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Ministry of Agriculture

E P I D

EPID Phase II - PROPOSALS FOR
THE EXPANSION OF EPID DURING
1975/76 - 79/80 AND FOR SUP-
PORT BY SIDA

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TABLE OF CONTENTS

	<u>Page No.</u>
List of Tables	iii
List of Abbreviations	v
Preamble	1
PART 1. Internal Evaluation of EPID Phase I	2
1.1. Agricultural Innovations Disseminated to Farmers	2
1.2. Technique Adopted by EPID for Dissemination of Innovations	16
1.3. Incentives to Farmers for Adoption of Innovations	20
1.4. EPID Organizational Structure	28
1.4.1. EPID and the Comprehensive Projects	28
1.4.2. EPID Headquarters	33
1.4.3. The Minimum Package Programme	38
1.5. The Geographical Expansion of EPID	40
1.6. Participation by Foreign Donor Agencies and IEG	44
1.6.1. Participation by Foreign Donor Agencies	44
1.6.2. Participation by IEG	55
1.7. Overall Impact on Major Project Goals	59
1.7.1. Improvement in the Standard of Living of the Peasant Population	59
1.7.2. Employment Effects	64
1.7.3. Participation by the Poorest Farmers Including Tenants	65
1.7.4. Improvement of Methods for Bringing about Agricultural Development in Ethiopia	75
1.7.5. Creation of Possibilities for a Continuous Expansion of the Effort	80
PART 2. Objectives and Policies for the Future	88
2.1. The Minimum Package Concept	88

TABLE OF CONTENTS (CONTD.)

	<u>Page No.</u>
2.2. The Rate of Physical Expansion	99
2.3. Organizational Implications for the Future	102
2.4. EPID and the Comprehensive Projects	106
2.5. EPID Headquarters and Field Activities	107
2.6. Resource Requirements for the Future	111
PART 3. A Proposal for Support by SIDA to EPID Phase II	115
3.1. A Few Basic Assumptions	115
3.2. Heads of Department	117
3.3. Planning, Evaluation & Liaison Division	119
3.4. Common Services Division	120
3.5. Extension Division	122
3.6. Co-operative Marketing Division	127
3.6.1. Background	127
3.6.2. Objectives and Basic Assumptions	130
3.6.3. Detailed Features of the Division	132
3.6.4. Organization and Staffing	140
3.6.5. Time Phasing	154
3.6.6. Costs of the Co-operative Marketing Division	160
3.6.7. Financing of the Co-operative Marketing Division	164
3.6.8. Benefit/Cost Analysis	166
3.7. Summary of Proposal for Support by SIDA to EPID Phase II	171

LIST OF TABLES

- Table 1: Fertilizer Sales to Farmers by EPID/MPP
- " 2: EPID Work Programme Fulfilment During the Past Three Years.
- " 3: Distribution of Improved Seed by EPID (quintals).
- " 4: Crop Yield Data from EPID Areas in 1973 (Averages for all Surveyed Areas, quintals/ha)
- " 5: Benefit/cost Analysis for Fertilizers Based on 1973/74 Data.
- " 6: Benefit/cost Ratios Under Different Price Assumptions for DAP and Wheat.
- " 6A: Owner-Cultivators
- " 6B: Siso-arash Tenants
- " 7: Summary of Results for Four Crops from 1973/74
- " 8: Financing of EPID 1970/71 - 1972/73 (Eth.\$)
- " 9: Technical Assistance Provided to EPID (Man-months of expert services).
- " 10: Assistance to be Provided by SIDA to EPID 1971/72 - 1974/75 According to EPID's Plan of Operation.
- " 11: Tenant Participation in EPID's Credit Programme in the 11 "Original" MPPAs (Percentages).
- " 12: 1973 Input Sales: Percentages Distributions of Credit Buyers by Land Tenure Status Per MPP Area.
- " 13: 1973 Credit Sales: Size of Holding and Land Use of Buying Farmers per MPP area. (Hectares)
- " 14: 1973 Credit Sales: Percentage Distributions per MPP Area of Buying Farmers by Size of Area Cultivated.
- " 15: Tax collections in Chilalo Awraja, 1967/68 - 1970/71.

LIST OF TABLES (Contd.)

- Table 16: EPID Phase II Planned Expansion of the Field Areas.
- " 17: EPID Phase II Basic Field Personnel Requirements.
- " 18: EPID Phase II Total Costs.
- " 19: Staffing Plan for the Co-operative Marketing Division.
- " 20: Total Costs of the Co-operative Marketing Division.
- " 21: Man-years of Technical Assistance to the Co-operative Marketing Division.
- " 22: Proposed Financing of the Co-operative Marketing Division.
- " 23: Benefits to Farmers Generated by one Secondary Co-operative Union.
- " 24: Man-Years of Technical Assistance Support by SIDA to EPID Phase II.
- " 25: Summary of Support by SIDA to EPID Phase II.

LIST OF ABBREVIATIONS

- ADDP - Ada District Development Project, Debre Zeit
- AIDB - Agricultural & Industrial Development Bank, A.A.
- AIMS - Agricultural Inputs & Marketing Services, S.C.,
Addis Ababa
- AMC - Agricultural Marketing Corporation, Addis Ababa
(to be established)
- CADU - Chilalo Agricultural Development Unit, Asella
- DA - Demonstration area
- DANIDA - Danish International Development Agency,
Copenhagen
- DAP - Diammoniumphosphate
- DDA - Dairy Development Agency, Addis Ababa
- EGB - Ethiopian Grain Board, Addis Ababa
- EGC - Ethiopian Grain Corporation, Addis Ababa
- EPID - Extension & Project Implementation Department,
Addis Ababa
- FAO - Food & Agriculture Organization of the United
Nations, Rome
- FAO/FFHC - Freedom from Hunger Campaign of FAO
- HADP - Humera Agricultural Development Project, A.A.
- IAR - Institute of Agricultural Research, Addis Ababa
- IBRD/IDA - International Development Association, Washington
D.C.
- IHA - Imperial Highway Authority, Addis Ababa
- IEG - Imperial Ethiopian Government
- LWF - Lutheran World Federation, Geneva
- MF - Model Farmer
- MNCD&SA - Ministry of National Community Development &
Social Affairs, Addis Ababa
- MP - Member of Parliament
- MPP - Minimum Package Programme
- MPPA - Minimum Package Programme Area
- OA - Observation Area

- ODA - Overseas Development Administration, London
- PAO - Provincial Agricultural Officer
- PE&LD - Planning, Evaluation & Liaison Division
- SIDA - Swedish International Development Authority, Stockholm
- TSP - Triplesuperphosphate
- UNDP - United Nations Development Programme, New York
- USAID - United States' Agency for International Development, Washington D.C.
- WADU - Wollamo Agricultural Development Unit, Sodo

PREAMBLE

This volume contains proposals for the expansion of EPID during the period 1975/76 - 1979/80, referred to as EPID Phase II. It is anticipated that also during its Phase II EPID will be supported by the same donors as at present, i.e. IBRD/IDA, SIDA, USAID, DANIDA/FAO, ODA. However, these proposals are prepared primarily with regard to the future support to be given by SIDA. The current agreement between the Ethiopian and the Swedish governments for support to small farmer development programmes, i.e. to CADU and EPID, expires at the end of the 1974/75 fiscal year. The intention is that a new agreement may be negotiated on the basis of the present proposals made by EPID and of those made by CADU, and that this new agreement will dovetail with the former and thus come in force with the 1975/76 fiscal year.

To date SIDA has provided both technical assistance and budgetary support to EPID's Minimum Package Programme. Since the Minimum Package Programme from the 1973/74 fiscal year is being financed mainly by IBRD/IDA, and since a request for a second loan from this source will be prepared in due course, it is not envisaged to request further budgetary support from SIDA to this Programme. It is rather intended that during EPID Phase II the emphasis of SIDA's support to EPID be placed on the Co-operative Marketing Division planned to be established in 1975/76. In support of the Minimum Package Programme only technical assistance will, therefore, be requested from SIDA.

Part 1 of the volume contains EPID's own internal evaluation of its first few years of operation, Part 2 presents those policy guidelines the project would wish to follow in its expansion, and the proposals for assistance from SIDA to EPID Phase II are given in Part 3.

PART 1: INTERNAL EVALUATION OF EPID PHASE I1.1 Agricultural Innovations Disseminated to Farmers

Ethiopian peasants' pride in their knowledge of traditional agriculture acquired from their fore-fathers and closely linked with their culture is well known. Often given conducive climatic factors in the form of adequate rain etc. few of the rural people suspect that their farm practices may be improved. The peasants' reluctance and even active resistance toward influences directed at having them change their traditional practices are known to be strong. As a result, EPID's approach in the dissemination of improved farm practices to the rural people has been guided by the assumption that the Departments' freshly graduated young agents would first need to establish a basis for their acceptability to the peasants. EPID agents have been able to do this by first introducing the peasants to the uses of high impact improved agricultural inputs such as fertilizers and better yielding varieties of seeds. Fertilizer trials conducted by FAO/FFHC had previously established significant possibilities for increasing crop yields over large parts of the country. In addition, the various research stations in the country and CADU had been able to test and approve several high yielding varieties of cereals. ⁽¹⁾ EPID took advantage of these precedents in the applicability of the inputs and made them available to the peasants.

Fertilizers. The response of the peasants to high impact inputs has been encouraging. Even though the Department fell somewhat short of its own rough initial targets, the rapid acceptance of the uses of fertilizers among

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EPID Publication No. 6, P. 6.

the peasants is readily apparent from the following table.

Table 1: Fertilizer Sales to Farmers by EPID/MPP

Year	D A P (qt)	Urea (qt)	Total Fertilizer, (qt)	No. of Sales		
				Credit	Cash	Total
1971	8,099.3	1,361.0	9,460.3	3,612	1,079	4,691
1972	17,173.5	3,000.5	20,174.0	9,215	3,491	12,706
1973	30,471.5	4,695.5	35,167.0	18,713	6,911	25,424

Sale of DAP doubled in 1972 and again increased by 77 per cent in 1973. Sale of Urea more than doubled in 1972 and went up by 56.5 per cent in 1973. Total number of participants in the extension programme has also been encouraging. The number of credit sales increased by 155 per cent in 1972 and again by 103 per cent in 1973. Participation in the cash programme has increased equally rapidly.

The 1974 input sales season is not yet concluded when this is being written and it is therefore not possible to include final data from 1974 in the table above. However, all indications from the field areas are that the farmers' demand for fertilizers is totally unprecedented. It is estimated that both the number of sales and the quantity of fertilizer sold by EPID/MPP in 1973 will be doubled in 1974, i.e. over 70,000 quintals of fertilizers will be sold in 1974 to more than 50,000 farmers. It should then be noted that the fertilizer prices to the farmers were considerably higher in 1974 than in 1973: the price per quintal of DAP was in 1973 Eth.\$38 and in 1974 Eth.\$44, and Urea costed Eth.\$40 in 1974 as against Eth.\$32 in 1973. It is believed that the unusually high grain prices prevailing in 1974 account for part of this great increase in demand for fertilizers.

Nevertheless, it has not been possible to surpass or even reach the targets as projected in the work programmes in any one of these past three years. In spite of the increase in

volume of sales in 1973, the project fell considerably short of reaching its targets, as shown by table 2 below.

Table 2: EPID Work Programme Fulfilment During the Past Three Years

(Percentages of established targets)

Type	1971	1972	1973
DAP	62	82	62
Urea	71	100	48

It is believed that a principal factor standing in the way of EPID's meeting its targets in 1973 was the drought situation that prevailed over large parts of the country in that year. Many farmers had to forego planned purchases of fertilizers due to the late start or shortage of the rains. The discontinuation of input sales by EPID in the Shashamane MPPA in 1973 is also likely to have removed part of the validity of the initial projections, as this area alone in 1972 accounted for 16.8% of all EPID's fertilizer sales.

EPID has experienced some considerable problems in recent years to obtain timely supplies of fertilizers. In 1973 fertilizers were delivered very late to the field areas due to delays in obtaining the IEG decision to subsidize the cost of the fertilizers to the farmers. A subsequent survey indicated that one-fourth of all EPID supervisors believed that they in that year could have sold significantly more fertilizers, if the deliveries had been more timely.

The same problem has occurred in 1974. A variety of delays caused mainly by slow performance by AIMS and by inefficient transportation to the field areas have considerably delayed deliveries. While it is premature to judge whether overall sales have suffered, as they did in the previous year, it would appear evident that there is a need for EPID to improve its procedures for procurement of agricultural inputs.

In the FAO/FFHC fertilizer trials it had been roughly established that a combination of DAP and Urea in a 2:1 ratio enabled satisfactory yield increases over most areas in the country. To date, EPID fertilizer application recommendations have been based primarily on these initial trials. However, a few regions in the country showed little yield response to application of Urea. As a result, the amount of Urea that has been projected to be required by all areas in the EPID programme has only been about 15% of total fertilizer requirements. Sales of Urea turned out to be close to this projected percentage point, averaging 14.2% of all fertilizers sold over the three years that the project has been operational.

Yield responses to application of fertilizers other than DAP and Urea, for instance TSP, have been under trial and investigation in practically all trial fields within the EPID extension areas. Yield responses to varying doses of fertilizer treatments on various crops under different soil types have also been under investigation in the trial fields.

Soil analysis of samples collected from some regions (for instance, deep red soils found in large parts of Wollega and Kaffa and in some parts of Sidamo and Shoa Provinces) indicate that p^H levels below the desired 5.5 are very common in these regions. These soils with low p^H levels are very acidic and could become toxic to plants affecting their growth and yields. Analysis of preliminary results from lime trials have not yet given conclusive evidence on improvement of yields on all sites. Lime treatment trials are planned to be continued in these regions for sometime in order to observe whether this would improve yields in the long run. So far lime treatment trials have been set up in 30 extension areas ⁽¹⁾.

In spite of the ongoing trials with application of different kinds of fertilizers, DAP and Urea remain the only types that

(1) Most of this section is extracted from an inter office memo written by Ato Gedion & Mr. Gowans, EPID Extension Division.

will be placed at the disposal of farmers during the 1974 planting season. By next year, EPID will have had three continuous years of fertilizer trials in some areas. Results from these trials should provide reliable information for improving fertilizer application recommendations.

The fertilizer recommendations available so far have been very general, and it has been possible only to make a few modifications in recommended treatments. In the future it is hoped that a system of wider soil sampling from farmers' fields and analysis of these samples in the soils laboratory of the Ministry of Agriculture will enable a better precision in the recommendations. This becomes particularly important as the fertilizer prices increase rapidly as it would enable more economic treatments.

The results from the fertilizer trials have been collected, analysed and published in the EPID report series. Divisions within the Department did not seem to make much effort to improve extension activities on the basis of experience gained from the field trials. While fertilizer trials along with analysis of soil samples may produce sufficient information to enable more meaningful specification of required doses of fertilizers in the different areas, little has been done to date in this regard. However, three years of experience are generally required from an area before reliable recommendations may be made.

Crop protection. EPID's work in the field of crop protection did not get under way until the 1973/74 budget year, when an expatriate adviser and a well qualified counterpart to him were appointed. Up to the present time small quantities of chemicals for insect and rodent control have been available in some marketing centres for sale on cash only, but there has been no plan for the work in this field.

However, severe insect attacks both in 1973 and 1974 pointed at an urgent need for effective action by EPID. All farmers' efforts to raise yields through the use of improved inputs are, of course, obviated if the crops later are devastated by insects.

Agricultural chemicals must therefore be viewed as complementary to fertilizers and improved seed and be made available to farmers in adequate quantities on normal sale conditions. Only in 1974 has EPID for the first time been able to order any more significant quantities of herbicides and pesticides for sale to farmers, but these quantities will be nowhere near enough to meet large outbreaks.

In the past attacks have usually been detected by the field staff at a time when the insects are fully grown and therefore difficult to combat. That is also the time when farmers usually come running to EPID field offices to ask for help. It is necessary to institute an effective early warning system and issue guidelines to the field staff how they can look for signs of an impending insect attack. It is equally necessary for EPID to carry adequate emergency stocks of chemicals distributed over the country on a regional basis, lest precious time be lost in the procurement and distribution of the supplies.

Additional research is needed to improve control methods. At present DDT is the major insecticide in use in Ethiopia but substitutes must be developed urgently due to its bad environmental side effects. In addition, cheap application equipment must be developed that is suitable for use by small farmers. By mid-1974 EPID was preparing plans along these lines. It is estimated that Ethiopia annually loses some 20% of its crop to pests, and in the present situation of grain deficit the country can ill afford losses of such a magnitude. Effective action in this field should thus be a priority task for EPID.

