 1972 it appears more likely than ever that Swedish aid will be withdrawn from CADU and that the sole source of change in Chilalo Awraja will cease to operate because of the obvious lack of governmental support for the reform measures so critical to the removal of this crucial environmental factor.

4. Utilization of past experience. There has been little utilization of past experience in Ethiopia, primarily because there has been little past experience to make use of, and because there has been little research into rural Ethiopia. As has been pointed out in Section II of this paper, the project turned to the previous experience of the Comilla project; however, that experience was not fully parallel to the Ethiopian situation and problems of transferability followed. In a sense the on-going project is continually utilizing past experience through the operation of its feedback system of project evaluation. This is the responsibility of the Planning and Evaluation Section. While there is some evidence that project officials are sensitive to criticism of poor past performance, on the whole the project has constantly tried to respond to negative feedback. An example of this is its continual attempts to so qualify marketing and credit activities that the target population is continually aimed at.

However, it is clear that the project designers overestimated the degree of commitment of the national center to change in the periphery, as well as the possibilities for the successful implementation of land reform legislation. The direction of experience at the time of project design was quite clear on these two points. Nevertheless, the prior experience on these points was ignored or played down, the result being that they are now becoming the basic constraints affecting the successful implementation of the CADU project.

5. Autonomy (freedom of action). The project, as has been shown, has a high degree of autonomy within the institutional framework of the Ethiopian government. But while it can act on its own initiative without resorting to other authority, it can do this only within narrow parameters. Hence, autonomy in no way can imply pervasive power to solve problems.

This problem is particularly evident regarding the project's inability to control the government land in the awraja. With tenant displacement and other problems, CADU officials have attempted to gain some control over the remaining awraja government land. This land could be used to settle displaced landless peasants in order to cover the social costs of change. But project officials have had little success with the government, and land continues to be granted to major landowners of the area or to political favorites at the national center. This and other illustrations which could be presented indicate that high autonomy without power to solve a broad range of problems is not necessarily a positive element in an intermediary profile. The real question relates to the relationship of autonomy to the programs and policies of the particular intermediary.

6. Legitimacy (acceptance of role by others). The CADU project has been granted legitimacy by the government, the provincial elites, and the target population so long as it does not threaten the basic stability of the rural social system. It clearly has legitimacy at the national center, but only so far as it is supporting government policies and programs, which as was indicated earlier are rather narrow. At the local level, legitimacy is challenged whenever CADU's activities hamper certain vested interests. For example, grain merchants view CADU marketing activities as illegitimate but would support the introduction of inputs and credit to stimulate grain production. Fortunately these activities have been cross-cutting in regard to which activities are viewed as legitimate by the various provincial elites. However, there is some possibility that these issues could become more cumulative, particularly as CADU attempts to go beyond the process of stimulating economic growth. As for the target population, there is still some question about the project's success in

winning their confidence, which is the basic question of legitimation in regard to that element. This problem is illustrated in the 1971/72 drop in wheat prices issue which was set forth in Section II. Finally, government officials look on CADU as a legitimate part of the governmental system but are hesitant to allow that legitimacy to extend into fields in which they have vested interests or which threaten the power, status and authority basis of the local polity of which they are a part.

It seems clear that the question of legitimacy does affect the effectiveness of the intermediary. The significant question is not the existence of legitimacy but the question of what activities of the intermediary are legitimate and what are not, and the evaluation of such activities in the light of the organization's basic goals. In other words, the factor of legitimacy is much more useful if it is related to the type of change sought and the attitude of various types of individuals affected by such change.

7. Basic resources (funds, quality and quantity of manpower, status and authority). This factor has been discussed in Section II. It seems clear that funds and manpower have been adequate. What has been variable is status and authority.

8. Managerial effectiveness (how well resources are utilized). This factor has also been discussed. Managerial effectiveness has proven to be high both in terms of achieving direct and immediate project purposes and objectives and in terms of enhancing the ability of the project to survive and continue to perform effectively in the future. The managerial effectiveness of the project has been especially enhanced by the budget and analysis activities of the Planning and Evaluation Section. A proposed intermediary would be well advised to examine both the operation of this CADU section and its budget and program evaluation procedures.

9. Use of other organizations (extension and outreach). This has proven to be a major problem in terms of social mobilization, but not in terms of economic stimulation. CADU has created new organizations at the local level in order to extend itself into the local society. These are in the form of marketing centers and cooperatives. And, as has been shown, CADU has begun to create its own organizations to stimulate popular participation in the program. But CADU has not been able to utilize those organizations which existed in the area prior to its creation. This holds true for traditional voluntary associations as well as for organizations of local government. That CADU operates through a variety of other mechanisms and organizations is important but not sufficient, for it is utilizing organizations of its own creation. Greater success and legitimacy could be obtained if existing social organizations could have been utilized. In this sense this A.I.D. factor is misleading, as sub-intermediary organizations are not alone sufficient--the key is their acceptance and legitimacy in the local community.

10. Degree of congruence and integration with broader national interest, policies and programs. This factor has been discussed in regard to factors 2 and 3. Where there is congruence of interests between the resource provider and the national government, the possibilities of relating the project to the national system is very high. But on issues such as social mobilization or land tenure reform, isolation, competition, and conflict, rather than integration, is the result. Thus it could be hypothesized that the greater the degree of congruence, the greater the possibility for success. In the CADU case only growth was congruent with national interests, policies and programs.

11. Extent of concentration or dispersion of resources. The resources of the project have been highly concentrated and this has tended to be one of the major factors leading to the project's success in terms of stimulating growth. Such concentration is implicit in the concept of package programs and was to be expected. This concentration of resources has been presented in Section II.

CADU and A.I.D. Intermediary Hypotheses

All four A.I.D. intermediary hypotheses were operative in the CADU case. However, the hypotheses are at too high a level of generality. This is especially true of the autonomy hypothesis and the initial state of conditions hypothesis.

Utility and Validity of Findings and Implications of Initial A.I.D. Study in the CADU Context

In terms of the profile of an ideal intermediary mechanism suggested by the A.I.D. "Findings and Implications" paper, CADU scores fairly well.¹²⁰ It is in terms of mutuality of interest, one environmental factor and the use of other organizations that the project's profile is deficient. The basic problem underlying the poor score on these variables is the fundamental constraint of the land tenure system. The importance of this constraint is reflected in the validity of the A.I.D. hypotheses in the context of analysis of the CADU organization as a program intermediary. It seems clear that external factors were the critical ones affecting the extent and speed of the project's success, that without the commitment of the center to change in the periphery, CADU as an intermediary organization is unlikely to be successful, and that the existing level of development is one of the most important determinants of the nature and form of

intermediaries. The autonomy hypothesis has validity but only when so qualified that one is forced to consider the scope of power associated with the autonomy.

The low score on these factors and the negative effects flowing from the valid operation of the A.I.D. hypotheses suggests that CADU should be a marginally successful project. But since the study indicates that CADU has been very successful in terms of economic impact and very unsuccessful in terms of social impact, one must inquire into the reasons behind such inconsistency. The answer is that the A.I.D. findings do not distinguish between economic and social change or among the various dimensions of change. When these differentiations were introduced into the study, the comparative utility of both factors and hypotheses proved quite useful, and it is suggested that the matrix of factors and the hypotheses be expanded in order to incorporate at least the four basic change-related dimensions utilized in this study. Such an expansion or clarification would allow for a much more accurate comparative typology of intermediary organizations.