Grain storage. The grain storage unit within the Extension Division has been operational for two years. Within this time it has selected 6 agents specifically trained to assist farmers in developing and building improved on-farm grain storages. One agent each assisted in the promotion of improved grain storages in the Ambo, Kersa/Alemaya and the Jimma areas. The other recruits until recently moved around the country from a base in EPID Headquarters. In the three

areas where agents have been assigned encouraging starts have been made in the promotion of improved on-farm grain stores. In particular, in the Jimma area over 200 improved gotteras and cribs have been built so far.

In June 1974 a training course was held for 22 agents selected to work specifically with grain storage, who will be posted to the various field areas.

The activities in grain storage consist of reminding EPID farmers of the losses they are incurring as a result of crude and ineffective on-farm grain storage. The agents tell farmers that post-harvest grain losses could be substantially reduced if the stores were built following guidelines provided by EPID. To facilitate ready acceptance of recommendations, farmers are helped to improve on the traditionally and locally used on-farm storages. In localities where gotteras and cribs are traditionally used to store grains, farmers are told to raise the bases one meter above the ground and to fit the supporting columns with rat baffles. In areas where pit stores are common, farmers are shown how to make these rodent and water proof. As much as possible locally available and cheap materials are used for construction purposes. As part of the post-harvest grain protection, farmers are advised on measures to combat insects and moths by applying insecticidal dust. They are advised about length of effectiveness of the different insecticides (mostly phostoxin and Lindane) and about treatment procedures. Farmers buy the insecticidal dust in small quantities from the nearest EPID office by paying cash for them, and 3,120 kilos of Lindane dust were supplied to farmers in 1973. At the recommended rate of 50 grams per quintal, this should be enough to treat 62,400 quintals of grains. This year, 4,000 kilos of Lindane dust and 20,000 phosphate producing tablets have been supplied to EPID field offices. These figures would seem to indicate that post-harvest grain protection by use of insecticides is gaining rapid acceptance among farmers.

Agricultural implements. Improved farm implements, the uses of which is promoted by EPID, consist mainly of the mould board plows, harrows, knap sack sprayers, ox carts, and manually fed grain threshing machines. Except for the threshing machine, most extension centres have samples of each of the implements. The operations of these items are demonstrated and the advantages over traditional implements explained during field days when farmers are gathered, sometimes in large numbers. Occasionally the mould board plow and the harrow are loaned out to model farmers so that they may use them on their own farms and come to appreciate the advantages.

However, aside from these demonstrations EPID cannot yet be said to have achieved much in promoting the use of improved farm implements by farmers. A major reason has been that the project has had no staff with relevant training to put in charge of this activity. Another reason has been that implements suitable for use by peasant farmers have not been available in numbers large enough for sale. Most implements research carried out in Ethiopia has been done by CADU, but several of the prototypes developed by CADU are either unsuitable for use outside Chilalo or unavailable for sale to farmers. The most commonly used implement developed by CADU, the plough, has proven to be inadequate and EPID is currently working on a different prototype. In addition, many of EPID's extension agents are not fully aware of the potential benefits to be derived from the improved implements and have therefore not sufficiently promoted them.

In 1974 EPID was beginning to be better staffed in this field, and plans were made for sale of implements to farmers in 1975. However, it is evident that EPID is behind target in this field.

Seed. Distribution of improved, high yielding varieties of seed was to have been one of the important, high impact inputs introduced to farmers. An average yield increment of three quintals per hectare was projected for cereals in the work programme as a result of application of improved seed.

Considering the possibilities for this kind of yield increment the assumed rate of use of improved seed has been modest, and it has not even been possible to attain the modest goals anticipated in the work programme.

Table 3: Distribution of Improved Seed by EPID (quintals)

	<u>Plan</u>	<u>Actual</u>	<u>Plan Achievement, %</u>
1971	220	222	101.0
1972	420	200	47.6
1973	2110	862	40.9

As the above table indicates, target fulfilment has been below 50% except in the first year. This could perhaps be explained in three ways. Firstly, only those who purchase fertilizers usually purchase seed as well. As a result, most farmers tend to account the increase in yield to be due to fertilizer application rather than to use of improved seed. Secondly, the selling price of improved seed has been considerably higher than the prevailing market prices for the same crops. Moreover, the down payment required on credit sale of seed is 50% of the price instead of the 25% that is demanded on credit sales of fertilizers. Thirdly, locally produced improved seed would have had a better adaptability.

It is generally believed that the absence of a national seed improvement and multiplication programme accounts for the relatively high price of seed material in the country at present. Whatever improved seed is available is grown in connection with the activities of the various research stations. The scale of operation of these research stations does not seem to enable them to offer the select seed at reasonable prices in the market. In addition, transport costs from the stations to EPID field areas are high.

In 1972 EPID engaged a consultant to carry out a feasibility study in seed multiplication. The purpose of this study was to provide a solution to the problems indicated in the previous paragraph in order to enable EPID to launch a programme of wide distribution of improved seed to farmers.

The consultant recommended that EPID should recruit its own contract growers in the various field areas. The growers would receive basic seed from EPID with the understanding that they would sell back all their produce to EPID at prices not exceeding a few dollars above market prices for the crops in the region. The seed would be properly cleaned and stored in the area of production to be later resold as select seed to farmers. At first this would be done on a pilot basis and later enlarged to cover all field areas if the attempt proves successful.

However, little action has yet been taken to implement the recommendations made in the feasibility study, a main reason being that no decision has been taken to procure seed cleaning machines. Since no arrangements had yet been made in the 1974 planting season for the contracting of seed, locally multiplied seed produced in accordance with the recommendations of the feasibility study will not be available to farmers until 1976. Also in this field EPID is much behind target.

So far almost exclusively seed for cereals (wheat, teff, maize) has been offered for sale to farmers, and the thrust of the entire extension programme, including fertilizer application recommendations, has been heavily focused on cereals. EPID has made very little active attempt at achieving crop diversification, and little attention has been paid to pulses, oil crops, horticultural crops and others. However, there is a variety of other crops with excellent market prospects (haricot beans, castor, pyrethum, vegetables to name a few) that also need to be propagated as part of the extension programme. While EPID's failure to date to promote other crops than cereals can largely be explained by a shortage of qualified staff, the project's performance in this regard must be improved in future years.

Soil & water management. Improved techniques for seedbed preparation are closely related to the promotion of improved implements. Instead of three or four plowings using the traditional plow, farmers are told they could plow once using

the mould board plow and follow up with three harrowings to obtain better and faster results. CADU sources indicate that the time required for seedbed preparation using a combination of mould board plow and harrow is some 50% less than with the repeated plowings using the traditional plow⁽¹⁾.

In some regions farmers are used to burning the top soils. Later they spread the burnt soil over the whole field. This practice improves the yield the first year, but in subsequent years the land has to be left fallow for very long. EPID agents are trying to discourage the practice by telling farmers that the productivity of the soil could easily be enhanced by addition of artificial fertilizers. They tell farmers that burning the top soil in the process of seed bed preparation is laborious and also destructive of crucial soil nutrients that can only be restored by natural processes after a long time.

Water logging has for long limited the planting time and the kind of crops that could be grown in certain fields. In very flat plains it is often not simple to dig channels to drain the water away. As a result, it is not uncommon to see vast areas unwittingly left for pasture as they could not be cultivated due to water logging. Recognizing the problem, EPID soil specialists are experimenting with various types of drainage.

Water logging has been tackled by simply scratching very shallow ditches across the field to enable surface run-offs. In saturated soils with a relatively high infiltration rate sub-surface drains have been tried to lower the water table. Experiments are also underway to determine growing conditions of different crops under water logged conditions. It is, of course, appreciated that developing adequate and efficient drainage may be difficult in the fragmented land holding patterns that exist in several parts of the country. In some areas farmers have solved the problem by draining water from

(1) Michael Bayene: On Evaluation of Innovation Dissemination and Process in CADU Project Area. CADU, Asella, 1974. Unpublished draft.

fields planted with crops that do not tolerate water logging to adjacent fields that do have some degree of tolerance, e.g. draining an upper field planted to wheat into lower fields planted to teff⁽¹⁾.

Construction of camber beds, even though not completely new to some farmers (for instance, in the Jihur Plains and in the Dineba areas) is being looked into with the purpose of expanding the practice as a useful measure of controlling water logging. Faster and cheaper methods of constructing the beds such as using mould board plow are being investigated.

Erosion control through afforestation of steep hill sides has been in progress in Tigre and Eritrea with the support of Food for Work Programmes. EPID extension agents have actively participated in this effort helping in the distribution of grains to participants and directing the construction of terraces.

In particularly the drought affected areas work on collection of surface water through dams and ponds has been initiated.

In a few extension areas small scale irrigation schemes are being tested. Through the provision to EPID of resources for Food for Work Programmes the project's ability to undertake this type of work has been substantially enhanced.

Incorporating soil and water management methods into the extension programme is a slow process, and it is difficult to convince farmers of the need to devote the often very considerable effort required to achieve results.

⁽¹⁾ This observation was taken from Mr. K. Gowans' inter-office memo of December 1973.

To date the recommendations actually adopted by farmers are very few. However, a promising start has been made in this field and, particularly in the drought affected provinces, a variety of field trials are now under way,

Home economics. Plans to initiate a home economics programme as an integral part of EPID's extension work were drawn up in the 1972/73 budget year, when a Home Economics Section was established. At the end of 1973, 18 home economics assistant agents were graduated from a six months course at the Bako training centre and sent to EPID field areas. A baseline survey was carried out by the Planning, Evaluation & Liaison Division in May - July 1973 in three MPPAs, and the results from this survey were at hand in early 1974.

In February 1974 a consultant arrived to help design the future development of EPID's work in home economics, and with the completion of her plan ⁽¹⁾ EPID has a long term work programme in this field. The intention is to upgrade the field workers in home economics and gradually provide them with the same formal training as that of the agricultural extension workers. To achieve a better impact the home economics work will be focused on a relatively limited number of field areas.

Horticulture. Trials with horticultural crops are also expected to assist the home economics programme. A limited number of sites will be selected for trials with fruit trees. Horticultural seed is already being made available to farmers in some areas, while in others growing practices of vegetables such as round cabbage, lettuce and carrots are being introduced to farmers for the first time.

Animal husbandry. With the exception of the feasibility study done by consultants in 1972 on the integration of animal husbandry into EPID's extension programme, no work in the

(1) EPID Publication No. 18.

field of animal husbandry was carried out by EPID prior to the arrival of the expatriate specialist in January 1974. The Animal Husbandry Section has drawn up a long term work programme based on this study and on a baseline survey done in the field areas.

Co-operative promotion. Promotion of primary co-operatives in all extension centres is an essential task of EPID. Eventually, co-operatives are envisaged to take over responsibilities related to marketing of agricultural inputs and outputs. In the beginning it was thought possible to organize societies and get them registered with the MNCD&SA in the third year after the opening of a centre. This would mean that all the extension centres to the MPPAs established in 1971 should have functional registered co-operatives by now, but this is far from the case.

Organizing farmers into co-operative societies has turned out to be more difficult than anticipated. In many instances farmers appear uninterested. They lack a basic comprehension of the potential benefits that could accrue from membership in a well managed society. The farmers' distrust of co-operatives are often aggravated by active distractors who believe their group interests would be better protected by opposing small scale farmers from organizing in societies.

EPID Headquarters was considerably strengthened during the 1973/74 budget year. Until then the co-operative promotion work had been conducted within the Marketing & Credit Group, and the results had been limited.

As EPID's resources in the field of co-operative promotion are strengthened the problems of co-ordination with the MNCD&SA become more pronounced. There is some ambiguity as to which organization should perform what functions with regard to the process of developing, registering and managing co-operatives. Field personnel frequently find that their duties are overlapping. The staff training function is being conducted by MNCD&SA

although most trainees go on to jobs with EPID. There have been lengthy discussions between MNCD&SA and EPID on these and related subjects but to date no functional agreement of co-ordination of work has been reached. It is necessary that such an agreement is developed as soon as possible and a productive working relationship between EPID and MNCD&SA specified.

The conduct of part of the present activities of EPID by a network of co-operative societies is part of the overall strategy underlying MPP and it is one of the most fundamental assumptions for EPID Phase II. Yet the prospects of success in this field, i.e. the extent to which farmers will respond to co-operative formation, remains one of the largely unproven aspects of MPP. EPID has to devote the highest priority to this work in the future.

1.2 Technique Adopted by EPID for Dissemination of Innovations

The principal agents of change in the EPID Programme should be the young men who graduate with a diploma in agriculture from the training institutes at Ambo and Jimma. These young men have had twelve years of schooling plus two years of intensive training in agriculture at these institutes.

An agent's area of coverage extends approximately 10 to 15 kms along an all-weather road and 3 to 5 kms (but sometimes up to 10 kms) on either side of the road. It is the responsibility of the agent to traverse his area, usually riding mules, and keep in touch with the farmers therein. In his attempts to disseminate improved agricultural practices, the agent often tries to enlist the support of awraja and woreda officials as well as any other recognized opinion leaders in his extension area.

In areas where there are large numbers of participating farmers in the programme, the agent may be helped in his work by an assistant agent. Assistant agents are often recruited from among high school students who have completed at least 10th

grade. They are usually trained at CADU's agricultural school where they are given a course involving ten months of theoretical classroom training and 12 months of practical training in a field area.

To date EPID has experienced a considerable shortage of fully qualified extension agents, i.e. graduates from the Jimma or Ambo training institutes. The vacancies are in the field often filled by assistant agents, sometimes with good results.

Five extension areas usually compose a full-scale Minimum Package Programme Area (MPPA). Each MPPA is under the current supervision of a supervisor who normally is a graduate of the College of Agriculture at Alemaya. He may be assisted by an assistant supervisor who usually is a promoted extension agent with several years of practical experience. The supervisor is provided with a vehicle and with a petty cash and directs all day-to-day activities within his area.

Whenever they get the opportunity and whenever a group of farmers is willing to listen to them the agents explain about ways of improving traditional rural agriculture. Another important means of conveying new innovations have been the trial fields. They are usually one hectare in area and are ideally located in a place that is frequently visited by farmers. They may be located along the main way to the market, the church or the court house where people will be able to look at the field on their way to their other businesses. The trial field is divided into a number of sections where trials with fertilizer applications, seed varieties, improved implements, insecticides, pesticides, cultural practices, and crop rotation are carried out.

Each plot is properly marked to describe the particular trial it is supposed to indicate. Before the time of harvesting, when all the trials are clearly evident, a field day is held to which all farmers, woreda officials and community opinion leaders are invited and the outcome of each of the trials explained by the agent and the supervisor. On this occasion

the farmers are invited to give their opinion about EPID activities in general and the trials that they have been invited to witness in particular. The event may be an important occasion for two way communication between EPID field staff and the farmers.

In addition to the trial fields, fertilizer and variety demonstrations are layed out on plots on farmers' land. Sometimes the contrast between the demonstration and the rest of the field is so marked that non-participating farmers would be hard put to deny the superiority of the recommendations of the agents.

For purposes of screening applicants for purchases of inputs on credit, the agents rely on the recommendations and advice of model farmers. A model farmer is selected on the following basis: villagers are asked to nominate five farmers following a number of criteria about the nominees' "integrity, diligence, willingness to co-operate" and with land holdings not exceeding those prescribed for eligible participants (20 ha cultivated land). Once the agent receives the names of the five appointees, he reviews the eligibility of each of them and then selects one to be model farmer in that particular village. Once a model farmer is selected he is expected to spear-head application of new innovations, to urge his community of farmers to participate in the extension programme, to summon them to meetings, to remind them to repay for their credit purchases of inputs etc. Ideally a model farmer is expected to be a close ally of the agent. A model farmer is expected to cover about 100 ordinary farmers, and a fully developed extension area would thus have 20 model farmers.

How well is the overall arrangement for the dissemination of improved agricultural practices suited to achieve its goals? Are the approaches adopted for educating the farmers convincingly demonstrating the superiority of the recommended innovations and are these being readily adopted by the farmers?

Demonstrations in the trial fields and on farmers' plots are believed to have generally established the yield increasing

potential of fertilizers and improved seeds. Significantly enough, neither of these two applications demand considerable departure from the traditional methods of preparing the land using traditional tools and planting during traditionally proscribed times. The two applications happen to be the simplest to adopt once farmers are convinced that the recompense is worth the initial outlay for the purchase of the inputs. This is believed to be the reason for EPID's comparatively commendable performance in the sale of high-impact inputs, whereas little has been achieved in the dissemination of other innovations.

For instance, there does not appear to be any significant demand for improved implements yet. It is true that the implements for reasons already set forth have not been very actively promoted by EPID. On the other hand, improved implements have been available at most marketing centres for demonstration purposes. The benefits that may be derived from them are so considerable that farmers would have been expected to express a little more interest in acquiring them.

It is, of course, rather early to properly evaluate the rate of acceptance of the extension recommendations. Farmers may take some time to internalize the reported benefits of some of the recommendations before adopting them. Except for fertilizers, seeds and some row planting of maize in parts of Keffa province, there is very little evidence to show that farmers are accepting the "package of innovations" that EPID has been established to promote. It appears that the bulk of the extension programme for the dissemination of innovations lies ahead. This programme will need to break farmers' traditional inflexibility in cropping patterns, and it will need to induce them to experiment with new crop mixes in order to help them maximize earnings. EPID will also need to make a list of the outdated farm practices that are current in the field areas and prepare specific instructions to bring about their alteration. The present practice of sending out young and inexperienced extension agents with the general instruction that they are to assist small farmers modernize their farm practices in addition to selling them some inputs, may not suffice.

The agents will need to carry a more comprehensive manual of instructions about what to convey to farmers at planting, pre-harvest, harvest, and post-harvest periods. This will require a more imaginative and flexible approach on the part of EPID.

In the programme for the dissemination of agricultural innovations, too much expectation has been put on the active participation of the model farmers. To be sure, the model farmers co-operate in volunteering plots for demonstrations on farmers' fields, they assist in ascertaining the residency of applicants for input credit, some of them even encourage their neighbours to pay their dues on and summon them to meetings. But when the agents' calls upon them become too frequent, many model farmers begin to resent them. They say that their role as model farmers is interfering with their farm work, and that they have no obligation to make that kind of personal sacrifice in a job that does not have any personal rewards.

It appears that many agents have misused the services of model farmers who were initially envisaged to spearhead adoption of innovations and thereby encourage dissemination of new farm practices. Instead agents started calling on the model farmers to do the unpleasant chores, such as summoning neighbours to meetings and urging them to repay debts, for them. As a result, few of the farmers believe that the model farmers have gained more in acquiring improved farm practices. As things are at present, the expectation that the model farmers are to be the carriers of agricultural innovations to large numbers of farmers appears to have been overstated. Several agents will need to re-examine the kinds of services the model farmers are at present rendering before they can reasonably expect them to act as carriers of innovations. The Extension Division should issue more specific guidelines to the agents on how to make the best use of the model farmers.

1.3 Incentives to Farmers for Adoption of Innovations

It is evident that the incentive of overriding importance to the farmer for adopting improved agricultural inputs in the prospect of a higher cash income. The farmer will expect that

the economic benefits he will derive from use of these inputs will greatly exceed the incremental cost he incurs for them. It is, therefore, the benefit/cost ratio of the inputs made available by EPID to farmers that should, in the first instance, be explored in order to determine what the farmers' interest in these inputs is likely to be.

The input of dominating importance is so far, of course, fertilizer. Since as much as 95% of the value of the inputs sold by EPID in 1973 consists of fertilizers, a benefit/cost analysis with regard to this particular input would be illuminating of the benefits generated by EPID as a whole. This analysis is here carried out using current data, i.e. data from the 1973/74 year.

EPID's crop sampling survey provides estimates of yields in the 1973 (1966 E.C.) harvest with regard to fertilized and unfertilized crops. Such estimates were obtained from 26 MPPA and 14 DA, i.e. virtually all of EPID's field areas in 1973. Most of them must be considered accurate as sufficiently large sample sizes were obtained to enable valid estimates to be computed⁽¹⁾. In particular, the estimates for teff, wheat and barley show a close correlation with other independently calculated yield data. The estimates for maize and sorghum are based on smaller numbers of field areas and may, therefore, be less representative.

In table 4 below average yield figures for these five crops computed over all surveyed field areas are shown as an illustration of the effect of fertilizers on crop yields. It should be noted that these are data taken from farmers fields, i.e. under "field conditions".

(1) Each point estimate in the survey was based on a sample size of about 30.

Table 4: Crop Yield Data from EPID Field Areas in 1973.
(Averages for all Surveyed Areas, quintals/ha)

<u>Crop</u>	<u>Mean yield, fertilized</u>	<u>Mean yield unfertilized</u>	<u>Difference</u>
Teff	10.9	8.0	2.9
Wheat	14.9	10.6	4.3
Barley	13.3	10.1	3.2
Sorghum	23.0	19.0	4.0
Maize	64.8	43.8	21.0

The yield response to fertilizers is for maize considerably higher than projected e.g. in the IBRD/IDA Appraisal Report, the response for wheat is roughly equal to those projections, and that for teff, barley and sorghum is lower. The absolute yields for sorghum and maize appear to be much higher than the expected national average, and it is possible that there is a bias in the survey estimates for these crops due to the surveyors having taken larger plots than intended⁽¹⁾. However, such a bias would not affect the difference between the estimates of fertilized and unfertilized yields.

The estimated farm-gate prices in Shoa Province in February 1974 were used in the analysis. These prices were assumed to be 75% of the Addis Ababa wholesale price for that month.

The cost concept used in the analysis was the total price a farmer purchasing on credit has to pay, i.e. including 12% interest on three-fourths of the value for nine months. Urea was assumed to be applied only to maize and sorghum, since it is normally not applied to the highland crops teff, wheat and barley. Yield dependent costs covering increased costs to the farmer for weeding, harvesting and threshing were put at \$3 per hectare.

The full analysis using these assumptions is shown in table 5. The table shows that in 1973/74 fertilizer use on teff, wheat and maize in EPID field areas was, on an average,

(1) Experiences from CADU's crop sampling surveys have indicated that there may be a bias for these tall stem crops as surveyors have an inclination to add stems also from outside the one metre square plot, from which the crop sample is taken.

eminently profitable to the owner/cultivator. Fertilizer use on sorghum was also profitable although with a small margin, while barley showed a negative return.

For the siso arash tenant, i.e. a tenant who has to pay one-third of his crop to his landlord and who has to pay the entire cost of the inputs himself, application of fertilizers on maize and wheat was clearly profitable. Teff left him only a small margin, while sorghum and barley were unprofitable to fertilize.

No accurate data are available on which crops were fertilized by the farmers. However, the crop sampling survey indicates that teff, wheat and barley were the most important crops, in that order, in the field areas. It would thus seem that in the great majority of cases fertilizer use was clearly profitable to the farmers.

However, a note of caution should be made here.

Table 5: Benefit/cost Analysis for Fertilizers Based on 1973/74 Data

	<u>Teff</u>	<u>Wheat</u>	<u>Barley</u>	<u>Maize</u>	<u>Sorghum</u>
Incremental output in response to fertilizers, cf table 4 (Qt)	2.9	4.3	3.2	21.0	4.0
Farm gate price in February 1974 (\$/Qt)	25.58	21.45	12.38	10.52	18.15
Gross value of incremental production (\$)	74.18	92.24	39.62	220.92	72.60
Incremental cost of production					
DAP (\$)	40.57	40.57	40.57	40.57	40.57
Urea (\$)	-	-	-	17.08	17.08
Other yield dependent costs (\$)	3.00	3.00	3.00	3.00	3.00
Total costs	43.57	43.57	43.57	60.65	60.65
Benefit/cost ratio (owner/cultivator)	1.70	2.12	0.91	3.64	1.20
Benefit/cost ratio (<u>siso arash</u> tenant)	1.12	1.43	0.60	2.45	0.81

Grain prices were high in early 1974 i.e. favourable to the farmers. Had price levels been close to those of e.g. 1972 it is certain that it would only have been profitable for a siso arash tenant to fertilize maize, and that all the other crops would have shown benefit/cost ratio of less than 1.0. As an illustration of the relationship between the fertilizer price and the grain price the following two tables are provided showing benefit/cost ratios for owner/cultivators and for siso arash tenants. The tables relate to wheat and assume an incremental yield of four quintals in response to one quintal of DAP; no yield dependent costs are included.

Table 6: Benefit/cost ratios under Different Price Assumptions for DAP and Wheat

A. Owner-cultivators

	<u>Price of DAP per qt.</u>						
	<u>38</u>	<u>40</u>	<u>42</u>	<u>44</u>	<u>46</u>	<u>48</u>	
<u>12</u>	1.18	1.12	1.07	1.02	0.98	0.94	
<u>14</u>	1.38	1.31	1.25	1.19	1.14	1.09	
<u>Farm gate price of wheat, \$/qt</u>	<u>16</u>	<u>1.58</u>	<u>1.50</u>	<u>1.43</u>	<u>1.36</u>	<u>1.30</u>	<u>1.25</u>
	<u>18</u>	<u>1.77</u>	<u>1.69</u>	<u>1.61</u>	<u>1.53</u>	<u>1.47</u>	<u>1.41</u>
	<u>20</u>	<u>1.97</u>	<u>1.87</u>	<u>1.78</u>	<u>1.70</u>	<u>1.63</u>	<u>1.56</u>
	<u>22</u>	<u>2.17</u>	<u>2.06</u>	<u>1.96</u>	<u>1.87</u>	<u>1.79</u>	<u>1.72</u>

B. Siso-arash Tenants

	<u>Price of DAP per qt</u>						
	<u>38</u>	<u>40</u>	<u>42</u>	<u>44</u>	<u>46</u>	<u>48</u>	
<u>12</u>	0.79	0.75	0.72	0.68	0.65	0.63	
<u>14</u>	0.92	0.88	0.84	0.80	0.76	0.73	
<u>Farm gate price of wheat, \$/qt</u>	<u>16</u>	<u>1.06</u>	<u>1.00</u>	<u>0.96</u>	<u>0.91</u>	<u>0.87</u>	<u>0.84</u>
	<u>18</u>	<u>1.19</u>	<u>1.13</u>	<u>1.08</u>	<u>1.03</u>	<u>0.98</u>	<u>0.94</u>
	<u>20</u>	<u>1.32</u>	<u>1.26</u>	<u>1.20</u>	<u>1.14</u>	<u>1.09</u>	<u>1.05</u>
	<u>22</u>	<u>1.45</u>	<u>1.38</u>	<u>1.31</u>	<u>1.26</u>	<u>1.20</u>	<u>1.15</u>

Recently the fertilizer price has increased very considerably due to world wide shortages of this commodity, prompting a need for subsidies by IEG of fertilizers sold to small farmers. Such a subsidy was for the first time instituted in 1973 at \$4/Qt and it has in 1974 been raised to \$6.20/Qt. Present prospects are that much greater subsidy will be required in 1975.

The need for fertilizer subsidies is particularly manifest until IEG has taken such measures in the field of grain marketing that a relatively stable price level for grains may be maintained. With the present sharp inter- and intra-year price fluctuations for all major crops in Ethiopia, the farmer can never rest entirely assured that an investment in improved agricultural inputs will be profitable. The DAP price rose from \$38/Qt to \$44/Qt in 1974. Table 6 shows that any further DAP price increase must be accompanied by an exceptionally high grain price as have prevailed so far in 1974, unless use of DAP is to be unprofitable to the tenants and of dubious profitability to owner/cultivators. It is thus essential that IEG maintains the subsidy until world market prices start to decline again. In the absence of a subsidy, the major incentive for the farmers to use EPID's dominating input would likely disappear. The need for continued subsidies on fertilizer is particularly strong in the light of EPID's social equity objective: since the tenants have the lowest margins, as illustrated by table 6 B, they will be the first to suffer from a fertilizer price rise and/or a grain price fall.

The same data are not available to illustrate the benefits of use of improved seed, since the crop sampling survey did not endeavour to measure effects from use of improved seed. However, the 1973/74 results from the variety trials on the extension agents' trial fields are available. Table 7 below shows the mean yield improvements from use of improved seed varieties relative to local seed varieties. The table also shows the percentages of the trials where improved seed varieties were superior to the local varieties.

Table 7: Summary of results for four crops from 1973/74 variety trials on agents' fields

<u>Crops</u>	<u>Mean yield improvement (Qt/ha)</u>	<u>Per cent of all trials with better yield than local varieties</u>
Teff	3.5	64.4
Wheat	7.9	81.7
Barley	7.4	48.9
Maize	23.0	92.1

The table shows that in all cases where mean yields of improved varieties exceeded the local varieties, the improvement of the crop yield was significant. However, in the case of barley over half of all the trials showed the local varieties to have better yield than the improved varieties, for teff this was the case in 35.6% or about one-third of all the trials. The most promising results were obtained for wheat and maize where the majority of the trials showed the improved varieties to be superior.

In 1974 only teff, wheat and maize seed was made available to farmers; as sufficient quantities of improved seed for other crops could not be obtained (haricot bean seed was also sold in 1973). The cost to the farmer per quintal of teff seed was \$42.50, per quintal of wheat seed \$44, and per quintal of maize seed \$42.00. The recommended seeding rates per hectare for the three crops are 0.25 quintal for maize, 0.30 quintal for teff and 1.25 - 1.50 quintals for wheat. The cost to the farmer per hectare for improved seed, including interest, will then in 1974 be \$10.97 for maize, \$13.32 for teff and \$68.97 for wheat.

The data on yield improvements reproduced in table 7 above are obtained from controlled trial conditions and will therefore be higher than what farmers could obtain on their own fields. However, it is evident that even if farmers could only obtain, say, half of the yield improvement obtained on the trial fields, use of improved seed would still at the crop prices prevailing in 1974 (cf table 5) be very

profitable to the farmer. Under these assumptions the benefit/cost ratios would be as high as 11.0 for maize, 3.4 for teff and 1.2 for wheat.

EPID's crop sampling survey did measure crops in Wollo province where in 1973 virtually no fertilizers were sold but large quantities of improved seed distributed under the drought rehabilitation programme. Mean yields on farmers' fields for the province as a whole were 45.0 quintals per hectare for teff, 36.6 quintals for sorghum and 19.7 quintals for barley. These yield figures are undoubtedly very high to come from farmers' fields (they were taken along the north-south road in Wollo where the 1973 main crop was considered good). There can thus be little doubt that farmers should have ample incentive to adopt improved seed as an innovation.

Evidently it may not be possible to quantify the benefits of all the gains of a good extension programme. Farmers may be told to plow the earth deeper or shallower than they normally do to improve yields, to employ some rough sort of selecting and cleaning local seed before broadcasting, to avoid intercropping of certain varieties of crops, and all these may add up to improved crop yields. Yet the incremental cost associated with these marginal improvements would be negligible in as much as the only input required is the farmer's own labor whose marginal cost in any case is close to zero. But the adoption of most of these finer aspects of an extension recommendation is what distinguishes a good farmer from an average one. Yield increments as a result of adoption of some of these minor recommendations cannot be taken into account in a benefit/cost analysis. Nevertheless, it should be remembered that there could be more to a good agricultural extension programme than would be presumed from a benefit/cost calculation based on adoption of the major innovations.

1.4 EPID Organizational Structure

1.4.1 EPID and the Comprehensive Projects

Upon the establishment of the EPID it was envisaged that the organizational relationship of EPID Headquarters to the comprehensive projects namely, CADU, WADU, ADDP, HADP, and similar new projects, was to be effected through the Liaison Division. While the comprehensive projects had the autonomy to formulate and execute their own plans of operation and administer funds allocated for this purpose, the Liaison Division was to supervise the work of these projects on behalf of EPID. It was also envisaged, that the heads of the comprehensive projects and of EPID/MPP would constitute a Liaison Committee which would serve as an organ for efficient co-ordination between the comprehensive projects and MPP and to facilitate a mutual exchange of experience. The Liaison Division was to serve as secretariat for the Liaison Committee.

Organizationally the Liaison Division existed since the inception of EPID, but actual operations started only in April 1972 when an expatriate liaison economist was assigned to the Division. All through 1971/72 and 1972/73 the staff of the Division consisted only of this expatriate economist. As a result of the shortage of staff the activities of the Division were then limited to the following:

- a) During 1971/72 contacts were maintained with comprehensive projects on a general level, particularly pertaining to administrative, accounting and personnel matters. The Division also served as a secretariat for an ad hoc committee that was created to look into formulating a uniform staff policy for all EPID projects, and it had analyzed the submitted work programmes from the comprehensive projects.
- b) During the 1972/73 fiscal year the Division maintained the same general level contacts with the comprehensive projects and scrutinized their work programmes and budgets. But,

more importantly, it was involved more actively in the formulation of uniform staff rules—a draft of which was circulated to all EPID projects. Another significant step taken during this fiscal year was the establishment of the Liaison Committee composed of the heads of the projects of EPID (the comprehensive projects and the MPP), although this committee met only once during the year. The Division also participated in inter-ministerial discussions on the preparation of new projects initiated by the Planning and Programming Department of the Ministry of Agriculture.