A major issue not fully reflected in the A.I.D. study is the type of change sought. It is assumed that most nations seek growth and the real question is the extent to which they seek change beyond growth. Hence, it would be fruitful to develop a typology comparing economic, political, social, and cultural change that an intermediary could possibly aim at in the stimulation of growth, development, transformation and modernization. The relationship of such a typology to each of the 11 factors would allow for the production of differing ideal intermediary profiles for differing sets of goals in regard to change.

As for the hypotheses, the CADU study found the four which were presented in the A.I.D. study to be generally adequate and valid. In terms of change it can be hypothesized that:

- Hy₁: The more an intermediary's goal is growth, the greater the possibility of its reaching its objectives.
- Hy₂: The more an intermediary's goal is development, transformation, and modernization, the more difficulties it will face in reaching its objectives and the more critical the issue of an ideal intermediary profile.¹²¹

And the study suggested that the following hypotheses be tested against A.I.D. data from other intermediary studies:

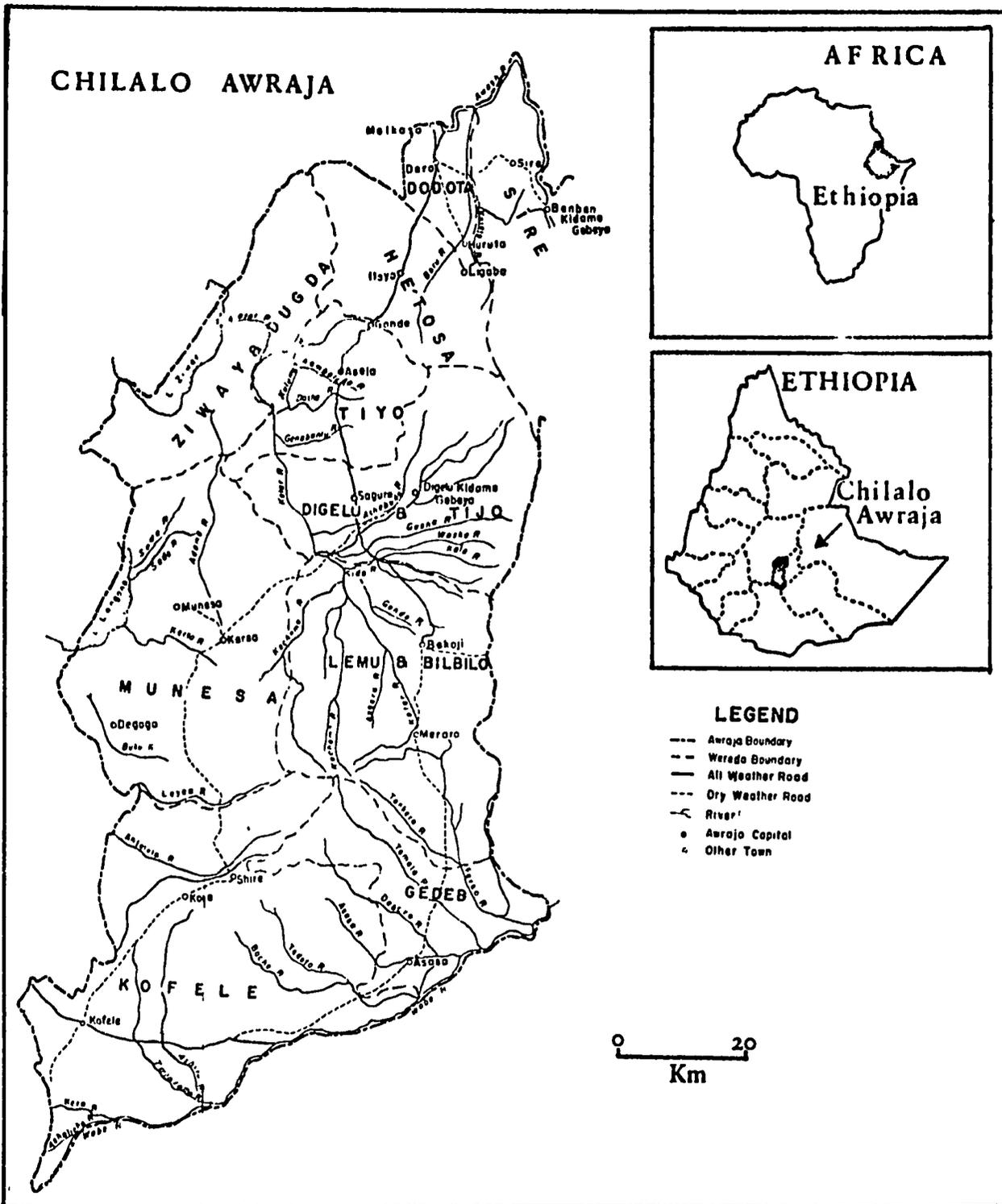
- Hy₃: The more completely integrated the preexisting social system the less likely an intermediary organization will be able to induce change beyond the dimension of growth.
- Hy₄: An intermediary organization is less likely to introduce change into a preexisting social system, the greater the concentration of power in the hands of vested local interests.
- Hy₅: The more the rural social system is adapted to its environment the greater the problems the intermediary will face in attempting to stimulate change.

These hypotheses suggest that more attention should be given to local government officials and local elites,¹²² and to the relationship between their interests and the goals and dimensions of change sought by the intermediary organizations. In the long run it is not abstract elements such as social stratification or political tension that hold back change. Rather, it is men in roles who act in response to certain values, norms and interests. The problem with the CADU project is that it overlooked such men as well as the implications of the land tenure system.

In conclusion, the 11 factors and four hypotheses thus far developed by A.I.D. had utility in the analysis of CADU as an intermediary. And the study found that the additional factors needed to explain CADU were:

- (1) A specific set of distinctions among the dimensions of change: growth, development, transformation and modernization.

- (2) A more specific concern with local governmental officials and local elites.
- (3) A more specific concern with environmental factors, especially the separation of land tenure into a separate variable.
- (4) The creation of a specific distinction between central leadership, commitment, mutuality of interest and congruence, and such factors in terms of local leadership.



Supplementary Map of the Chilalo Region

FOOTNOTES

1. The term "intermediary" is used to refer to organizations or mechanisms which serve as linkages between development resource providers and ultimate users. The basic function of an intermediary is to stimulate change at the local level through the delivery or stimulation of the flow of resources at the local level and the assurance of effective utilization of such resources by the target population. Toward this end the resource providers could be either domestic or foreign, and resources can include financing, commodities, technical assistance, leadership, doctrine, ideology, authority, legitimacy, information, political support, managerial ability, and so forth.
2. The term "local" is used in the concrete sense to refer to the lowest operating level of legitimate authority in any social system, rural or urban, and in the analytical sense to refer to the periphery as opposed to the center. See: Edward Shils, "Center and Periphery," in The Logic of Personal Knowledge: Essays Presented to Michael Polanyi (London: Routledge and Kegan Paul, 1961), pp. 117-130. And the term "local action" is seen in terms of the view that greater participation in development through access to resources, increased employment, and more equitable income distribution will be major policy concerns of the lesser developed country statesmen and foreign aid providers during the next decade. This concern will in turn produce increased demand for mechanisms (intermediaries) which can both deliver resources in usable form to local levels and mobilize local resources to achieve desired results. On the question of popular participation see: Douglas Ashford, "Political Linkage of A.I.D. Instruments" (unpublished paper prepared for Instruments Group, Agency for International Development, Washington, D.C., 1968).
3. E.G. Alderfer, "The Servicios of Latin America, 1942-1965" (unpublished paper on the Role of Local Institutions and Joint Organizations in Less Developed Countries as Program Intermediaries for Foreign Assistance, prepared for the Technical Assistance Bureau, Office of Development Administration, Agency for International Development, Washington, D.C., 1971).
4. E.G. Alderfer, "The Joint Commission on Rural Reconstruction (JCRR): Taiwan" (unpublished paper on the Role of Local Institutions and Joint Organizations in Less Developed Countries as Program Intermediaries for Foreign Assistance, prepared for the Technical Assistance Bureau, Office of Development Administration, Agency for International Development, Washington, D.C., 1971).
5. Jerome French, "The Philippine Rice and Corn Production Coordinating Council" (unpublished paper on the Role of Local Institutions and Joint Organizations in Less Developed Countries as Program Intermediaries for Foreign Assistance, prepared for the Technical Assistance Bureau, Office of Development Administration, Agency for International Development, Washington, D.C., 1971).
6. E.G. Alderfer, "The Pakistan Academy for Rural Development (PARD): Comilla, East Pakistan" (unpublished paper on the Role of Local Institutions and Joint Organizations in the Less Developed Countries as Program Intermediaries for Foreign Assistance, prepared for the Technical Assistance Bureau, Office of Development Administration, Agency for International Development, Washington, D.C., 1971).