By and large, the relationship of the comprehensive projects with EPID was not effectively institutionalised during this period and contacts were mainly maintained on a personal level with the head of EPID. He relied primarily on his own initiative and judgement and only occasionally sought ad hoc advice from the Liaison Economist and EPID Headquarters staff on matters relating to the comprehensive projects. Supervision and control of the comprehensive projects by EPID Headquarters was, therefore, inadequate and clear policy guidelines were in general lacking. This situation was revealed by the ad hoc evaluations carried out for WADU and ADDP.

The lack of clarity in policy guidelines is also revealed by the ambiguous role of the Ministerial Committee for EPID (comprehensive and minimum package programmes). There is no common understanding among the on-going EPID projects and programmes regarding the duties, responsibilities and composition of this Committee.

In the organization charts of ADDP and WADU the Committee is shown as a policy formulating, policy issuing and implementing body to whom the Minister of Agriculture is directly responsible. In those of CADU and EPID/MPP it is shown merely as an advisory body whose role is only to facilitate co-ordination with institutions other than the Ministry of Agriculture. In reality the Committee's functions seem to have resulted in neither of these. It seldom met either to issue policy or in an advisory capacity. Since CADU was the

first comprehensive project to be established, the original intention and the one that would be acceptable to the Ministry of Agriculture, and subsequently to EPID, is that the Ministerial Committee's role be limited to co-ordination with IEG ministries and agencies other than the Ministry of Agriculture. Consequently, policy alternatives with regard to all EPID projects and programmes must emanate from the Ministry of Agriculture through EPID.

Due to the independent historical development of each separate project within EPID there is also a lack of uniformity in the projects' organization charts. While EPID itself is a department within the Ministry of Agriculture, several comprehensive projects have departments of their own. The meaning of a division at EPID Headquarters may differ from the meaning of a division at, for instance, CADU. If the aim is to make administrative procedures, including salary scales, uniform for all of EPID, the necessary organizational and administrative adjustments will have to be made by the comprehensive projects.

In September 1974 the Liaison Division was re-organized and expanded. The re-organization resulted in the merger of the Liaison Division and the Planning and Evaluation Unit to form the new Planning, Evaluation and Liaison Division (PE&LD). The primary objectives of the merger was (a) to better utilize the available manpower within the new Division (b) to make the enlarged Division more effective in the supervision and control of the comprehensive projects. The PE&LD has now at its disposal several high and middle level Ethiopian staff in addition to two high level expatriate staff.

As far as the comprehensive projects are concerned, PE&LD is responsible for overall co-ordination of services common to all projects within EPID. It should also monitor the planning and evaluation work carried out by the comprehensive projects and, whenever necessary, provide guidelines and advice for this work.

During the 1973/74 Fiscal Year PE&LD increased its efforts in co-ordination of activities pertaining to all EPID projects. These included:

- a) Completion of draft staff rules and several supplementary regulations that were started during the preceding fiscal year and the distribution of these to all the projects for further comments.
- b) Work was initiated already during 1972/73 on a new salary scale for all of EPID projects. This task which has been delegated to the Center for Entrepreneurship & Management (CEM) has been continued during 1973/74. The study has been envisaged to be completed in December 1973 but due to staff shortage within the CEM it has been delayed considerably. It is now anticipated to be finalized by August 1974.
- c) PE&LD was engaged in the compilation of work programme and budgets for the 1974/75 fiscal year.
- d) PE&LD prepared a new quarterly reporting format which has been used by the comprehensive projects.
- e) A three man PE&LD staff participated in an ad hoc evaluation of the ADDP during part of January and February on instruction of the Head of EPID.
- f) The PE&LD was also involved in the preparation and revision of new projects to be related to EPID. It participated in the preparation of the pulse project and in the Inter-ministerial Committee for the Humera Phase II Project, the grain storage and marketing project, etc.

However, the major work of the PE&LD remains concentrated in serving EPID/MPP. This has been due to shortage of staff in the Division. In order to launch proper monitoring of the planning and evaluation activities of the comprehensive

projects the PE&LD has to be further strengthened by additional professional staff.

The extent of planning and evaluation assistance needed by the comprehensive projects varies from project to project. While projects such as CADU have developed a strong unit for these tasks the remaining projects require assistance at varying levels. Moreover, there are new projects in the pipeline such as the Tach Adiabo and Hedkti Project, Humera Phase II, WADU Phase II and others which will need assistance from E.P.I.D Headquarters in general and the PE&LD in particular. In order to strengthen the supervision and control aspects of the comprehensive projects the principal mechanism to be followed would be to regularize and, as much as practicable, standardize the reporting systems of the comprehensive projects so that a continuous flow of information is received by EPID Headquarters. This would be complemented by regular visits by PE&LD staff and by ad hoc evaluations of the projects from time to time. The continuous built-in reporting system is intended to assist management, both within the projects and at EPID Headquarters, in decision making, while the ad hoc evaluations would verify certain reported facts and figures and would cast new insights useful for planning within the comprehensive projects. Already a uniform quarterly reporting format has been prepared and distributed to the comprehensive project as a first step towards this end. More specifically, by collaborating with the newly appointed EPID Financial Controller the PE&LD would assist existing and new projects in developing suitable accounting procedures and reporting systems.

The above approach, is limited to revealing achievements and shortcomings of activities and programmes within a project and the over-all performance of a project in complying with its planned goals and targets. It does not fully reveal the extent of project impact in the long term. To measure individual programme or overall project impact one would have to rely on survey methods. This could be the "random sample"

method followed by CADU and EPID/MPP or the "depth studies" approach suggested for the Ada project. The role of the PE&LD, in this case, would be to assist in developing suitable evaluation methods applicable to the comprehensive projects. However, so far little has been done in this regard as the comprehensive projects excepting CADU have not to a significant extent embarked on surveys.

In the area of co-ordination of activities the PE&LD will soon direct its attention to the area of procurement of goods and of services common to all EPID. In this area it would appear possible to make significant savings through improved co-ordination.

1.4.2 EPID Headquarters

EPID Headquarters organization as originally envisaged included the heads of Department assisted by the Planning and Evaluation Unit, the Common Services Division, the Liaison Division and the Extension Division. As has been indicated in the previous section, the Liaison Division and the Planning and Evaluation Unit have been merged to form the PE&LD.

Heads of Deptment. The heads of Department are composed of the head of EPID and his two deputies, one of whom is Ethiopian and one expatriate. They are responsible for the overall supervision and management of the work of EPID. This includes the approval of proposed work programme and budgets, long-term planning, negotiations with foreign donors, supervision of personnel, co-ordination with other bodies within IEG.

In theory, these responsibilities should apply equally with regard to the EPID/MPP as well as the comprehensive projects. In practice, as far as the comprehensive projects are concerned, they apply only to the head of EPID. The position of the deputy heads vis-a-vis the directors for the comprehensive project, however, remains somewhat vague and loose.

The directors for comprehensive projects are responsible directly to the head of EPID, through the PE&LD Division. The relationships of the deputies to the project directors, therefore, remains undelineated. To a certain extent the historical development of the projects may have contributed to this state of affairs. MPP was established on the basis of the findings and experience of the comprehensive projects and particularly those of CADU. The ambiguous position of the Ministerial Committee has also contributed to this confusion and diverted the attention of the directions of some comprehensive projects, to look at this Committee rather than at EPID as a source of policy guidance. This situation calls for redefinition in a re-organized EPID structure.

During the 1971/72 year the heads of Department were mainly engaged in the preparation of the loan application to IBRD/IDA for MPP. At the same time three separate agreements were made with the USAID, FAO/DANIDA and ODA for technical assistance mainly in support of EPID's Extension Division. The regular tasks of preparation of progress reports, budgets, and other project operations were carried-out as planned. But due to shortages of staff the desired level of supervision and staff guidance was not forthcoming during this period.

The situation improved in the 1972/73 year when the Planning and Evaluation Unit was established and many of the chores previously borne by the heads of Department were shared with the staff of this Unit. This enabled the heads of Department to devote more time for closer programme supervision. A significant development during this fiscal year was the completion of the negotiation for a loan of Eth.\$43 million from the IBRD/IDA to expand and support EPID/MPP.

The occurrence of the drought conditions in the country during the 1973/74 fiscal year, particularly in Wollo and Tigre provinces, have taken considerable time and effort of the Department heads. The whole task of planning and implementing the drought rehabilitation programme fell heavily on their shoulders. This situation considerably strained the capacity

not only of the heads of Department but also of the whole EPID programme. In consequence, too little time was devoted to the supervision and guidance of the fastly expanding regular programme of EPID by the heads of Department. Now that a Relief and Rehabilitation Commission is established, however, some of these responsibilities will be shared. Therefore, in the future more time should be devoted to the supervision of the regular expansion of MPP.

Common Services Division. The Common Service Division, as the name implies, is a service rendering unit established to facilitate the implementation of MPP. The head of the Common Services Division is responsible to the heads of Department and functions as administrator of EPID.

The specific tasks of the Division include general accounting, input marketing accounting (the credit sales programme), budget follow up, carpool and a variety of other general administrative services, current personnel recruitment and administration, legal services, internal auditing. An information and public relations unit will be added in 1974/75. The Division is organized into sections and units for these functions.

The crucial point to be considered is the efficiency of the Division. The success or failure of the other programmes within EPID are, to a large extent, dependent on the efficiency of services it offers. In the initial stages, and to a certain extent even now, the major problem of the Division has been lack of qualified personnel. In 1970/71 and 1971/72 large discrepancies in the statement of accounts were discovered and several remarks were made by the external auditors. There was not a professional legal officer until the second half of 1973/74 fiscal year, and several other key positions for Ethiopian staff were vacant during EPID's first years of operation. However, these posts are

now gradually being filled and, therefore, better operational efficiency could be expected in the future. Similar to the rest of EPID, the Common Services Division shared an unexpected and heavy load of work due to the drought rehabilitation work.

An important consideration that must be kept in mind with regard to the Common Services Division is that it must develop a broader base in order to accommodate the pooling of services common to all EPID projects and programmes.

The Planning and Evaluation Unit. The Planning and Evaluation Unit was established in 1972/73 as a staff unit directly responsible to the heads of Department. While its primary responsibilities for planning and evaluation were to be directed toward MPP, it would provide some support and guidance for similar tasks of the comprehensive projects within EPID.

During its first year the activities of the Unit were concentrated on the planning for new projects mostly unrelated to MPP. It was heavily engaged in the preparation of the WADU Phase II proposal, in a feasibility study of a reforestation scheme for CADU, in the preparation of a proposal for a pulse development project, and in the preparation of the Fourth Five Year Plan. This more or less full time engagement in planning for new activities coupled with a shortage of staff effectively prevented the Unit to devote much time to one of its primary tasks, the current evaluation of MPP. The work in evaluation was largely limited to the preparation of a tentative evaluation plan for MPP and the initiation of a system for internal progress reporting on the field areas.

In 1973/74 the merger of the Planning & Evaluation Unit and the Liaison Division together with the addition of some staff enabled more resources to be devoted to evaluation work.

During the year a comprehensive crop sampling survey, a survey of the input sales programme, and a baseline survey for the home economics programme were completed. A comparative survey of particularly responsive and unresponsive MPPAs was initiated.

In addition, evaluation services were provided to other projects related to small farmer development outside the scope of EPID.

In 1973/74 the new Planning, Evaluation & Liaison Division was also actively involved in the preparation of EPID's work programme and budget. Among its forward planning work a feasibility study on the initiation of a beekeeping programme within MPP may be mentioned. A variety of economic analyses and minor studies were also carried out on request by the heads of Department.

However, as EPID in general and MPP in particular continued to grow, the Planning, Evaluation & Liaison Division continued to be short of staff to be able to efficiently carry out built-in evaluation of MPP and also participate in the planning for new programmes and activities inside and outside EPID.

The Extension Division. The Extension Division is the principal implementing arm of MPP. At Headquarters the Division is organized into six sections. These are Training, Co-operative Promotion, Agronomic, Marketing and Credit, Animal Husbandry and Home Economics. The heads of Division are responsible to the heads of Department.

The major task of the Division heads is to co-ordinate and guide the work of the Division to achieve its goals and targets. In this effort they are assisted by the six sections which are entrusted with specialized tasks. For example, the Agronomic Section is responsible for the trials and demonstration activities, assisting the extension service to extend new methods and inputs etc. Similarly the remaining five sections have responsibilities for the distribution and collection of credit, promotion of co-operatives, introduction of improved animal husbandry and home economics practices.

The importance of staff training for the performance of the Extension Division is quite obvious. For its pre-service and in-service training the Division has relied primarily on

institutions external to EPID, although some staff and other resources have been provided to CADU's agricultural school. While the Training Section is shown in the internal organization chart of the Division, most tasks related to the organization and administration of training have been handled directly by the heads of the Division. Gradually the volume of work has rendered this arrangement more difficult requiring separate staffing for these duties.

Both in Headquarters and at the field level the major organizational problem of the Extension Division seems to be its relationship with other organizations inside and outside the Ministry of Agriculture. There is undeniably some duplication of work between several units within the Ministry calling for, at the very least, a strong co-ordination and possibly a full reorganization of the Ministry. While MPP is expanding fast and has ample financial resources, some of these organizations in comparison appear somewhat stagnant creating impatience on the part of Extension Division staff and resentment on the part of the outsiders. Much attention should be devoted to these matters by, in particular, the heads of Department.

1.4.3. The Minimum Package Programme

At the field level the activities of the Extension Division are organized in the project areas of MPP. There are three distinct stages of development for field activities. These are:

- A) Observation phase. An extension agent is assigned to an area considered promising for development. Frequently this is done at the request of the local population. His tasks are to initiate fertilizer and variety trials and collect information on farming conditions in the area. No improved inputs are sold to farmers during this phase.
- B) Demonstration phase. If the area on the basis of the observation phase continues to be considered promising,

a second extension agent is assigned to the area which then has two extension areas each encompassing some 2,000 farm households. A supervisor is also assigned to the area. Trials and demonstrations to farmers of agricultural innovations are carried out together with limited sales of improved inputs.

- C) Implementation phase. If farmers in the area respond well to the demonstration phase activities, the area is opened as a full-scale minimum package programme area (MPPA). This may be two to four years after the observation phase was launched in the area. The average MPPA has five extension areas of about 2,000 farmers each or totally 10,000 farmers, and it is located along an all-weather road. The five extension agents are assisted by marketing assistants responsible for the accounting and other work related to the sale of inputs to farmers. They are further assisted in the dissemination of innovations by model farmers, each of whom is to reach some 100 "ordinary" farmers and on whose fields demonstration plots are laid out. The package of activities to be carried out in full-scale MPPA is gradually extended to include, in addition to input sales, animal husbandry, home economics, soil management and water and other activities that are added as the Extension Division develops a capability to launch and supervise them.

In the past full use has not been made of the observation phase. EPID has not had the resources to supervise the surveys made by agents in the observation areas and to process the data they collected. However, as the coverage of MPP has expanded to include most accessible areas in the country the need for the observation phase has gradually diminished. In the future, a more appropriate approach to collect data in a new area might be to launch short but intensive surveys conducted by staff from the Planning, Evaluation & Liaison Division and the Extension Division.

The link between the field areas of MPP and EPID Headquarters is provided by co-ordinators each of whom works on a regional basis covering one or more provinces. In the past all of these co-ordinators have been subject matter specialists in the Extension Division who were assigned this task in addition to their normal duties. As a consequence, this link was often weak resulting in inadequate co-ordination and supervision of the work in the field. However, during 1973/74 full-time co-ordinators were assigned to Mekele, Dessie, Harrar, Awassa and Addis Ababa, and it is hoped to appoint full-time co-ordinators for the remaining regions of the country during the 1974/75 year. These regional co-ordinators will gradually be given a measure of autonomy in the conduct of the MPP activities, and hence it is intended to bring about a decentralization of the administration of MPP.

The position of these regional co-ordinators in relation to the Provincial Agricultural Officers (PAOs) assigned by the Ministry of Agriculture has not been clearly delineated, another matter requiring urgent attention within the auspices of a reorganization of the Ministry. At present there are a variety of issues related to division of responsibilities and lines of authority that cause friction in the field.

1.5. The Geographical Expansion of EPID

Since its inception in 1971 EPID has expanded its geographical coverage as follows:

	1971	1972	1973	1974
MPPA	9	10	28	48
DA	8	14	14	26
OA	47	33	36	28
Extension areas	112	157	207	247

In 1974 EPID has project areas in all 14 provinces of the Empire. MPP is operating in 13 provinces while CADU covers Arussi, the 14th province. The project has thus become a truly nation-wide effort.