7. E.G. Alderfer, "Instituto Brasileiro de Administraçao Municipal (IBAM): Brazil" (unpublished paper on the Role of Local Institutions and Joint Organizations in the Less Developed Countries as Program Intermediaries for Foreign Assistance, prepared for the Technical Assistance Bureau, Office of Development Administration, Agency for International Development, Washington, D.C., 1971).
8. Another aim was "to find an alternative between two opposite points of view about the cases which were based on similar premises. One which might be called the 'this is the way' view says that the intermediary mechanism succeeded because of its precise form and function and this form and function must be replicated or all is lost. The other, which might be called the 'unique situation' view, says that the situation relative to each case's success (or failure) is so different that it would be a mistake to try to draw upon its experience." "Summary of the A.I.D. Review of the Role of LDC Institutions and Joint Organizations as Program Intermediaries for Increasing Local Action Capability (unpublished minutes issued by the Technical Assistance Bureau and the A.I.D. Evaluation Staff, Office of Development Administration, Agency for International Development, Washington, D.C., 1971), p. 3.
9. These factors are expanded in greater detail in: Jerome T. French, "Findings and Implications" (unpublished paper prepared for the A.I.D. Review of the Role of LDC Institutions and Joint Organizations as Program Intermediaries for Increasing Local Action Capability, Technical Assistance Bureau, Office of Development Administration, Agency for International Development, Washington, D.C., 1971), pp. 5-12.
10. Ibid., pp. 14-17.
11. Ibid., pp. 17-23.
12. Conversion figures for this paper: 1 kilometer (km) = 0.62 miles; 1 hectare (ha) = 2.471 acres; 1 square kilometer = 0.386 square miles; 1 ton (metric) = 2,205 lb. (1,000 k g); 1 quintal = 100 kg; 1 kg = 2.2 pounds; \$E 1 = \$ US 2.30.
13. The percapita income is some \$E 150 per year. Agriculture produces a little more than half of the GDP, while manufacturing-some 10%. The rest is derived from sources dependent on agriculture and manufacturing. Exports are largely farm products with coffee accounting for more than half. On the economy and agriculture see: IRBD, The Economy of Ethiopia, 5 vols. (Washington, D.C.: International Bank for Reconstruction and Development, 1967). IRBD, Agricultural Sector Survey: Ethiopia, 3 vols. (Washington, D.C.: Agricultural Products Department, 1972). H. Ruffnagel, Agriculture in Ethiopia (Rome: Food and Agricultural Organization of the United Nations, 1961). Clarence J. Miller, et. al., Development of Agriculture and Agroindustry in Ethiopia (Menlo Park, California: Stanford Research Institute, 1967).

14. For descriptions of traditional and feudal problems in Ethiopia and the basic constraints on the process of change, see: Robert L. Hess, Ethiopia: The Modernization of Autocracy (Ithaca: Cornell University Press, 1970). Donald N. Levine, Wax and Gold: Tradition and Innovation in Ethiopian Culture (Chicago: University of Chicago Press, 1965). Dessalegn Rahmato, "Conditions of the Ethiopian Peasantry," Challenge, X, 2(1970), pp. 25-49. Doreen Warriner, A Report on Land Reform in Ethiopia (Addis Ababa: Economic Commission for Africa, 1970).
15. For an example of this in Ethiopia in general and Chilalo Awraja in particular see: "Emperor Haile Sellassie I's Speech from the Throne," Ethiopia Observer, XII, 1(1969), pp. 2-7.
16. See the programs and policies set forth in: Ethiopia, Third Five Year Development Plan: 1968-1973 (Addis Ababa: Berhanena Selam Printing Press, 1968).
17. A fundamental theoretical perspective underlying this paper is that there are at least four different dimensions of change and that such differentiation is essential to analyze the rural process. These dimensions of change are not unilinear in pattern, nor do they occur simultaneously. "Growth" is an increase in production or output; "development" is diversification, specialization, rationalization and institutionalization, and coordination of behavior; "transformation" is the appearance of new patterns of behavior which transcend and reshape existing values and institution terms of reference; and "modernization" is the increasing of societal and individual openness to flexibility, problem solving and innovation. Dov Weintraub, "Development Change--Towards a Generalized Conception of its Basic Dimensions and of the Relations Among Them," Development and Change, III, 1(1971-72), pp. 1-24. That meaningful rural change can come without all of these dimensions is extremely doubtful.
18. For a general background on the Chilalo area, see: Yelma Kabada, "Chilalo Awraja," Ethiopian Geographical Journal, V,1(1967), pp. 25-36. Arne Lexander, Changing Rural Society in Arussiland (Addis Ababa: Chilalo Agricultural Development Unit, Publication No. 7, 1968). Ethiopia, Central Statistical Office, Report on a Survey of Arussi Province (Addis Ababa: Central Statistical Office, 1966). Ethiopia, Ministry of Land Reform and Administration, Report on Land Tenure Survey of Arussi Province (Addis Ababa: Department of Land Tenure, 1967).
19. There are 40 hectares in one official gasha. One gasha (or 40 ha) equals 98.84 acres. Because of inaccurate measurement techniques, the size of any given gasha in the awraja is likely to vary considerably.
20. In terms of demographic data: density is approximately 40 persons per square kilometer; 45% of the population is under 15 years of age, and not more than 15% over 55; illiteracy is approximately 90%; and religious distribution is perhaps 60% Christian and 30% Muslim.