The Loan Application to IBRD/IDA states that the project should expand its geographical coverage after 1972 at a rate of ten MPPA or 50 extension areas per annum. As the above tabulation shows, this rate was kept in 1973 and it was more than doubled in 1974, the net increase in this latter year being 20 MPPAs and 140 extension areas.

The rapid increase in the number of EPID project areas in 1974 is explained by the responsibility assigned to EPID for the rehabilitation programmes in the drought affected areas of Ethiopia. These areas include the provinces of Wollo and Harrarghe, most of Tigre and north-eastern Shoa; at a later time there may also be a need to initiate similar activities in the southern province of Bale, Sidamo and Gemu Goffa. In all these areas the project was obliged to abandon its normal step-by-step approach to establishing field areas and to set up new areas coinciding with local administrative boundaries with a MPPA or DA in each awraja.

Already in 1973 the strains caused by the rate of expansion were beginning to be felt, and in 1974 the further increase of this rate led to the appearance of some rather serious deficiencies in the overall performance of the project. These deficiencies were mainly related to shortages of qualified personnel both in the field areas and at Headquarters.

In late July 1974 the following number of positions for the principal categories of field personnel were filled and vacant respectively:

<u>Staff category</u>	<u>No. of posts</u>	<u>No. of posts filled</u>	<u>No. of posts vacant</u>
Supervisors	74	56	18
Ass. supervisors	48	28	20
Agents	212	233	(21)
Ass. agents	123	178	(55)
Mark. assistants	230	170	63

There would thus appear to be an acute shortage of supervisory personnel in the field and of marketing assistants, while sufficient numbers of agents are available. However, this somewhat understates the true picture. Some 30 assistant agents and as many marketing assistants have received only three months of crash training for the rehabilitation programme and should thus not be regarded as fully qualified. In some field areas (primarily DAs) assistant supervisors or senior agents held positions normally reserved for fully qualified supervisors.

The lack of marketing assistants is perhaps most acutely felt in the field areas. The current shortage of 63 represents the entire annual output from the training institutes at Asella (CADU) and Awassa. If EPID is to expand at the rate of 50 additional marketing centres per annum, the training institutes will thus only be able to meet the project's additional needs each year but not make good the shortage. At present it is common in many, if not most, field areas that one marketing assistant handles the accounts of two or more marketing centres. Given the present limited capacity of the training institutes, there would not appear to be an immediate remedy in sight to this problem.

The shortage of supervisors is equally acute in a few areas. However, the needs for this personnel category may generally be covered either through fresh recruitments from the College of Agriculture or through internal recruitment (promotions).

While the number of agents and assistant agents nominally is higher than the number of available posts, the needs for these staff categories are actually higher than shown by the tabulation above. As EPID needs to diversify its field activities it establishes new posts for extension agents in the fields of, for instance, animal husbandry, grain storage, home economics. The project will also need to intensify its work in areas where the farmers' response is high and to assign one or more assistant agents to complement the agents in these areas. While the staffing situation with regard to

agents and assistant agents thus looks more promising, EPID will still need to continue to recruit and train these staff categories roughly at the same rate as in the past.

The negative effects of the shortage of staff in the field areas include the following: insufficient work on demonstrating innovations to farmers including a lag in the appointments of model farmers and inadequate use of them; inaccurate accounting often caused by marketing assistants having to work simultaneously in several centres; insufficient attention to detail with regard to, for instance, queries sent by EPID headquarters; slow progress in the formation of co-operative societies; slower rate of repayment of credit than would otherwise have been possible; increased workload for which there is little possibility of compensating the staff resulting in dissatisfaction. It would be reasonable to assume that sales of agricultural inputs in EPID project areas in 1972 and 1973 could have been substantially increased, had the staffing situation been more satisfactory.

The staff shortage at EPID headquarters is no less serious, albeit of a different nature. There are at present few vacancies for subject matter specialists or other senior personnel. However, EPID's operations have reached such a magnitude and are growing so fast that experienced officers with several years of practical experience in addition to the formal training are needed for key positions. It has proven exceedingly difficult to locate such personnel. The candidates available for vacancies with EPID Headquarters are frequently fresh graduates either from the university in Ethiopia or from post graduate schools overseas. While they possess the requisite formal training, they often lack the experience necessary to participate in the administration of this large project.

This places a heavy burden on a few senior officers, both Ethiopian and expatriate, who do have this experience and, therefore, have to carry a bigger workload than they were originally assigned to do. As a result, on-the-job training

has in some instances suffered and some of the junior subject matter specialists have not received the guidance they need. There have been times when the requirements of the current management of EPID have stretched the capacity of a few senior officers at EPID Headquarters to close to the breaking point, and an additional infusion of managerial talent into EPID Headquarters is a prerequisite to any further expansion of the project's functional and geographical coverage.

At no time has a lack of physical resources and funds been a serious impediment to the project's planned geographical expansion. In the 1971/72 and 1972/73 budget years EPID had, in fact, such large surpluses in its budget at the yearend that it must be termed somewhat surprising that neither IEG nor SIDA raised the question why this was so. The surplus after the 1972/73 budget year was sufficiently large to finance a major part of the entire emergency programme in Wollo for seed distribution the cost of which amounted to close to \$1 million. Actually, the lack of field staff is by itself one of the major reasons for the budget surpluses.

1.6 Participation by Foreign Donor Agencies and IEG

1.6.1 Participation by Foreign Donor Agencies

During its first three years of operation EPID has been financed as shown by the following table.⁽¹⁾

(1) EPID Publication No. 13, page 40, and EPID Publication No. 15, table 10.

Table 2. Financing of EPID 1970/71 - 1972/73 (Rth. \$)

		1970/71	1971/72	1972/73
IEG	In cash	86,468	662,400	2,241,440
	In kind	800,000	760,644	577,528
SIDA	In cash	125,500	691,000	1,071,677
	In kind	291,654	620,762	732,626
FAO (DANIDA)	In cash	-	-	-
	In kind	-	195,000	95,216
ODA	In cash	-	-	-
	In kind	-	-	114,800 (2)
LWF	In cash	-	-	118,000
	In kind	-	-	-
Total cost		1,303,623	2,929,806	4,851,387

The IDA loan became effective during the 1973/74 budget year and will be used to reimburse expenditures from 8 July 1973. Technical assistance furnished by USAID was also made available during the 1973/74 budget year.

Technical assistance has been or will be provided to EPID during its first phase as indicated by the table below:

(1) This figure is an estimate, since the amount of contribution in kind by IEG in 1970/71 is not available.

(2) Estimate.

Table 9: Technical Assistance Provided to EPID (Man-months of expert services)

<u>Year</u>	<u>SIDA</u>	<u>FAO</u>	<u>USAID</u>	<u>ODA</u>
1970/71	41 ⁽¹⁾	40	-	-
1971/72	87	35	-	-
1972/73	112	30	-	28
1973/74	94	63	23	12
1974/75 ⁽²⁾	148	98	36	8
Total	482	266	59	48

In the following the contributions made by the various donor agencies and IEG will be discussed separately,

SIDA. The support provided by SIDA to EPID's first phase has been specified in the Plan of Operation forming part of the agreement on co-operation for agricultural development signed on 27 August 1971 between the Swedish Government and IEG.

According to this document, the volumes of assistance to be provided to EPID by SIDA during the first phase of the project are the following:

Table 10: Assistance to be Provided by SIDA to EPID 1971/72 - 1974/75 According to EPID's Plan of Operation

<u>Year</u>	<u>Experts, man-months</u>	<u>Total, Eth.\$</u>
1971/72	120	1,500,000
1972/73	120	1,444,000
1973/74	108	1,448,000
1974/75	108	1,581,000
T o t a l	456	5,973,000

(1) Including five man-months from 1969/70 for project preparation.

(2) The figures for 1974/75 include extensions of current expert contracts as well as new posts requested for foreseen.

Of SIDA's total assistance to EPID, according to the Plan of Operation, about 40% consists of expert services and 47% of contributions to the project's net operating costs (budget support paid in cash), the remainder consisting mainly of funds for training and special studies.

A comparison between tables 9 and 10 above indicates that all possibilities for technical assistance from SIDA have not been utilized. Table 9 shows that the number of man-months of expert services utilized during or planned to be utilized during the period covered by the Plan of Operation (1971/72 - 1974/75) is 441, while a total of 456 man-months are provided for⁽¹⁾. On the other hand, the cash contributions used in 1972/73 exceeded the provisions of the Plan of Operation. The excess was explained by EPID's emergency seed distribution programme in Wollo province which was financed out of EPID's budget, and this excess was authorized and later covered by SIDA.

In addition to the support indicated in table 10 SIDA during 1974 made available to EPID a cash contributions of about Eth.\$3.7 million for the rehabilitation programme in the drought affected areas. SIDA also approved the recruitment of an expert and several volunteers to assist in the construction of roads in the drought affected areas. These will all be attached to EPID, and they may possibly constitute the beginning of a rural roads unit to be attached to IHA at a later time.

Recruitment of expatriate staff by SIDA has in some cases been very slow, and the delay in filling certain key posts has caused considerable albeit temporary problems. It has also been felt that SIDA's personnel administration procedures sometimes tend to be very cumbersome.

However, it should be stressed that EPID has generally had an excellent co-operation with SIDA. Within the existing

(1) It is, of course, still possible for EPID to commit the remaining 15 man-months during 1974/75.

budgetary ceilings EPID (and CADU) has always had first priority for assistance. SIDA has never tried to influence the conduct of EPID and has demanded a minimum with regard to reporting, budgeting and other current information. SIDA's cash contributions are, of course, put at the free and unlimited disposal of the project, making them very efficient and desirable from the recipient's point of view. In addition, SIDA's assistance to EPID has been governed by a well designed agreement that makes each payment of SIDA's cash contribution contingent upon prior payment by IEG of its own contribution, and there have never been any major delays in the payment of these contributions.

In the Plan of Operation seven special studies are specified that were to be executed during EPID's first phase. The amount of Eth.\$296,000 was reserved for four such studies to be financed directly from EPID's budget, two additional studies were expected to be financed by IBRD/IDA and one by IEG.

To date studies have been completed in the fields of seed multiplication, animal husbandry, home economics, and marketing. All of these studies except that in seed multiplication have been issued in the EPID publication series. These studies have all been designed as policy guidelines for EPID, and they all either have already led to or are expected to lead to concrete action programmes for the project.

The plan to conduct a study on the effects of population growth was postponed, since this particular study falls somewhat outside the direct scope of EPID's activities, and since it was perhaps the most complex and costly of the seven studies. A study on the effects of mechanization was carried out by CADU, and its findings were so challenging to official IEG policy that the study was classified, and no agreement could be reached within IEG whether EPID should also launch such a study. Finally, the cost of a study on feeder road construction has been provided for under the IBRD/IDA loan, and it is intended to initiate this study during the 1974/75 budget year.

It is evident that SIDA's support to the first phase of EPID has been instrumental in getting the project under way. In so far as SIDA also is supporting CADU, and EPID is designed to replicate the experiences gained by CADU on a nation wide scale, it was possible to bring about an effective exchange of experience between the two projects and to achieve a smooth initiation of EPID. It is doubtful whether EPID could have been launched so fast and grown at such a rate, had the principal donor not been SIDA.

FAO. The assistance by FAO to the agricultural extension service of Ethiopia may be traced back to April 1967, when FAO initiated the Fertilizer Programme of the Freedom from Hunger Campaign with funds in trust made available by DANIDA, the development agency of the Danish Government. The major objective of this project was to promote the use of fertilizers by farmers through demonstrations and other means. In a number of locations fertilizers were sold to farmers on credit and on cash, in 1970 some 1,100 farmers obtained fertilizers through these outlets.

With the establishment of EPID in 1971 this project was directly incorporated into EPID's Extension Division. The expatriate personnel consisting of one soil fertility expert and one to two associate experts continued their work on laying out fertilizer trial and demonstration plots in EPID field areas. The fertilizer distribution component of the project was discontinued as this activity was widened and taken over entirely by EPID.

The early work of this project made an important contribution to knowledge of soil fertility in wide parts of Ethiopia, to the introduction of fertilizer as an innovation, and to the training of staff. In particular, the results from the fertilizer trials were most valuable as the loan application to IERD/IDA for MPP was being prepared and constituted one of the very few empirical data bases on which the application was supported.

Fertilizer being the major innovation disseminated by the package programmes in general and MPP in particular IEG in April 1971 requested an extension of the project within the auspices of EPID for another five years. Following a joint evaluation of the project by FAO and DANIDA in August 1971 it was decided to extend the project initially by three years commencing in April 1973, with provision for an extension of a further two years subject to an evaluation to be undertaken in 1975/76.

This new project starting in April 1973 provides for an expatriate soil fertility specialist and an expatriate supply and credit expert for three years each in addition to one or two associate experts and minor amounts of supplies and equipment. Its total cost for the three year period is estimated at US\$269,000. As of July 1974 the soil fertility specialist and one associate expert were in post, while the supply and credit specialist was expected shortly.

In early 1972 a joint FAO/DANIDA preparatory mission visited Ethiopia in response to a request by IEG in order to appraise the possibilities of providing technical assistance in the field of co-operative promotion in the agricultural sector. Recognizing the importance of the evolution of the package programmes for rural development, and the intention of IEG to activate farmers' participation in these programmes, the mission proposed the establishment of a Co-operative Promotion Group (later named the Co-operative Promotion Section) within EPID.

This project was to have a duration of two years, with provision for an extension of a further year subject to an evaluation after one full year of operation. It made provision for three expatriate co-operative promotion specialists in addition to minor quantities of equipment and supplies for a total cost of US\$207,000. The first expatriate specialist arrived in June 1973 and in July 1974 all the three expatriates were in post, although one of the expatriate advisers had been transferred to work on the promotion of dairy co-operatives in collaboration with DDA.

It would be premature to assess the impact of this project which has started so recently. However, it is clear that it has a major role to play within EPID, given the importance attached to co-operative promotion within the overall package programme strategy for rural development in Ethiopia.

The assistance provided to date by FAO/DANIDA has thus been in fields of crucial importance to the evolution and success of EPID, and it has been well tailored to the needs of the Department. The difficulties EPID has encountered in connection with its assistance from FAO have mainly been on the operational level with FAO initially not recognizing the desire of EPID to incorporate all personnel, supplies, equipment and vehicles furnished by FAO fully into its own administrative structure. Some of the associate experts attached to the fertilizer project have also proven to be of limited usefulness to EPID raising the question whether this type of expatriate personnel does meet EPID's needs, and whether more attention should not be devoted to the training of Ethiopian staff in their place.

FAO also made important contributions to the rehabilitation programme conducted by EPID in the drought affected areas. In addition to serving as a conduit for funds for the oxen and seed distribution programmes and participating in the design of the programme itself, two expatriates were provided for one year each to assist the co-ordinators in Harrarghe and Tigre respectively, both of whom were in post as of July 1974. An accountant for EPID headquarters was also to be furnished as well as two associate experts, all destined for work related to the rehabilitation programme.

ODA. The assistance to EPID furnished by ODA dates back to December 1970 when a team of three experts in grain storage arrived to work with the Plan Production and Protection Division of the Ministry of Agriculture; they were in October 1971 joined by a fourth expatriate. These experts were re-recruited for a two year period by ODA on behalf of the British Freeborn From Hunger Campaign which had agreed to finance the

Project (1).

In July 1972 this expert team was officially transferred to EPID, where they formed a Grain Storage Unit within the Agronomic Section. One of the experts had by then been assigned to work in the Jimma area, one in the Dire Dawa-Harrar area, and the two others worked out of EPID Headquarters.

A major task of these experts was to train EPID's extension agents in the use of improved grain storage methods including the use of insecticides and the construction of improved on-farm storage and to ensure that the materials required for this work were supplied. The training concentrated on the use of simple insecticidal dust treatments, the construction of on-farm stores, and good storage hygiene. Extension work aimed at promotion of improved on-farm storage was carried out in the Jimma and Kersa MPPAs.

Surveys made of EPID's extension agents indicate that the agents' awareness and knowledge of improved grain storage techniques have increased as a result of this programme. A handbook in grain storage has been completed and will be distributed to the field staff. Some 300 improved on-farm stores have been constructed in the Jimma and Kersa MPPAs, and farmers' demand is increasing.