21. The population of the remaining towns of the awraja is very small, usually under 1,000, with the largest of these towns having the following population counts: Bekoji 1,899; Dera 1,848; Huruta 4,501; Kofele 3,359; and Sire 3,185. Ethiopia, Central Statistical Office, Survey of Major Towns in Ethiopia (Addis Ababa: Central Statistical Office, 1968), p. 1.
22. Central Statistical Office, Report on a Survey of Arussi Province, p. 21.
23. The basic cropping patterns, fertility, number of farmers and average cultivated area per farmer are set forth in: Bo Anselmsson, Crop Production and Animal Production: Comparative Study of the Possibilities for Different Farm Produce in the Chilalo Area in Ethiopia (Asella: Chilalo Agricultural Development Unit, Minor Research Task No. 6, 1972), pp. 1-14.
24. This data is derived from: CADU, Planning and Evaluation Section, General Agricultural Survey 1970 (Asella: Chilalo Agricultural Development Unit, Publication No. 71, 1971), pp. 61-63.
25. A list of these publications and their prices can be obtained by writing, CADU, Post Office Box 3376, Addis Ababa, Ethiopia.
26. In the 1950s development was thought to be based on capital accumulation for investment in industry. Rarely was capital allocated or invested in agriculture under the assumption that as a buffer sector food production would increase through the investment of farm savings at a rate sufficient to feed the growing industrial labor force. It became clear that industrial development alone could not generate sustained growth by the early 1960s and was confirmed in the Indian food crisis of 1966-67. The first effective attacks on this theory of development through industrialization came from: Bruce F. Johnson and John W. Mellor, "The Role of Agriculture in Economic Development," American Economic Review, LI (1961), pp. 571-581. See: Carl Eicher and Lawrence Will, eds., Agriculture in Economic Development (New York: McGraw-Hill, 1964). Gunnar Myrdal, "Paths of Development," New Left Review, XXVI (1961), pp. 65-74.
27. A team of Ford Foundation specialists studying possibilities and ways of increasing food production in India drafted a report in 1959 entitled, "India's Food Crisis and Steps to Meet It." The report argued that a powerful effort was needed to stimulate agrarian production and its 10-point program became the basis of India's Intensive Agricultural District Program, at the heart of which is the package program. The 10 points of this program are: (1) adequate and accessible farm supplies; (2) adequate farm credit; (3) intensive educational program; (4) single individual farm plans; (5) stronger village institutions; (6) assured prices for agricultural products; (7) reliable marketing facilities; (8) rural public products; (9) evaluation and analysis; and (10) a coordinated approach. CADU, Planning and Evaluation Section, Tentative CADU Programme 1970/75 (Addis Ababa: Chilalo Agricultural Development Unit, Publication No. 26, 1969), p. 8.

28. The consideration of the international experience is indicated in: Sweden, SIDA Project Preparation Team, Report No. I on the Establishment of Regional Development Project in Ethiopia (Addis Ababa: Swedish International Development Agency, 1966), I, pp. 111a to 127.
29. Primarily under the Basic Democracies Order 1959, a hierarchy of interlinked representative councils based on the assumption that effective democratic institutions must be understandable to the electorate designed to work them. See: Keith Callard and Richard S. Wheeler, "Pakistan," in Major Governments of Asia, ed. by George Mc T. Kahin (Ithaca: Cornell University Press, 1963), pp. 419-534. Edgar Owens, "The Local Development Program of East Pakistan," International Development Review, IX, 1(1967), pp. 27-30.
30. These differences are summed up in the following appraisal: "If we had a village with one big landlord and the remaining farmers, sharecroppers and tenants, afraid, frightened and suppressed, there would have been difficulty...well, there was no strong man; there were mostly little men. Even the moneylenders and the traders were not big operators; they also were small people. They were just clever and thrifty farmers who had saved a small amount of money and were working on a very small scale themselves.... There was an overwhelming majority of persons of equal status; the small farmers constituted 80% of the village population. And there was, in the case of the Muslim villages, a very homogeneous culture and a religion which itself created a sense of community and common action. The handicap of caste and tribal centrifugal tendencies was not there... villagers were very gregarious and democratic in their behavior--argumentative, compromising, peaceful and intellectually curious." H.K. Akhter, Community and Agricultural Development in Pakistan (East Lansing, Michigan: Michigan State University, Asian Studies Center, occasional papers, 1969), p. 29.
31. See: Rehman Sobhan, Basic Democracies Works Program and Rural Development in East Pakistan (Dacca: University of Dacca, Bureau of Economic Research, 1968).
32. In response to the request of the Ethiopian government for agricultural assistance in November of 1965, the Swedish International Development Agency proposed an investigation of the possibilities for a regional agricultural development project. Toward this end an agreement was signed in March of 1966 and a team of Swedish specialists arrived to undertake the investigation. This team studied the existing economy and their existing programs and projects in the agricultural sector, with the end goal of selecting a suitable area and planning a development program. In October 1966 this investigating group put forward a proposal for a package program in the Chilalo area. The Ethiopian government studied the proposal and recommended acceptance, but a long consideration period followed by a ministerial committee. Approval of this committee followed in February of 1967 and in March the Swedish group was ordered to prepare specific plans on work programs, staff requirements, job descriptions, building programs, equipment needs, operating budgets and other subjects. Finally an agreement was signed between the two countries on September 8, 1967 for a three-year initial contract running from September 1967 to July 1970. Benkt Nekby, CA DU: An Ethiopian Experiment in Developing Peasant Farming (Stockholm: Prisma Publishers, 1971), pp. 9-10, 42-44.

33. Sweden, Report No. I, p. 128.
34. In terms of specific considerations, CADU officials have always thought in terms of economic aspects: (1) the uneven distribution of land-- which is a constraint when CADU inputs are applied to the land at optimum rates--; and (2) the sharecropping systems--a constraint on inducement to innovate since tenants pay some of their yields to their landlords, and hence the increasing yields of the tenants raise the landlords' incomes. But the social constraints from the system, such as client-patron relationships and provincial elite opposition to anything more than economic growth, do not appear to have generated any concern. The thrust of this study indicates this to be a substantial error.
35. Since the establishment of the CADU project, the Swedish government has been at the center of the land reform controversy. The initial agreement required the Ethiopian government to implement new tenancy legislation in the area within two years of the commencement of the project. This legislation was never passed, and it became an issue between the two governments when the first agreement expired in July 1970. At that time a six-month extension was signed. When the government resubmitted the agricultural tenancy proclamation to Parliament in late 1970, it was taken as an act of good faith and a second agreement was signed extending the project from January 1971 to July 1975. As of the end of the 1971/72 Parliamentary term no action had been taken on the reform. Resistance to Swedish aid to Ethiopia in the Swedish Parliament has centered mainly around the position that a socialist country with limited development funds should spend its money in socialist countries committed to change. On land reform in Ethiopia see: Harrison C. Dunning, "Land Reform in Ethiopia: A Case Study in Non-Development," UCLA Law Review, XVIII, 2(1970), pp. 271-307.
36. Gunnar Myrdal, Land Reform in its Broader Economic and Social Setting (Rome: Food and Agricultural Organization of the United Nations, 1966).
37. This independence was subsequently altered when CADU was placed under the Extension and Project Implementation Department of the Ministry of Agriculture along with the WADU, Ada and other projects. Nevertheless, CADU has still de facto independence and reports directly to the Vice Minister of Agriculture. Under the plan of operation, CADU needs Ministry of Agriculture approval for important modifications of work programs and budgets, release of funds to start activities on the basis of approved feasibility studies, and studies and training abroad exceeding one year. Sweden, SIDA, Plan of Operation for the Chilalo Agricultural Development Unit (CADU) 1971-1974/75 (Addis Ababa: Swedish International Development Agency, 1971), p. 15.
38. The Swedish government through SIDA only participates in approving the detailed work plans and annual budgets, although it lends assistance when requested in such areas as staff recruitment and procurement. Sweden pays the full cost of the Swedish staff, and incidentals like investigations and scholarships, with the Ethiopian government paying

for land needed by the project, major roads and the salaries of Ethiopian personnel. Seventy-five percent of the investment and operating costs are paid by the Swedish government. Project funds are deposited biannually to a special fund under the control of the project director and released when the Ethiopian counterpart funds are deposited. The CADU budget for the first three-year contract period was \$E 15.7 million, of which \$E 1.4 million for roads was not used and will be spent in the second contract period. The costs of the five-year second contract period are estimated to run about \$E 27,500,000. The overall project estimated a 13-year period of expenditures amounting to \$E 50,739,000. Sweden, Plan of Operation, Appendix 6, pp. 7-8.