However, the grain storage programme was probably terminated somewhat prematurely. Continued assistance will be required to train field personnel and to expand the scope of the on-farm store construction also to other MPPAs. Such assistance will be of particular importance as EPID starts the construction of the planned 200-ton stores at the marketing centres. Provision has, therefore, been made for one expert post in the 1974/75 budget in grain storage to be filled by ODA, and it is thus envisaged to resume the assistance from ODA in this field.

(1) Clarke, R.O.S.: Final Report - FFHC Grain Storage Project in Ethiopia. Addis Ababa, February 1974. (mimeo); EPID archives.

During the 1973/74 budget year ODA also made available the services of an expatriate to assist the EPID co-ordinator for Wollo province with the supervision of the drought rehabilitation programme there.

USAID. The possibility of support by USAID to EPID was raised at the time when the project's Plan of Operation with SIDA was being negotiated. At that time it was contemplated that USAID would provide to EPID the services of five expatriate experts in addition to vehicles and budgetary support equivalent to the running costs of five MPPAs. As the assistance forthcoming from SIDA proved to be sufficient with particular regard to budgetary support, and as the budgetary support from USAID would be taken from the Agricultural Sector Loan and not be on a grant basis, the participation of USAID in EPID was later reduced to three expatriate agronomists for two years each at a total cost of US\$300,000. An agreement to this effect was signed in June 1972.

Recruitment of these advisers proved to be a time consuming process. The first (entomology) arrived in August 1973, the second (drainage and soil management) in September 1973, and the third (tropical crops) only in July 1974 over two years after the signature of the agreement.

In December 1972 EPID became involved in the elaboration of a project designed to promote the production of pulse crops for the export market on the basis of a consultant's study completed earlier that year. This project would be supported by USAID and, while involving also other IEG agencies like IAR and EGC, be intended to strengthen the agricultural extension services provided by EPID with particular emphasis on pulses. Following lengthy committee discussions within IEG a final project proposal was submitted to USAID in March 1974, the project agreement was approved and signed in June 1974, and implementation was expected to commence during 1974/75.

It would yet be premature to assess the efficacy of the USAID support to EPID. However, relative to the volume of this

support USAID has probably been the donor demanding most attention of EPID management due to its cumbersome procedures. In addition, support in kind by USAID has the from EPID's point of view undesirable feature of being tied to purchases in the donor country.

USAID also is supporting the rehabilitation programme by providing about Eth.\$350,000 worth of insecticides and Eth.\$380,000 for purchase of local materials for construction of stores in the affected areas. Considerable additional support is expected to be forthcoming for medium term rehabilitation.

IBRD/IDA. It was recognized at the time of the establishment of EPID that if the project was to have a truly nation wide coverage SIDA could not alone remain the major donor. In particular, the demands on the IEG budget would be of such a magnitude that capital assistance beyond the likely capability of SIDA would be required. In 1971 work on preparing a request for capital assistance on a loan basis from IBRD/IDA was, therefore, initiated.

This loan application was completed and officially submitted to IEG in June 1972⁽¹⁾. It was approved by IEG for submission to IBRD/IDA, and the following month IBRD/IDA conducted an appraisal of the project leading to a number of minor revisions in the original proposal. Official loan negotiations took place in Washington D.C. in April 1973. As a result of these negotiations a loan of US\$21 million to be disbursed over a three year period was agreed upon⁽²⁾. The Loan agreement was signed between IDA and IEG on 5 July 1973 and ratified by the Ethiopian Parliament in early 1974.

It is intended that expenditures by EPID for MPP from 8 July

(1) EPID Publication No. 6.

(2) Of the total amount US\$20 million is intended for the financing of MPP while US\$1 million is earmarked for project preparation by the Planning & Programming Department of the Ministry of Agriculture.

1973 will be reimbursed under the loan. The validity of this loan would thus extend through the 1975/76 budget year by which time proposals for MPP Phase II should have been completed.

Participation by IEG

The participation by IEG in the conduct of EPID may conveniently be analysed on two levels: the volume and quality of assistance in kind on the one hand and the extent and substance of policy support on the other.

The value of assistance in kind provided to EPID during its first year of operation by IEG is illustrated by table 8. It is evident that as EPID has grown the financial commitments by IEG have successively become heavier. In the 1973/74 budget year the funds allocated to all EPID (i.e. including the comprehensive projects) was equivalent to 54.5% of the entire capital budget of the Ministry of Agriculture; MPP alone accounted for 21.3% of the Ministry's capital budget.

However, at no time has EPID experienced any delays in the payments by IEG of the latter's cash contribution. IEG has since the establishment of EPID in 1971 given the utmost attention to the budgetary requirements of the project, and there have been very few reductions made to EPID's annual budgetary proposals. In this regard the support given by IEG has been virtually flawless.

Also in other respects has the project benefited from good operational support by IEG. EPID management has at all times had direct access to the top level officials in the Ministry of Agriculture who have displayed an understanding attitude toward the current problems of the project and provided excellent support. The project has had an apparent priority within the Ministry for the allocation of trained manpower and other resources. Within the constraints of the Ministry of Agriculture EPID has thus received what may be termed the best operational support possible. There can be little doubt that this has contributed substantially to enabling the

project's rapid growth to take place and also to the present relatively effective internal organizational and administrative structure of EPID.

When EPID in 1971/72 incorporated the previous agricultural extension service it was also obliged to absorb the existing cadre of extension workers. They were all employed under the regulations of the Central Personnel Agency in the capacity of permanent civil servants whose appointments normally cannot be terminated. All staff subsequently employed by EPID have been hired on contract on terms stipulated within EPID's own staff rules. There have been some problems of incorporating these "old school" extension workers into EPID's fast growing structure.

On the operational level EPID has also faced problems of co-operation with a number of IEG agencies and, at times, with units within the Ministry of Agriculture. The lack of effectiveness of the national grain marketing organization has been a constraint on EPID's overall ability to increase the farmers standard of living. However, in the solution of such problems EPID has always been able to rely on competent high level support within the Ministry of Agriculture.

On the policy making level the support from IEG has at times appeared somewhat more wavering. IEG has throughout remained committed to a policy of promoting rural development in Ethiopia through the package programmes of EPID and hence to the nation wide evolution of MPP. The funds and other resources made available to EPID are a sufficient indicator of the sincerity of IEG with regard to this policy.

However, EPID has not received the same support as regards some more fundamental aspects requiring decisive action and positive legislation by IEG. Most observers familiar with Ethiopian conditions agree that the slow rate of growth in the agricultural sector will persist until profound measures are taken

to change the country's archaic systems of land tenure. An EPID report notes that "it is unrealistic to expect rapid or

sustained progress on either the income or production side of agriculture or in the development of a domestic market on which industrial development can be based, until bold measures in land tenure are taken" (1).

Although CADU in its project area has obtained a satisfactory participation by tenant farmers in its input sales activities, the same cannot be said for MPP in those of its areas where rist landownership prevails (2). The MPP loan application to IBRD/IDA states a target of a 75% participation rate by farmers in a MPPA that has been operational for more than ten years, and this target has been incorporated in the computations of the economic justification of MPP. There will come a time when it will be readily apparent that this target can never be met in the absence of positive action by IEG with regard to land tenure reform, and that MPP in the absence of any such action will have been initiated on fallacious assumptions.

Proposed legislation has been before Parliament ever since 1970. However, it was last defeated, even in a watered down form, in 1973. With MPs tending to represent land owning provincial elites, it would appear unlikely that Parliament within the foreseeable future will pass such legislation. "The land reforms required to stimulate agricultural production would greatly threaten the political and social system whose power, status and wealth are mainly facilitated by the present land tenure system" (3).

While IEG to date has not been willing to face up to the issue of land reform, the political developments in Ethiopia during the first half of 1974 would appear to indicate that the prospects for initiatives in this field may be improving. However,

(1) IBRD, Agricultural Sector Survey, I, p. 32.

(2) Tewolde W/Michael, 1973 Input Sales Survey, EPID Planning, Evaluation and Liaison Division, March 1974 (draft).

(3) Cohen, John M., Local Government Reform in Ethiopia, A Washington D.C., 1974, p. 19.

it is clear that such initiatives would require far reaching changes in the present structure of government in the country.

Yet the work of EPID is probably contributing to increasing the prospects of changing the present land tenure system at some future time. By focusing its attention on a large stratum in society previously virtually unaffected by any development efforts and by any positive attention by IEG agencies EPID is stimulating a social awareness that "can have a dramatic effect on major constraints which hamper increases in production and the general process of change"⁽¹⁾. EPID's activities in several comprehensive and minimum package programme areas are beginning to make the peasants aware of the social inequalities in their areas. CADU's recent experiences from Chilalo tend to suggest that the peasants are beginning to recognize the need to organize themselves in co-operatives in order to obtain a collective bargaining power toward merchants and other local power factors.

In conclusion, it may thus be said that while IEG's commitment to a policy of expanding EPID, as manifested by its operational support, has been unflinching, its lack of positive initiatives with regard to the central issue of land reform has provided a constraint which, in the long term, may preclude EPID from reaching its goal of involving a major part of the poorest farmers and the tenants in its activities.

IEG has not taken any action known to EPID to improve the system for tax assessment and collection in package programme areas and, as a result, it is highly unlikely that the project's goal of creating financial resources through an increase in the tax-paying ability of the population has been met (see below Section 1.7.5). However, it should be recognized that a reform of the taxation system would be likely to be a cumbersome and time consuming exercise, related to the issues of land reform and the structure of government.

(1) Cohen, John M., op. cit., p. vii.

IEG has also failed to take any initiatives with regard to the allocation of Government land for the purpose of resettling tenants evicted in package programme areas. Already in 1970 at the time of the preparation of the Master Plan for EPID it was recognized that "there is evidence that the development effort will be accompanied by an accelerating eviction of tenants"⁽¹⁾. This statement was made on the basis of experiences gained and documented by CADU⁽²⁾. IEG was thus at an early time aware of this problem and could have met it head on by allocating Government land in the vicinity of package programme areas for the resettlement of evicted tenants, a proposal also made in the Master Plan for EPID. Instead, IEG has suppressed CADU's study of tenant eviction and taken no action along the lines proposed in the Master Plan for EPID.

On the other hand, IEG in May 1973 abolished the subsidies on mechanized agricultural implements which previously had existed in the form of an exemption from import duties and fuel tax on such items. Since mechanized agriculture in the absence of such levies had been exceedingly profitable, expanded at the expense of peasant farming, and resulted in tenant eviction, this decision must be considered favourable for the development of EPID.

1.7. Overall Impact on Major Project Goals

1.7.1 Improvement in the Standard of Living of the Peasant Population

The primary vehicle for reaching this goal, the first main goal in EPID's Plan of Operation, is by raising farmers' income through successful dissemination of the various innovations designed to increase agricultural production. As set out above in Section 1.1, EPID has been relatively successful in increasing year by year the quantity of inputs

(1) EPID Publication No. 1

(2) CADU Publication No. 74

sold to farmers. Yet the overall economic impact of these inputs on the target populations and their real contribution to raising the peasants' standard of living must, at this time, be termed limited. It would be premature to expect EPID to have had any significant impact on the standard of living of the farmers in its field areas after only three years of operation in any area and less than that in most areas.

If the incremental output of any kind of food grains, on an average, is estimated at four quintals per quintal of DAP sold to farmers, and if the average farm-gate price for such grains in early 1974 is placed at \$17.50, then the volume of 30,500 quintals of DAP sold by EPID in 1973 to farmers would in the 1973/74 season have generated gross economic benefits of \$2,135,000. The incremental cost to the farmers for the sold quantity of DAP would be \$1,238,300. The net financial benefits to farmers from use of DAP in EPID field areas in 1973/74 would then be about \$900,000⁽¹⁾.

This is equivalent to \$37 per purchasing farmer. If each MPPA is assumed to contain 10,000 farm households and each DA 4,000 farm households, it is equivalent to \$2.76 per farm household in the EPID field areas. If benefits from seed and other inputs are also included, it may be estimated that total net financial benefits generated by EPID in 1973/74 to the farmers amount to about \$40 per purchasing farmer and to \$3 per farm household in the total target population.

(1) In this rough calculation Urea is disregarded, as it is used primarily on maize and sorghum which crops normally show much larger yield increases than the average of four quintals used here. Yield dependent costs are also disregarded. The calculation also underestimates the economic benefits to IEG that are generated through an increased production and improved food grain supply in the current overall deficit situation.

It should thus be obvious that the overall economic impact of the project to date has been relatively limited. While \$40 may be a substantial amount to an individual farm household, and while the impact in certain particularly responsive areas (e.g. Jimma, Asendabo, Henna) is likely to have been considerable, EPID has simply not yet been operational long enough to have been able to affect in any significant manner the economic standard of living of the target population.

Whether EPID in the longer term will be able to achieve any significant economic impact will, of course, depend on its ability to continue to make available to the farmers economically viable agricultural inputs. As discussed in Section 1.3., whether these inputs will be economically viable will in large measure depend on the relationship between their price and the price of the outputs they produce, and this relationship is largely beyond EPID's control. In July 1974 the CIF Addis Ababa price of DAP was reported to be no less than Eth.\$160 per quintal, while Urea was quoted at about Eth.\$75 per quintal. It is evident that the availability of a subsidy not only by IEG but also by foreign donors on fertilizers in 1975, and probably also subsequent years, will determine EPID's sales of this input.

In the IBRD/IDA Appraisal Report for MPP a DAP price to the farmer of \$42 per quintal was used. Already two years after the preparation of this report this price has thus been exceeded considerably: the true cost before subsidy of DAP to the farmer in 1974 is \$50.20 per quintal. There is no discussion of fertilizer subsidy in the Appraisal Report and relatively stable fertilizer prices must thus have been one, albeit implicit, basic assumption on which MPP was designed. The rapid fertilizer price increase thus poses a threat to EPID as a whole and makes its future expansion fully dependent on IEG subsidies. It should be stressed that IEG alone cannot meet the entire cost of such subsidies, given the present world market prices for fertilizers.

With the rapid increase in the fertilizer price it becomes incumbent on EPID to devote an increasing attention to other means of raising small farmers' production. More emphasis must be given to the multiplication and sale of improved seeds. Cultural practices should be stressed more within the extension work: row planting of maize is one good example. Agricultural implements and soil and water management must be made to play a greater role, and crop diversification should be encouraged more.

The Plan of Operation stresses that the farming population in the field areas should assume an increasing responsibility for the conduct of EPID's field activities. This has been intended to mean that co-operative societies should assume EPID's present functions with regard to distributing agricultural inputs and credit to farmers (1).

To date progress in co-operative formation has been rather spotty. There are as of May 1974 about 25 registered primary co-operative societies working with small farmers, and another sixty pre-co-operatives are under active formation. Several of the registered societies exist almost only in form and appear moribund. It is clear that a substantial improvement in the rate of co-operative formation is called for, if it should ever be possible to achieve marketing of agricultural inputs and outputs by a network of co-operative societies.

Some of the problems faced by the Co-operative Promotion Section are discussed in EPID's 1972/73 annual report (2); some were also mentioned above in Section 1.1.

1. Tenant farmers are slow to join the co-operative and difficult to convince that they may derive benefits from membership.

(1) Plan of Operation, Section 2.2.2.

(2) EPID Publication No. 15.

2. It is difficult to make the farmers observe any elementary discipline in connection with meetings, to attend a succession of meetings, and to arrive at the meetings on time.
3. The process of collecting capital for the co-operative is inordinately slow.
4. Elected leaders for the co-operative often expect to derive personal benefits from their position that cannot be reconciled with the objectives of the society.
5. In some areas the farmers are not yet convinced of the value of the innovations promoted by EPID, let alone of the value of a co-operative.
6. Merchants and other local notables may view the co-operative as a threat to their power and may, therefore, endeavour to sabotage the society.
7. Shortage of trained personnel to participate in the co-operative promotion work and in the management of the societies is an acute problem.

It is evident that progress in co-operative formation is another implicit and yet unproven basic assumption underlying the MPP design. It to date remains a moot point whether the farmers will respond to the co-operative ideals and whether it will be possible to establish economically viable primary co-operative societies in large numbers in the Ethiopian countryside. However, recent experiences from CADU give cause for some optimism in this regard, as the farmers in Chilalo during the past year have displayed a much greater interest than in the past in forming co-operatives.

In conclusion, it is yet too early to pass a judgement on EPID's ability to meet its first main goal. Certainly the rate of growth both of EPID's geographical coverage and of its input

sales indicates that the project has made good progress toward this goal. However, it is premature to perceive any real change in the standard of living of the target populations as a result of the project.

1-7.2 Employment Effects

It is stipulated in the Plan of Operation that EPID should endeavour to avoid adverse employment effects and observe opportunities to create additional farming possibilities.

It is evident that the yield increasing inputs and farming techniques introduced by EPID will raise employment on the farms. The agricultural implements when introduced will, of course, reduce considerably labour requirements for seedbed preparation. However, the increased labour needed for weeding, harvesting and threshing of the incremental production is likely to more than compensate for this reduction. In as much as no implements have been sold to farmers to date, EPID should in its field areas have generated increased on-farm employment for those farmers purchasing inputs.

Simply by raising production and making previous deficit areas self supporting with regard to supply of food grains EPID may achieve its greatest employment effect. Through EPID's efforts peasant farming may be made attractive, and the emigration from certain areas may be arrested. This can be seen, for instance, in the Henna MPPA which previously was a grain deficit area which farm families were leaving, but which due to the good results of fertilizer sales there is now becoming self-sufficient with an ensuing inflow of people. However, no data are available to indicate the magnitude of such rather intangible effects.

On the other hand, CADU's experience indicates that small farmer development programmes may indirectly induce also the expansion of large scale farming with tenant eviction as a result. As the productivity of the soil increases, land values increase. As a first step landlords may raise the rents they charge to their tenants. The second step may be that the

tenants are evicted as the landlords either prefer to cultivate the land themselves using mechanized implements or contract for the cultivation with commercial farmers. This would obviously have a negative employment effect.

There is at present no empirical data available to enable a determination of the net employment effects of the package programmes in general and MPP in particular. A study of these effects has been executed by CADU but the report is not yet released. It is hardly possible to draw any conclusions on the basis of the existing very fragmentary material.

1.7.3 Participation by the Poorest Farmers Including Tenants

The statement in EPID's Plan of Operation that the project's "activities shall be directed mainly towards farmers in the lower income brackets" is of paramount importance. By implication "farmers in the lower income brackets" includes tenant farmers. In the past the goal attainment and general performance of CADU and EPID have, to a possibly rather exaggerated extent, been assessed on the basis of the ability of the projects to involve tenant farmers in their activities. Indeed, at one time SIDA's continued involvement in these projects was said to depend on the extent to which tenant farmers were made to purchase inputs and participate in other activities.

At the outset it should be emphasized that the current land tenure systems serve as serious disincentives for tenant farmers to buy agricultural inputs and make other improvements on their farms. A tenant farmer usually pays between one-fourth to one-half of his crop yield to his landlord, although he often has to pay the entire cost of inputs like fertilizer. He knows that he may be evicted any day and that his landlord is unlikely to compensate him for any improvements made on the farm. He may be so short of money that it is difficult for him to raise in cash one-fourth of the value of the fertilizer he wishes to buy and thus pay the required downpayment. Frequently he does not dare to buy improved inputs from an EPID marketing centre without first asking for his landlord's

permission. Some landlords plainly refuse to grant such permission, apparently on the ground that such "modernizing influence" as fertilizer could create an increased awareness and hence unrest among the tenants⁽¹⁾. Other landlords live in towns far away from their lands making it practically impossible for their tenants to approach them and obtain their consent.

It should thus be clear that as long as the present land tenure systems prevail in rural Ethiopia it will, at best, be difficult to elicit the participation of tenants in the activities of the package programmes. The tenant has a smaller profit margin than the owner/cultivator and will, therefore, suffer more when grain prices decline and/or the input price increase; it may be hypothesized that tenants' purchases of inputs are closely correlated to the ratio between grain and input prices. As in any economic innovation diffusion process, the innovators are likely to be the relatively more affluent owner/cultivators, while the poorest farmers and particularly the tenants will be the laggards. EPID has nowhere been operational long enough for the innovation diffusion process to have progressed very far, in most of EPID's field areas (a few areas like Jimma MPPA are exceptions) those farmers who have bought inputs to date should be characterized as innovators or early adopters. It may, therefore, be anticipated that they are relatively wealthier than the average farmer in these areas.

According to the model for innovation diffusion included in the loan application to IBRD/IDA for MPP, the diffusion process will take 11 years in an average project area⁽²⁾. To

(1) Cf Section 1.6.2 above. This attitude by landlords is, of course, not fully rational since the tenants' rent payments would increase if they were allowed to use improved inputs like fertilizer.

(2) EPID Publication No. 6, p. 15.

date EPID has not been operating for more than three years in any area⁽¹⁾.

Essentially the only way for EPID to find out the characteristics of those farmers purchasing inputs is to ask them at the time when they approach EPID's field personnel to apply for credit for the inputs. While completing the loan application form for the farmer, EPID's extension agent is expected to ask him whether he is an owner/cultivator or a tenant, how much land he cultivates, what crops he plans to grow etc.

Unfortunately, this information was not collected systematically from all farmers purchasing inputs until the 1973 distribution season. In 1971 and 1972 a simpler and less accurate procedure was used, and EPID's statistics from 1971 and 1972 are, therefore, not strictly comparable to those of 1973.

Before these statistics are presented it should be stressed that they suffer from the following deficiencies which all contribute to making them somewhat inaccurate:

(1) Farmers usually give information on the size of their holdings in the local units of measurement which are converted into hectares by EPID's extension agents. The local units are often related to the area that one man can plough with a pair of oxen in one day. It is evident that the local units by themselves as well as the conversion into hectares may be grossly inaccurate.

(2) To avoid EPID's previous requirement that tenants should have their landlords' written consent to purchase inputs farmers, who actually are tenants,

(1) This would then ignore the FAO/FFHC Pilot Credit scheme activities which in some areas preceded EPID by several years. However, these activities had a lower impact than EPID's subsequent full scale operations.

may have presented themselves as owner/cultivators⁽¹⁾.

- (3) On the other hand, owner/cultivators may have presented themselves as tenants, fearing that the information on the size of their holdings may be used for tax assessment purposes. For the same reason other owner/cultivators may have stated a smaller holding size than they actually have.
- (4) In some of EPID's field areas the general distrust by the farmers of any government representative and hence also of EPID's field personnel is such that they virtually refuse to yield any information on their holdings, cropping patterns etc.

Points 2 and 3 above would thus tend to underestimate and overestimate respectively the participation by tenant farmers in EPID's input sales. Since there is at present no basis for even hypothesizing which of these biases predominates over the other, it is assumed that they cancel each other out. While the area estimates evidently are less than accurate, it is believed that they present a fairly illustrative picture of the holding sizes of programme participants, as the base material is so large that individually large inaccuracies should to some extent have been averaged out.

The table below illustrates tenant participation, computed as percentages of all farmers purchasing inputs on credit, in the 11 areas which have been operational since 1971 and for

(1) This requirement was discontinued in 1974 as it was recognized that it served as a disincentive to tenants to buy inputs.

which a time series of three years is obtainable⁽¹⁾,

Table 11: Tenant Participation in EPID's Credit Programme
In the 11 "Original" MPPAs (percentages)

<u>MPPA</u>	<u>1971</u>	<u>1972</u>	<u>1973</u>
Asendabo	16.2	4.5	7.4
Ambo	19.7	16.7	22.5
Bako	11.1	11.5	32.9
Enda Selassie	0	0	0
Finote Selam	0	0	14.8
Gonder	0	0	11.9
Haik-Woldia	0	0	19.0
Jimma	5.8	11.1	6.2
Kersa	1.9	2.2	8.3
Shashamane	25.5	35.7	-
Tullu Bollo	14.5	6.1	20.1
All 11 areas (weighed average)	15.2	12.0	11.5

In the provinces of Tigre, Begemdir and Gojjam most farming land is communally owned, and farmers will usually claim that they hold title to the land they cultivate. Therefore, there are no tenants at all in Enda Selassie, and most of those above shown as tenants in Gonder and Finote Selam are owners/renters renting only part of their holdings.

In 1972 grain prices in Ethiopia were generally at an unusually low level. It has already been explained how the tenants will be more susceptible to such price falls than owner/cultivators and hence will tend to be more discouraged from buying improved inputs. CADU experienced a fall in its tenant participation in 1972. It is seen from the table that this has also affected EPID.

(1) The data from 1973 are taken from Tewolde W/Michael, op. cit. This draft report will appear as an EPID publication later in 1974.

In 1973 tenant participation increased in all areas except Jimma, and input sales were discontinued by EPID in the Shashamane area. Since these two areas had sales volumes much above average ⁽¹⁾, and since the Shashamane area in 1972 had by far the highest rate of tenant participation, the weighed average for all the 11 areas continued to fall slightly in 1973. However, those areas with rist landownership typical of the southern highlands of Ethiopia, i.e. Ambo, Bako and Tullu Bollo, all showed a considerable increase in tenant participation over the previous year.

CADU in 1971 had a tenant participation at a rate approaching the proportion of all tenants in Chilalo. As a comprehensive project it is obviously able to promote the use of innovations more effectively than EPID/MPP. While it is not possible to draw very far reaching conclusions from the limited material in table 11, it may be suggested that CADU's experience may in the future hold true for comparable MPPAs.

The table on the following page shows the percentages of EPID credit programme participants in 1973 reporting to be owner/cultivators, part owners and part tenants, tenants and landlords respectively. The table indicates that the owner/cultivators predominate in all project areas, and that the number of participating landlords, i.e. farmers reporting to rent out land, is higher than the number of farmers renting all their farming land ⁽²⁾. This is, of course, a confirmation that at the early stage of the information diffusion process where EPID's project areas yet are (in several of the areas included in the table inputs were sold for the first time in 1973) the more affluent farmers are first to adopt the innovations made available.

(1) Jimma MPPA in 1973 had the highest volume of input sales of any MPPA in the country and, therefore, weighs heavily in the computation of the average for all 11 areas.

(2) Tewolde W/Michael, op. cit.

Table 12: 1973 Input Sales: Percentages Distributions of credit Buyers by Land Tenure¹ Status per Area-

Project Area	Owners	Owner/ Renters	Tenants	Landlords
Dejen	95.9	2.1	2.0	0.7
Fincks Selam	85.2	13.6	1.2	5.9
Gilgel Abay	93.8	5.9	0.3	2.5
Woreta	92.4	6.9	0.7	1.4
Kola Diba	88.1	11.0	0.9	1.7
E. Selassie	100.0	-	-	-
Mekele	85.9	14.1	-	9.0
Arum/Adwa	97.8	1.3	0.9	0.9
Adigrat	97.1	2.9	-	0.8
Adi Ugri	57.8	40.7	1.5	1.2
Woldia	81.1	17.8	1.1	6.3
D. Berhan	57.2	41.4	1.4	6.4
Chancho	77.6	8.1	14.3	8.2
Holletta	86.0	10.0	4.0	2.5
Ambo	77.5	12.7	9.8	0.0
Buta Jira	72.6	15.1	12.3	4.8
Nazareth	62.5	14.9	22.6	33.0
Tulu Bollo	79.9	15.3	4.8	0.8
Wolkite	85.9	9.0	5.1	7.0
Adaba	73.6	16.7	9.7	7.3
Bedessa	69.6	7.2	23.2	40.6
Kersa	91.7	6.3	2.0	0.3
Chencha	98.9	1.1	-	0.0
Assendabo	92.6	5.3	2.1	18.0
Jimma	93.7	2.5	3.8	2.6
Bako	67.1	7.0	25.9	3.5
Digga	67.4	18.8	13.8	4.4
Ghimbi	82.8	3.0	14.2	6.1
All areas	84.6	10.5	4.9	5.9

^{1/} The percentages of owners also include landlords. The figures in the first three columns add up to 100 per cent.

Another confirmation is given by the following aggregate data on land use by EPID credit programme participants in 1973⁽¹⁾.

Area cultivated per farmer	4.40 ha
Area under pasture per farmer	<u>2.77</u> ha
Area at disposal per farmer	7.17 ha

These figures are weighed averages for participants in all EPID field areas in 1973. Tables 13 and 14 illustrate the size of holding of farmers purchasing inputs in 1973. It is seen that 88.8% of the farmers cultivated ten hectares or less, 57.4% five hectares or less⁽²⁾.

Similar data for all farmers in these areas, i.e. regardless of whether they purchased inputs from EPID or not, are not available. However, it is certain that these weighed averages are higher than the corresponding figures for all farmers in these areas would be, perhaps by as much as 100%. While EPID in 1973 can claim to have reached small farmers in its field areas with innovations, it cannot yet claim to have reached the smallest farmers as the statement in its Plan of Operation postulates.

It is hardly possible to draw any far reaching conclusions on the basis of the material available to date with regard to EPID's stated goal of involving the poorest farmers and the tenants in its activities. In those areas where land tenure conditions are comparable to those of Chilalo EPID has had rather less impact than CADU, but this is hardly surprising as CADU is a comprehensive project working with more parameters than EPID/MPP. It is neither very surprising that EPID to date has not been able to involve a significant fraction of the poorest farmers in its activities, since these would be expected to be slow to adopt innovations. There would appear to be nothing in the available data to suggest

(1) Ibid

(2) Ibid

Information is given by the following categories in descending order of credit programme participation in 1973

Table 13: 1973 Credit sales: Size of holding and Land Use of Farming Farmers per MFP area (Hectares)

Project Area	Area Under Cultivation	Area Under Pasture	Area at Disposal
Dejaj	6.42	0.19	3.71
Fancle Selaw	4.48	0.75	5.23
Gilgel Abay	5.07	0.52	5.59
Woreta	5.00	0.49	5.49
Wola Diba	5.95	0.74	6.69
B. Selassie	(1)	(1)	5.85
Ikhele	6.91	0.08	6.99
Arum/Adwa	4.13	0.23	4.36
Adigat	2.65	0.35	3.00
Adi Ugri	4.73		4.73
Waldia	6.21	0.34	7.15
Chachho	5.84	0.32	6.16
Holetta	4.45	4.24	8.79
Arbe	6.07	3.32	9.39
Arbe	7.22	3.79	11.01
Duta Jira	5.74	4.69	10.43
Nazareth	6.67	1.55	8.31
Tulu Belesa	6.37	1.60	7.97
Wolkite	4.56	4.93	9.49
Adaba	5.85	6.94	12.79
Bedessa	6.29	1.04	7.33
Kersa	3.64	0.02	3.66
Chencha	2.29	0.56	2.85
Assengabo	3.90	7.01	10.91
Jirna	2.38	2.09	4.47
Bako	3.33	3.46	6.79
Dagga	3.27	6.12	9.39
Ghinda	2.17	5.06	7.23
All areas (weighted average)	4.40	2.77	7.17

1) Information not available

Table 14: 1973 Credit Sales: Percentage Distributions per MPP Area of Buying Farmers by Size of Area Cultivated

	Area Cultivated (Hectares)						
	0-1	1.1-3	3.1-5	5.1-10	10.1-15	15.1-20	20.1
Dejen	0.7	8.2	4.1	57.8	27.2	1.4	0.6
Finote Selam	0.8	24.4	18.1	45.7	10.2	0.8	-
Gilgel Abay	-	12.2	29.2	52.7	4.5	1.4	-
Woretta	-	13.1	40.0	43.8	5.1	-	-
Kola Diba	-	12.0	24.8	53.0	8.6	0.9	0.9
E. Selassie	2.6	11.9	40.8	27.0	8.5	6.6	2.5
Makele	-	11.8	18.4	43.4	19.7	6.6	-
Axum	0.4	35.3	30.2	27.1	6.3	0.4	0.4
Adigrat	3.1	68.4	21.1	6.6	0.9	-	-
Adi Ugri	1.0	16.7	41.4	37.5	2.9	0.3	0.3
Woldia	-	5.6	16.8	50.0	20.3	5.9	1.4
D. Berhan	1.9	32.1	32.1	40.6	19.8	1.9	3.8
Chanchoom	4.0	52.0	8.0	20.0	14.0	-	2.0
Holleta	-	20.6	25.2	32.6	13.4	5.3	2.8
Ambo	-	2.9	4.3	52.5	14.4	23.9	2.4
Buta Jira	-	15.2	31.2	42.8	9.4	1.5	-
Nazareth	-	6.0	19.7	60.4	9.8	4.2	-
Tullu Bollo	-	20.9	13.6	44.7	11.9	6.8	2.2
Wolkite	1.2	24.2	41.3	28.2	4.8	-	0.4
Adaba	-	21.3	20.2	41.5	9.8	4.3	2.9
Bedessa	-	34.8	21.7	34.8	4.4	-	4.4
Kersa	0.3	26.6	55.0	16.7	1.0	-	0.3
Chencha	2.6	62.5	25.7	7.9	0.7	0.7	-
Assendabo	0.8	36.9	36.9	20.4	4.3	0.6	0.2
Jimma	2.9	74.6	14.4	7.2	0.9	-	-
Bako	-	59.7	18.9	16.7	4.2	0.7	-
Digga	-	60.1	26.8	11.6	1.5	-	-
Ghimbi	25.0	56.3	15.6	3.1	-	-	-
All Areas	1.2	30.0	26.2	31.4	7.5	2.8	0.9
All areas (cumulative)	1.2	31.2	57.4	88.8	96.3	99.1	100.0

that EPID could not, in the future, be able to achieve a satisfactory rate of participation by such farmers. It is a different matter that the present land tenure conditions in the country, if left unchanged, probably always would preclude tenant farmers from adopting inputs in the same proportions as owner/cultivators.