39. This committee is composed of the Ministers of Agriculture, Finance, Interior, Land Reform and Administration, National Community Development and Social Affairs, Public Works and Water Resources, the head of the Planning Commission Office and a representative of the Prime Minister's Office. This committee also prepares matters requiring governmental decision, approves management activities and discusses possible coordination problems. Sweden, Plan of Operation, p. 14.
40. Sweden, Report No. I, II, p. 189. In regard to these goals "...it must be underlined that the project not only aims at an increased production. This could probably be achieved most easily through large scale farming and big industrial ventures often under foreign management. The more important aspect of this project is, however, to develop the ability of local people to deal with their own problems and to completely lead the progress of their society." Ibid.
41. Nekby, CADU, p. 47.
42. CADU, Planning and Evaluation Section, CADU Annual Report 1970/71 (Addis Ababa: Chilalo Agricultural Development Unit, Publication No. 65, 1971), pp. 1-2. Note: The Ethiopian calendar year runs from Sept. 11 to Sept. 10 and there is a difference of $7\frac{3}{4}$ years between the Gregorian and Ethiopian calendars. For example, 1964 E.C. runs from Sept. 11, 1971 to Sept. 10, 1972. The budget year runs from July 8 to July 7. This is what is meant, for example, by such notations as 1970/71 or 1971/72 which appear throughout the paper.
43. This organizational chart is drawn from CADU, Annual Report 1970/71, p. iv.
44. CADU, Annual Report 1970/71, p. iii. The new format does not significantly affect the description which is used in this section, and that description is used because it is the one operative for most of the period of CADU operation.
45. The Ministry of Agriculture in consultation with SIDA appoints the Executive Director and Assistant Executive Directors. The Executive Director may seek assistance outside Ethiopia on planning and evaluation of some project activities. He is responsible for planning of work and budgeting, submitting progress reports, and an annual report, supervising and coordinating work, hiring, supervising and dismissing

- personnel in accordance with regulations, cooperating with central and local authorities, and acquiring working capital for the marketing and credit activities of the project. Sweden, Plan of Operation, p. 15. The initial project director was Bengt Nekby, a Swedish development expert. After the end of the first contract agreement he was replaced by an Ethiopian, Paulos Abraham, who had served as assistant executive director for two years. As of 1972 there were two assistant executive directors, one an Ethiopian, the other a Swede.
46. The description of the goals and the various organizational units which follows is taken from CADU, Annual Report 1970/71, pp. 8-55.
 47. This has occurred only once in regard to tenants of the Gobe dairy farm who were resettled in the Asassa area.
 48. It is difficult for an advanced agricultural nation to implement land reform, much less for a country as backward and as burdened with vested interests in the land as is Ethiopia. Even if implemented, problems arise concerning the ability to provide services immediately, which tend to reduce the marketable surplus since when peasants are relieved from high produce rents, they tend to consume more of what they produce. Since it is difficult for a backward nation simultaneously to introduce tenure reforms, services and the provision of capital inputs, it can in the short run be argued that land reform might not initially lead to increased economic growth. Land reform is not enough because only through a long range program of providing services and supplies can peasants under reformed tenure be brought into the market economy. On this subject see: Doreen Warriner, Land Reform in Principle and Practice (Oxford: Clarendon Press, 1969).
 49. In the Indian package programs, the small farmers tended to sell their inputs to the larger farmers so that the peasants used few inputs and the well-off farmers used too many. Thus, without reforms, the subsistence producers get little help and the large landowners receive the bulk of the benefits.
 50. CADU, Final Report on the Appraisal Team on the Chilalo Agricultural Development Unit (Asella: Chilalo Agricultural Development Unit, 1970), p. 4.
 51. "...we have to face the fact that the main blockage to such an advance (increased agrarian yield stimulated by land reform and implicitly local participation and consciousness) is political and institutional. In many underdeveloped countries power is in the hands of reactionaries who have, or believe they have, an interest in preventing those changes in land ownership and tenancy which would allow the peasantry to become conscious of and change their lot. Even in those countries with enlightened national leaders, landlords, money-lenders and other middlemen frequently use their power locally to subvert legislative reforms. And the peasants, sunk in apathy, ignorance and superstition which their poverty not only causes but maintains, do not protest because of their very apathy." Gunnar Myrdal, "Paths of Development," pp. 65-74.

52. Anselmsson, Crop Production, p. 18. There is a conflict on this point since the CADU Annual Report of 1970/71 states that 159,000 litres of milk were purchased from farmers and 132,000 were sold; 24,252 litres were used for butter production, and some 2,300 litres were lost because of mechanical defects and mishandling. Most milk sold to Shola Dairy in Addis Ababa and in Asella and Nazareth at prices varying from \$E 0.35 to 0.45 a litre. CADU, Annual Report 1970/71, p. 47.
53. The production target for 1971/72 was 200,000 litres through nine centers and for 1972/73 146,000 litres through nine centers. CADU, Planning and Evaluation Section, CADU Work Programme and Budget 1971/72 (Asella: Chilalo Agricultural Unit, Publication No. 67, p. 55. Hence little future growth is anticipated in this market stimulation area, but see cattle improvement comments later in this section.
54. CADU, Annual Report 1970/71, p. 49.
55. The drop in wheat prices was due to the importation of 4,000 metric tons of wheat in January 1972 by the Ethiopian Grain Corporation. Because of shipping problems the grain arrived all at once and storage facilities became overloaded with wheat. This had disastrous effects for CADU and the target farmers since CADU had been primarily pushing wheat. Since CADU activities particularly threatened the formerly lucrative trade of merchants and middlemen, they tried to use the fall in wheat prices to stimulate rumors that CADU was merely depressing the market to make a great profit. An interesting coalition among provincial elites developed in an effort to discredit CADU and its marketing and cooperative activities. This is the main reason why credit and input sales dropped substantially below 1972 growing season expectations. It should be noted that for a time during the decline of wheat prices CADU attempted to guarantee a price floor for peasants. This proved to be a very costly undertaking since CADU was not large enough to be successful. Hence that marketing aspect of the project suffered heavy financial losses for the period.
56. Again the Indian package program is a case in point. There low results were obtained in certain areas because the seed and fertilizers of the package were neither complementary nor suited to the soil. It was not until suitable seeds were imported and preliminary experimental work done that yields began to increase.
57. A number of publications on surveys, experiments and crop samples have been published by the CADU project. These publications cover the entire period of project experience. Of particular interest are the early research reports: SIDA, Trials and Demonstration Plots at Kulumsa in 1966 (Addis Ababa: Swedish International Development Agency, Publication No. 3, 1966). SIDA, Results of Trials and Observation Plots at Kulumsa 1966/67 (Addis Ababa: Swedish International Development Agency, Publication No. 7, 1966). SIDA, Trials and Demonstration Plots at Kulumsa and Swedish Mission Asella in 1967

- (Addis Ababa: Swedish International Development Agency, Publication No. 10, 1967). Numerous subsequent CADU publications have appeared which expand on this basic data. Over the CADU history new varieties of wheat, barley, teff and maize have been tested. Rape seeds and horse beans have also been tested with good results. The most promising forage crops tested so far are fodder beets. In regard to the principal input supplied, wheat, Roman Y yields 20 to 25% (34 to 39 qt/ha) higher than presently supplied varieties. Yaktana 54 and Kentana Frontana X and Mayo 48, yield 90 to 100% more than Kenya 1, one of the only improved varieties known in the awraja before the arrival of CADU. CADU, 1970 Project Description (Asella: Chilalo Agricultural Development Unit, 1970), p. 6.
58. The highest yields for most crops came from phosphates with Diammonium phosphate as the most economical fertilizer for most crops. Initial experiments showed that the application of 46 kg of P₂O₅ per hectare together with the selected seed variety, usually Yaktana 54, could nearly double the average yield and return of \$E 3.43 per dollar invested in inputs. CADU, 1970 Project Description, p. 6.
59. For examples of available literature on these subjects see: CADU, Cultivation Practices and Weed, Pest and Disease in Some Parts of the Chilalo Awraja (Addis Ababa: Chilalo Agricultural Development Unit, Publication No. 10, 1968). CADU, Introductory Agro-Botanical Investigations in Grazed Areas in the Chilalo Awraja (Addis Ababa: Chilalo Agricultural Development Unit, Publication No. 11, 1968). Also see the numerous trials, observations and crop sampling publications of CADU.
60. For example in 1969 the fertilizer demand was overestimated and in 1970 it was underestimated. In the former year it was necessary to sell surplus to large landowners which led to political criticism of the project and in the latter, in spite of firm rationing in favor of small farmers, the quantity was insufficient. Nekby, CADU, p. 62. For 1971/72 9,000 tons of fertilizer were imported, making the project the largest fertilizer importer in the country. CADU, Annual Report 1970/71, p. 3.
61. Initial multiplication of wheat seed took place at the Kulumsa Farm, where 425 hectares of cultivated land were under production. Private contract growers were also used. Increased need for seed resulted from the growing success and expansion of the project in the awraja, which led to another seed farm development at Asassa, where 600 hectares were used for seed multiplication. In 1969 Kulumsa produced 420 tons and contract growers 652 tons of improved seeds. Nekby, CADU, p. 78. In both 1969 and 1970 larger quantities of seed could have been sold than were produced. Ibid., p. 62. Since 1971/72 seed needs have declined and private contractors were not used.

62. In mid 1968 there were six extension agents in charge of 42 model farmers, and by January 1971 there were over 20 extension agents with over 200 model farmers. Together they reached a total of 50,000 farmers or 74% of all farmers in the project area at that time. See: CADU, Planning and Evaluation Section, Training of Model Farmers (Baseline Study) (Asella: Chilalo Agricultural Development Unit, Publication No. 31, 1969). Goran Bergman, Training of Model Farmers (After Measurement of Effect) (Asella: Chilalo Agricultural Development Unit, Publication No. 60, 1970). S. Bergholtz, Farm Management Studies of Model Farmers in the CADU Project Area (Asella: Chilalo Agricultural Development Unit, Minor Research Task No. 1, 1969). The ultimate goal is to have 40 extension agents with 15 to 20 model farmers per extension area, with each model farmer reaching 100 farm families. A continual training program is engaged in to produce extension and assistant extension agents. CADU, 1970 Project Description, p. 7. CADU, Annual Report 1970/71, p. 2.
63. On the whole, the model farmers were chosen by the landed gentry in the area, with tenants going along with landowners in the selection process. This participation characteristic is the result of the extensive patron-client system prevalent in the area.
64. These field days touch about 100 families, and demonstrations center on tools, implements, animal production, and forestry. But in the early days of the project, emphasis was on seed and fertilizer.
65. In one set of crop samples, fields farmed in traditional ways in the north produced 12.9 quintals/hectare and in the south 10.3 quintals/hectare, whereas fields using improved wheat seeds and fertilizers produced 20.9 quintals per hectare in the north and 17.8 quintals/hectare in the south. Nekby, CADU, p. 60.
66. CADU, Annual Report 1970/71, p. 2. The figures on trade centers and extensions varied within each year given. By late 1972 there were 33 trade centers and 34 extension areas, serving approximately 14,000 farmers.
67. This is not entirely correct, as credit was extended to larger farm holders in early years, which will be discussed later in this paper. As for purchases, CADU continued as of late 1972 to sell seed and fertilizer to landowners of any size.
68. The basic credit process: farmer indicates credit need; agent visits farm, decides if it is suitable, prepares farm plan and loan application with farmer and then recommends credit; Commerce and Industry Dept. considers loan and reaches decision with aid of Executive Director of project; if approved, loan agreement between farmer and project signed at trade center; a borrower's file and account are opened; downpayment collected at trade center; delivery order for inputs issued by Commerce and Industry section to trade center foreman who supplies them; delivery of crop and repayment of credit at trade center after harvest with constant supervision by agent at farm throughout interim period.

69. CADU gets its credit funds from the Development Bank of Ethiopia. Originally the interest was 8% but in 1970/72 it rose to 10%. CADU still maintained a lending rate of 12%, using the margin to cover cost of credit supervision and administration. Since farmers can not provide security in real estate, it is essential that they be in a better position from inputs after loan repayment is made. This is another reason for the low interest rate and it has resulted in high repayment figures. Note traditional interest rates can range as high as 100 to 400%. For insight into traditional interest rates and CADU impact, see Goran Bergman and Ilkan Lindqvist, Credit Situation in Chilalo Awraja (Asella: Chilalo Agricultural Development Unit, Minor Research Task No. 2, 1969).
70. It is difficult to compute repayment figures because early on, as will be discussed, certain larger landowners were excluded from the program and they tended to default. On the whole, it is reasonable to fix repayment rates at or above 90% after legal collection. For example: In 1969/70 of the \$E 502,875 credit extended, defaults took place for \$E 37,332 (7.4%). Forty-seven cases were taken to court and \$E 5,739 collected. Eleven farmers settled out of court for \$E 893 and the rest have been turned over to the legal branch of the project for collection, with the help of local government officials. As a result of the crop failure in Sagure area, repayment of 1970/71 credit for 38 borrowers (\$E 3,514) was postponed to the next harvest season. CADU, Annual Report 1970/71, p. 49. In 1971/72 the repayment ran 93-95%.
71. This resale condition was dropped by 1970/71, and for farmers above five hectares the downpayment was recently raised to 50%. It should be noted that as the area owned increases, the credit/value ratio (the ratio of the value of credit to total input value) increases. The credit/value ratio in 1969 was 0.6549 for tenants and 0.7898 for landlords, which means that tenants paid 35% of the value of inputs as down payments and 21% for landlords. When restrictions were put on the size of holdings in regard to credit access, these inequities in re the target population changed in 1970 to 0.6996 for tenants and 0.4265 for landlords. CADU, Planning and Evaluation Section, Summary of the Operations of the CADU Credit Program, 1968/69-1970/71 (Asella: Chilalo Agricultural Development Unit, 1971), p. 3.
72. The average loan runs between \$E 120 and 200. These have been hand processed by the CADU staff but as credit applications have grown above 10,000 per year, CADU has been forced to turn to computer processing. Since by 1975 CADU anticipates making 50,000 loans annually, computers will become essential. Furthermore, they have the side benefit of yielding valuable information on farming practices, cropping patterns and other related subjects.

73. One example of the broad extension effort is the Women's Extension Unit which in mid 1971 had 12 agents in Muruta, Iteya, Gonde, Asella, Asassa and Sagure. They were trained by the project and are engaged in women's club work, gardening, hygiene and literacy efforts, demonstrations of nutrition and meal preparation, latrine and garbage pit projects for individual farm households. CADU, Annual Report 1970/71, pp. 38-39.
74. CADU, Annual Report 1970/71, p. 46.
75. The imbalance becomes even more clear if all landowners holding 21 hectares or more are included. In this case, this group accounted for 56.4% of credit in 1968/69, 46.0% in 1969/70, and 7.7% in 1970/71. Henock Kifle, An Analysis of the CADU Credit Programme 1968/69 to 1970/71 (Asella: Chilalo Agricultural Development Unit, Publication No. 66, 1971), p. 26. This work should be consulted for an overall understanding of CADU's credit operations and their effects.
76. Ibid.
77. This figure was again lowered so that as of 1972/73 landowners cultivating more than 20 hectares and tenants cultivating more than 30 hectares were excluded from credit purchases.
78. This is reflected in Table 5. If "...the CADU Marketing Division and CADU Seed Division were to continue as self-sustaining units for five years only and then cease operations, the internal rate of return for 1971/72 would decrease from an estimated 25% to 13%; if the time limit was set at ten years, the internal rate of return would be 19%. While it should be emphasized that these rates can not be regarded as more than estimates, it would appear that whichever time limit for CADU's marketing activities is adopted in excess of five years, indications are that the project has been a 'sound' investment." CADU, Cost/Benefit, p. 3.
79. In 1967/68 wheat alone amounted to 82.1% of benefits, whereas in 1970/71 wheat amounted to only 10.0%. Fertilizer on wheat has increased from 7.1% of 1967/68 figures to 85.8% of 1970/71 figures. CADU, Annual Report 1970/71, p. 7.
80. Ibid., p. 4. For a more complex analysis of the gross benefit distribution among various tenants and landowners, see Henock Kifle, An Analysis of CADU Credit, p. 39.
81. There was extensive discussion among CADU staff in mid 1972 about extending the project over into Ticho Awraja and thus moving to fulfill that goal of the initial project objectives.
82. Note the overall goal was stated by the project to be "economic and social development." This combined term makes evaluation of activities regarding that goal difficult. The project as of late 1972 had not made any effort to develop indicators of this goal or to divide it into subgoals. CADU has relied on indicators for economic growth: per capita income, income distribution, propensity to invest and production structure. CADU, Tentative CADU Program 1970/75, p. 16.

83. CADU continues to use mechanization in its seed production areas and offers services to neighboring farms in order better to utilize machines and to investigate possibilities of joint use of machinery, but because of increased seed demands this practice is declining. If it could be used for weed control and drainage which would increase production rather than substitute labor, CADU might reconsider limited mechanization. See: Nekby, CADU, pp. 68-70.
84. See: CADU, Implement Research Section, Progress Report No. 1 (Asella: Chilalo Agricultural Development Unit, Publication No. 32, 1969). CADU, Implement Research Section, Progress Report No. II (Asella: Chilalo Agricultural Development Unit, Publication No. 53, 1970).
85. SIDA, Reconnoitering Survey of Water Resources in Chilalo Awraja (Addis Ababa: Swedish International Development Agency, Publication No. 4, 1967). CADU, Water Development Section, A Master Plan for Water Resources and Supplies Within CADU's First Project Area (Asella: Chilalo Agricultural Development Unit, Publication No. 53, 1970).
86. The main undertaking to date has been the installation of a dam and water supply system for Asella which was given special financial support by the Swedish government, with the dam constructed on CADU project grounds in connection with the construction of that project.
87. Gunnar Poulsen, Some Reflections on Water Erosion in Chilalo Awraja (Addis Ababa: Chilalo Agricultural Development Unit, Publication No. 2, 1967). Lili Lundgren and B. Lundgren, The Munessa Forest, A Plant Ecological Study (Addis Ababa: Chilalo Agricultural Development Unit, Minor Research Task No. 2, 1969). Kebede Tato, A Preliminary Survey of Soil Erosion in the Chilalo Awraja (Asella: Chilalo Agricultural Development Unit, Special Study, No. 1, 1970).
88. SIDA, Creation of a Forestry Administration in Arussi Province (Addis Ababa: Swedish International Development Agency, Publication No. 5, 1967). CADU, Grow Better Bahr-Zaaf (Addis Ababa: Chilalo Agricultural Development Unit, Publication No. 4, 1968). CADU, Planning and Evaluation Section, "Feasibility Study on the Establishment of a Saw Mill in Asella and Connected Workshop for Wood Processing" (typewritten draft, November, 1971).
89. For example, on the positive side it succeeded in gaining protected status for the Munessa forest, CADU, 1970 Project Description, p. 3. On the negative side, in 1970/71 it produced 250,000 seedlings for distribution to farmers which proved to be almost a complete failure because of transportation and planting problems. CADU, Annual Report 1970/71, pp. 32-33.
90. CADU, Health Education (Baseline Study) (Asella: Chilalo Agricultural Development Unit, Publication No. 29, 1969). Gunnar Arhammar, Sanitary Survey in Golja (Ketar Genet) (Asella: Chilalo Agricultural Development Unit, Publication No. 37, 1969). Kap Study of Mothers in Golja (Ketar Genet) (Asella: Chilalo Agricultural Development Unit,

Publication No. 38, 1969). Food Survey of Pre-School Children in Golja (Ketar Genet) (Asella: Chilalo Agricultural Development Unit, Publication No. 39, 1969). Health Survey of Pre-School Children in Golja (Ketar Genet) (Asella: Chilalo Agricultural Development Unit, Publication No. 40, 1969). Report on a Combined Food and Health Survey in Yeloma Farming District (Asella: Chilalo Agricultural Development Unit, Publication No. 41, 1969). CADU, Survey of Health Facilities of Arussi 1969-1970 (Asella: Chilalo Agricultural Development Unit, Publication No. 57, 1970). CADU, Sanitation Survey of Bekoji (Asella: Chilalo Agricultural Development Unit, Publication No. 61, 1970). CADU, Family Guidance in the CADU Programme 1970 (Asella: Chilalo Agricultural Development Unit, Publication No. 62, 1971). Gunnar Arhammar and Roland Eksmyr, Health Survey in Sagure Village and Yeloma Farming District (Asella: Chilalo Agricultural Development Unit, Publication No. 68, 1971). Gunnar Arhammar, The Assessment of Status of Health in an Ethiopian Rural Community (Experience of Two Years' Public Health Work in Chilalo Awraja, Arussi) (Asella: Chilalo Agricultural Development Unit, Publication No. 69, 1971).

91. CADU, Cost/Benefit, p. 5.
92. As of 1970/71, this arm of CADU was involved in the Sagure Clinic and its three satellite stations in Bekoji, Golja and Dighelu, a school clinic at Sagure, the Asella family guidance clinic, vaccinations and other intermixed activities with the government health service. Its only clear function was the CADU staff clinic. The confusion of CADU-government activities should be ended by the withdrawal of CADU from this area and the placing of its former program under the Ministry of Public Health, with a former Swedish employee as Provincial Medical Officer. CADU, Annual Report 1970/71, pp. 10-12.
93. Lars Leander, Feasibility Study on Local Roads and Market Places in Chilalo Awraja (Asella: Chilalo Agricultural Development Unit, Publication No. 33, 1969).
94. The standard for these roads is to be all weather possibilities for 4-wheel drive vehicles. Sections are Iteya to Muruta, Meraro to Kore, Asella to Kersa and Bekoji to Meraro.
95. \$E 1,500,000 was placed at CADU's disposal by IEG for road building but has not been utilized and awaits further studies and the decision on whether Asella will be incorporated into nation-wide highway loans from IBRD and SIDA. Nekby, CADU, p. 103.
96. The lactation of local cows is about 200 litres a year whereas cross-bred cattle can produce up to 1500 litres a year. Nekby, CADU, p. 72.
97. As of mid 1971, there were 1,797 animals including 1,310 local cows, 107 cross-bred heifers in breeding age, and 189 cross-bred cattle. CADU, Annual Report 1970/71, p. 30.
98. During 1970/71, 1,906 inseminations were performed. 2.09 inseminations were made per pregnant cow, giving a total of 623 pregnant cows. Ibid.

99. CADU, Planning and Evaluation Section, Feasibility Study on a Farm for Breeding of Grade Cattle at Gobe, Arussi Province (Addis Ababa: Chilalo Agricultural Development Unit, Publication No. 18, 1968). CADU, Research and Livestock Section, Animal Husbandry Activities 1968-1970 (Asella: Chilalo Agricultural Development Unit, Publication No. 56, 1970). Oscar Evaldsson, An Inventory of Feeding Systems and Feed-Stuff, Chilalo Awraja, Ethiopia (Asella: Chilalo Agricultural Development Unit, Minor Research Task No. 5, 1971).
100. It is unclear whether cross breeding can go beyond 50% inbreeding and whether farmers who buy and raise such cattle can protect them from disease, especially during the 36 months it takes for cross-bred cattle to reach maturity. Nekby, CADU, p. 72.
101. A farmer's multi purpose cooperative society was established (1970/71) in the Bilalo area. Similar cooperative societies at Kechemba and Asella have submitted their registration applications for cooperatives but are still in the pre-cooperative stage. In mid 1970/71 there were 137 members in Bilalo, 141 in Kechemba, 165 in Asella and 102 in Sagure. In 1970/71 Bilalo bought 1,173 quintals of grain and gained a profit of \$E 3,060 by storing and selling when the price was high. It has dealt with 154 credit applications (31 tenants and 123 landowners) and five cash applications (all landowners). It has distributed 421 quintals of seed and 1,816 quintals of fertilizer to members and non members receiving a discount of \$E 1 per quintal of seed and fertilizer from CADU. Total profits from storage of grain and discounts amount to \$E 5,297. Activities and finances are done in accordance with rules of Ministry of National Community Development and Social Affairs. CADU, Annual Report 1970/71, p. 40. An example of problems in cooperative formation is in Gonde, where in order to block CADU activities about 12 to 20 big commercial farmers are reported to be considering forming their own cooperative society and do not want to accept membership of tenants and small landowners for voting reasons. If they register a society it would prevent the smaller farmers from forming their society since by law two cooperative societies can not be formed in the same area. This problem has delayed the formation of a coop in Gonde. Where this problem does not exist, it is often difficult to convince members that CADU has no profit making motives in its dealings with the cooperatives. Finally, it is hard to get trustees to meetings because of distance and hindrances such as the rainy season. CADU, Annual Report 1970/71, p. 40.
102. See: William O. Jones, "Economic Man in Africa," Food Research Institute Studies, I (1960), pp. 107-134.
103. See the comments by Milosavljevic, Garlund, Tekalign and Dumont in: CADU, First Report Appraisal Team, passim. Note that in terms of social development and public participation, only 3% of the 1972/73 gross costs appear to have gone toward this end. CADU, 1972/73 Budget, passim. Another indicator is that the high level staff of CADU contains nine economists (mid 1972) and no sociologist, political scientist, anthropologist, social worker, etc.

104. In the field interviews, local government officials criticized CADU for not providing them with Land Rovers when CADU employees had access to them, for not giving them interest free credit or for precluding them from credit. Many had bought fertilizer, seed, and other items from trade centers, were running large mechanized farms, and actively evicting tenants.
105. Personal Communication.
106. In a letter from CADU director Paulos Abraham to H.E. Ato Tesfa Bushen, Vice Minister of Agriculture, dated July 7, 1971, it was requested that in order to increase the level of participation of the target population, model farmer area development committees, extension area development committees, district center development committees and an awraja development committee be established. These were necessary to establish "...institutionalized forms of communications between the project and the target population both for feed forward and feedback, to increase the level of identification of the target population with the aims of CADU, to explore avenues of areas of social development and transfer of responsibility to target population."
107. This information from: Internal Memorandum, CADU, Planning and Evaluation Section, "Framework for Organization of Farmers' Committees," 1972, Asella, Archives, Planning and Evaluation Section Files.
108. These predicted 411 to 591 total man hours per year and a maximum cost of SE 16,206 per year. Ibid.
109. As of the end of 1972 CADU had approximately 250 Model Farmer Area Development Committees organized but had no real idea what to do with them. None of the intermediary levels had been organized.
110. CADU is trying to promote interest in social questions to help prevent officials and landowners from utilizing their positions for private purposes. To this end it is trying to inform people about both the existing laws and proposed legislation relating to land tenure reform. Nekby, CADU, p. 85.
111. Local government officials and provincial elites can be expected to try to block any extensive politicization.
112. The effect of CADU on the process of rural change in the Chilalo area can not be adequately covered in this paper. However, a short summary of the basic effects will be presented despite the dangers of oversimplification.

113. See footnote 17.
114. There has been some change in orientation toward agricultural production and marketing activities, but these are neither extensive nor pervasive enough to qualify this statement.
115. This figure is adapted from James F. Guyot, "Political Perspective for Agricultural Economics: A Commentary," Canadian Journal of African Studies, III, 1(1969), p. 176.
116. It is impossible to consider these problems in depth in this paper. On the history of the land reform movement and the basic issues in the land tenure system see: H. Dunning, "Land Reform in Ethiopia," pp. 271-307.
117. Nekby, CADU, p. 120.
118. Resistance to Swedish aid to Ethiopia has centered mainly around the position that a socialist country with limited development aid funds should spend its money in socialist countries committed to change. The response has been that peasants are aided by Swedish support despite the lack of commitment and that it is a form of imperialism for Sweden to make demands on Ethiopia once it has entered into an ongoing project, to which opponents to Ethiopian aid argue that there are hundreds of millions of peasants in the world and aid should aim at the highest possible cost-benefit ratios and not be given where returns are low and jeopardized by the reactionary position of a modernizing feudal autocracy.
119. "Implementation of legislation on agricultural tenancy relationships shall start throughout the project area not later than one year after the promulgation of such legislation. Proposals on nation-wide legislation on cadastral survey, land registration and measures aiming at optimal utilization of land shall be submitted to Parliament not later than two years after the signature of the agreement. The CADU area shall have priority in the implementation of such legislation." Sweden, JIDA, Plan of Operation for the Chilalo Agricultural Development Unit (CADU) 1971-1974/75 (Addis Ababa: Swedish International Development Agency, 1971), p. 10.
120. French, "Findings and Implications," pp. 10-11.
121. See footnote 17.
122. One of the crucial variables affecting the successful implementation of the intermediary's policies and programs directed at change is acceptance, support and participation of those local elites who are influential in limiting, controlling or facilitating the process of change. These elites are both rural and urban, and consist in Ethiopia of landowners, mechanized farmers, grain merchants, businessmen, wereda and awraja officials, municipality officers, field agents of central government ministries, elders, judges, advocates, police officers, leaders of voluntary associations, priests, sheiks, school teachers and many others.