1.7.4 Improvement of Methods for Bringing about Agricultural Development in Ethiopia

This goal is included also in CADU's goal structure. Yet it has never been specified nor have any indicators for measuring its achievement by the projects ever been suggested. An analysis of EPID's fulfilment of this goal would, therefore, have to be somewhat unstructured and ad hoc.

In the widest sense the method for agricultural development promoted by EPID, the minimum package approach, has already, in the short term, been successful. Based on this approach EPID has established a viable, nation wide organization, and the farmers have been responding in increasing numbers to the work carried out by this organization. IEG has adopted the minimum package approach as its main vehicle for rural development during the Fourth Five Year Plan. MPP has been carefully appraised by IBRD/IDA and found promising. Several donor agencies have found EPID well worthy of support.

On the other hand, it would yet be premature to draw the conclusion that this method will be equally successful in the longer term. There remain several unresolved issues which may contribute to making or breaking the project and making it considerably less successful than now anticipated. These issues may all be termed the basic assumptions underlying the present design of MPP; should one or more of these assumptions prove unfounded EPID will become considerably less successful than intended and evisaged:

- Land tenancy legislation will be implemented within the relatively near future. Enough has already been said to make the point that this is essential if EPID is to be able to involve all categories of farmers in its activities in the same proportions as they are represented in the Ethiopian countryside. It has also been said that the immediate prospects of such legislation do not appear promising.

- The formation of viable co-operative societies will proceed as planned. This is the instrument whereby it is envisaged to eventually transfer the responsibility for major parts of present programme activities from EPID and hence IEG to the project area populations. If this assumption fails and formation of co-operative societies in rural Ethiopia does not appear a realistic prospect, the entire MPP strategy will require major alterations.

- Construction of rural roads will be effective and greatly expand MPP coverage. In the absence of a significant rural roads programme EPID will never reach more than a small portion of Ethiopia's farming population. While the IBRD/IDA loan includes funds for this purpose, there have yet been few institutional and other arrangements made to prepare for a nation-wide rural roads programme.

- Effective grain marketing arrangements will be implemented to strengthen existing institutions and policies. The farmer in the Ethiopian countryside probably perceives the need for price stabilization and improved marketing efficiency more strongly than the need for fertilizer and other improved inputs. While EPID is planning initiatives in the field of grain marketing, such initiatives must tie in with a national policy for grain marketing and storage to be fully effective. Failing such a policy and its implementation EPID will remain but an incomplete step toward rural development in Ethiopia.

- 77.
- Qualified personnel will be forthcoming at a rate commensurate to EPID's planned expansion. Today there is a severe shortage of certain personnel categories, which must be remedied in the future if the programme is to remain fully effective.

If any of these basic assumptions remains unfulfilled at the end of the current IBRD/IDA loan to EPID (1976), the minimum package approach as a method for rural development in Ethiopia will have been less successful than possible. If they all remain partly or wholly unfulfilled this approach, as presently conceived, may be considered inadequate as the major vehicle for rural development in Ethiopia.

Current plans point at a fulfilment of all of these assumptions. While it is evident that these plans for a great variety of reasons may never be fully achieved, they have been developed in the light of the best information available today. The issue here is not to discuss the likelihood of achievement of these plans but rather to stress some of the fundamental and yet not fully clarified aspects underlying the current design of the minimum package approach to rural development in Ethiopia.

EPID is, of course, also developing methods for agricultural development on the more basic activity level. Most of the innovations, techniques and approaches applied by EPID in MPP have previously been developed by the comprehensive package projects and have been tested and found practical by them. However, it is obvious that an innovation introduced successfully e.g. in Chilalo may not always receive wide replicability outside this awraja. Since the costly comprehensive package programmes should be viewed from a national perspective, it may be argued that their contributions to overall agricultural development in Ethiopia should be assessed in the light of the number of innovations of nationwide replicability that they have been able to develop.

At date EPID has relied mainly on experiences from CADU in the design of its extension activities, and there has been found to be little reason to make any basic changes with regard to its agricultural extension programme. The concept of relatively well qualified (two years of post secondary school training) agricultural extension agents each covering an area of approximately 2,000 farmers and working with model farmers, a trial field and demonstration plots on farmers' fields was developed by CADU and has been found workable in most EPID field areas.

On the other hand, EPID should leave room for more experimental approaches in its agricultural extension work. While it should be recognized that the project has not yet had much capacity for experimenting with alternative designs due to its rapid rate of expansion, EPID should endeavour to study more intently, e.g. the approach applied by the Soradep Project around Awassa. This approach involves the use of demonstrators rather than qualified extension agents for dissemination of innovations, a demonstrator being a young man with some schooling living within an area of 50 - 100 other farm households who has been given a course in improved farming techniques by the project and who receives a small salary in remuneration for his efforts.

There are other fields where CADU and the other comprehensive package projects have either done little work or done work that may not be replicated outside their projects areas. One such field is drainage and soil management where EPID is being forced to do its own experimentation to develop methods applicable by small farmers. Another is seed multiplication where EPID following the completion in 1972 of a comprehensive feasibility study will adopt a previously untested method of village level seed production involving contract seed production within EPID field areas. In the field of animal husbandry CADU has performed much valuable work on the breeding side leading to a rapidly increasing demand by farmers for cross-bred cattle and sheep in Chilalo.

CADU's animal husbandry extension work has been mainly geared towards the care and maintenance of these upgraded animals.

However, it is not a realistic prospect yet for EPID to sell cross-bred cattle and sheep to farmers in the manner that CADU has developed. EPID has, therefore, found few animal husbandry extension methods developed by CADU fully relevant to its current plans of work and is, therefore, obliged to evolve its own extension methods in this field.

In the field of home economics the experiences gained to date by CADU and the other comprehensive package projects have been largely rejected by EPID. A policy guideline prepared for EPID in early 1974 suggests that unless home economics extension agents and supervisors are upgraded to the same level as agricultural extension agents with regard to formal training and overall status in the field organization, the impact of home economics extension programmes will be low⁽¹⁾.

EPID will, therefore, embark on a training programme intended to generate extension staff in home economics with the same qualifications as the present agricultural extension personnel.

Also in the field of marketing and co-operative formation EPID has formulated its own policy guideline that, albeit making much use of experiences from CADU, is not modeled on any particular existing project in Ethiopia but designed to meet the specific requirements of EPID/MPP.

With regard to the construction of feeder roads and farm-to-market roads it is likely that EPID will rely more heavily on the experiences of WADU than on those of CADU, as the feeder roads built by CADU tend to have a high unit cost.

EPID and CADU co-operate closely with regard to the training of staff and participate jointly in the operations of the training centre at Asella. In addition, EPID is heavily dependent on the output of graduates from the College of Agriculture at Alemaya, the agricultural institutes at Jimma and Ambo, and the training institutions at Bako and Awassa.

(1) EPID Publication No. 18.

In promoting the use and expansion of all these training institutions EPID makes a considerable contribution to the development of methods for the training of qualified personnel in the field of agriculture in Ethiopia.

In each of the fields discussed above methodology for application to small farmer development in Ethiopia is gradually being elaborated and tested. Each of these fields will in due course require a separate evaluation with a view to determining its viability with regard to possibilities for nation-wide replication, benefit/cost aspects, technology, etc. Since EPID to date has been engaged almost exclusively in the promotion of fertilizer use in its field areas, few of these methods have yet been applied in practice, and none should yet be subjected to an extensive evaluation.

The foregoing discussion has shown that it is yet premature to endeavour to provide a conclusive assessment of MPP as a whole as a viable method for rural development in Ethiopia as well as of the various programmes and activities to be applied within MPP. At the present time it may only be asserted that EPID appears to be well on its way toward providing an alternative for small farmer development in Ethiopia, provided that a number of basic assumptions underlying the design of MPP prove realistic. The project is in the process of developing a number of tools for application within MPP that yet remain to be fully tested but that seem to hold promise for the future.

1.7.5 Creation of Possibilities for a Continuous Expansion of the Effort

In EPID's Plan of Operation this goal is formulated as follows:

The third main goal shall be the creation of possibilities for a continuous expansion of the effort. This implies, i.a. the creation of financial resources through 1) an increase in the tax-paying ability of the population, 2) training of staff and 3) relevant findings from applied research.

The first element of this goal thus entails a strengthening of the financial ability of IEG to continue the expansion of MPP through an increase in the tax-paying ability of the target population and raised revenues from taxation in EPID

field areas. It is then necessary to consider the following chain of assumptions:

1. If EPID has had an impact with regard to its first main goal, then the tax-paying ability of the target population has been increased.
2. If the tax-paying ability of the target population has been increased, then revenues to IEG from taxation have been raised.
3. If revenues to IEG from taxation have been raised, then such incremental revenues will be allocated by IEG for an expansion of MPP.
4. If MPP is to expand further in the future, then such incremental revenues are required.

As has been shown above (1), EPID has made good progress towards achieving its first main goal of improving the standard of living of the target population. It is obvious that every farm household benefiting from an income increase will also have had its tax-paying ability enhanced, however marginally. On the other hand, EPID has not yet had sufficient impact in any but a few MPPAs to be able to have had any significant effects on the overall tax-paying ability of the population in these areas.

However, it would appear highly doubtful that the second assumption is correct. Table 15 on the following page illustrates assessments and collections of land tax and agricultural income tax from Chilalo awraja through the 1970/71 budget year.

(1) See Sections 1.3 and 1.7.1 above.

Table 15: Tax Collections in Chilalo Awraja, 1967/68-1970/71

	Year			
	1967/68	1968/69	1969/70	1970/71
<u>Assessments</u>				
Land tax ¹	542,400	561,315	555,377	553,961
Agricultural income tax	903,442	903,442	785,771	803,303
T o t a l	1,445,842	1,464,757	1,341,148	1,357,264
<u>Collections</u>				
Land tax ¹	478,815	431,103	494,349	471,941
Agricultural income tax	715,962	343,538	660,149	658,159
Total	1,194,777	774,641	1,154,498	1,130,100

¹Includes education tax and health tax.

Source: Ministry of Finance, Agricultural Tax Department.

Until the 1970/71 budget year there had been in Chilalo three fertilizer distribution seasons (1968, 1969 and 1970), i.e. as much as in the oldest of the present EPID field areas. If anything, CADU had probably more impact in the area around Asella by 1970 than EPID has had in almost any MPPA today. Yet the table shows that neither assessments nor collections of taxes in Chilalo were higher in 1970/71 than they were before CADU started in 1967/68. Comparable data from EPID field areas are not readily available, but it would, ceteribus paribus, appear unlikely that they would present a different picture than those from Chilalo.

It is obvious that the third assumption is somewhat far fetched. IEG could hardly earmark certain tax revenues from certain areas for certain purposes⁽¹⁾. Should new budgetary priorities

(1) The awraja self government proposal would entail a change in this regard. However, it would not appear likely that this proposal will ever proceed far beyond its present pilot status.

emerge, IEG could hardly be blamed for allocating incremental revenues to them rather than to expand already ongoing projects. The improvement in the IEG financial ability to continue the expansion of MPP would appear to be, at best, theoretical rather than practical.

Ethiopia is a poor developing country, and IEG funds are in limited supply. However, to date the availability of such funds has not been any constraint on the expansion of MPP. While the overall level of IEG expenditures on MPP will increase at a rate commensurate to the expansion of MPP, it would appear that this rate will not greatly exceed the overall growth of IEG revenues.

In any case, such revenues are for the overwhelming part generated outside the agricultural sector. In 1969/70 total IEG revenues were Eth.\$565.4 million of which only Eth.\$19.5 million, or three per cent, was directly derived from agriculture. Indirect taxes, customs duties and special revenues together accounted for Eth.\$457.3 million, while direct taxation, with which the rural population is more associated, accounted for only Eth.\$102.3 million⁽¹⁾. While this somewhat underestimates the earnings from the agricultural sector in the form of export taxes on e.g. coffee, it is evident that the agricultural sector in relation to its share of the population or its contribution to GNP makes a very small contribution to IEG tax revenues.

This is not the place for an exhaustive discussion of the Ethiopian taxation system. It will suffice to say that the system is notoriously inefficient, corrupt and biased in favour of the better-off. The land tax provisions were established in 1944 and the rates of tax have remained unchanged for 30 years despite the financial needs of rural development. Any meaningful reforms would be difficult to implement, because the taxation system is so closely related to the prevailing system of government and to the land tenure system within which it exists. As in the field of land reform, and for basically the same reasons, IEG has not taken any initiatives in the field of taxation during the project period.

(1) Cohen, John M., op. cit. p. 76.

It must be considered highly denatable whether it could at all have been realistic to relate EPID impact to increased tax revenues to IEG, given the state of the taxation system already at the outset of EPID. In order to be able to achieve such a relationship it would be necessary (a) for the IEG to make some major policy decisions, and (b) far-reaching projects to be initiated with external assistance, in the field of tax administration, and neither of these prerequisites has been forthcoming during the project period.

The second element of the third main goal relates to the provision of "well trained staff". It would appear that this would follow automatically from the expansion of the project. For each additional year EPID exposes increasing numbers of trained Ethiopian personnel to modern agricultural extension techniques and provides them with on-the-job training. It is not EPID's task to function as a training institution per se, although it is in co-operation with CADU operating a training centre in Asella, but the project is the largest single employer of manpower in the agricultural sector in Ethiopia.

With regard to training of staff the project's main responsibility thus lies on the in-service, informal rather than on preservice, formal training. In-service training within EPID is provided by

- a. on-the-job training by expatriate advisers,
- b. special and regular training courses and seminars,
- c. study tours and formal training abroad.

Most of the expatriate advisers provided to EPID work as "OPAS" advisers, i.e. they not only serve as advisers but also participate actively in the operational tasks of the project with the same functions as Ethiopian personnel in

their positions would have⁽¹⁾. Almost all of them at present work out of EPID Headquarters and participate in the management and supervision of the project's various activities.

It is, of course, the intention that every expatriate adviser should have a counterpart who should eventually take over his duties, and most of them do have counterparts. However, due to the operational nature of their duties and to the relative shortage of well qualified manpower at EPID Headquarters (see Section 1.5 above), many of the expatriate specialists find that they have to devote their entire attention to the task immediately ahead leaving little time for more active counterpart training. In many cases, therefore, the on-the-job training of counterparts becomes more indirect with the expatriate himself discharging the work load one or more steps ahead of his counterpart. It is suggested that the large work load at EPID Headquarters and the operational assignments of the expatriates working there have contributed to making the on-the-job training somewhat less effective than desirable.

In-service training courses for virtually all staff at EPID Headquarters and in the field are arranged annually, and funds for this purpose are budgeted each year. These courses also serve the useful purpose of creating regular forums for discussions between staff from Headquarters and the field also of matters related to employment conditions etc, about which the field staff may feel, not always without justification, that they have difficulties in communicating with Headquarters. These in-service training courses may be either annually recurring or of a special nature dealing with specific problem areas. EPID's current emphasis on in-service training courses must be termed commendable.

(1) The expatriate specialists assigned by FAO are formally an exception in this regard, as they are not appointed on OPAS contracts, but in practice there is little difference between their work and that of other expatriates serving with EPID.

However, the project has not yet developed a system of longer in-service training within Ethiopia at either the Haile Selassie I University or any other suitable training institution, where promising staff could be offered additional formal training and raise their qualifications. The introduction of such a system is currently under discussion.

To date EPID has from its own budget financed little training abroad, the major exceptions being selected study tours for mostly senior Ethiopian staff. It is not believed that the impact of these study tours has been particularly high.

In summary, EPID is endeavouring to continuously train and upgrade its Ethiopian staff with a view to enabling them to assume increasing responsibilities for the conduct of the project. Possibly the greatest contribution the project is making to laying the foundation of rural development in Ethiopia in the future with regard to manpower is simply to exist as the single largest employer of manpower trained in the field of agriculture and to provide to its employees a progressive, development oriented and modern working environment.

With regard to the nation-wide replication of research findings, it should at once be stated that EPID itself conducts very little applied research. Its very task is to disseminate research findings developed by the comprehensive projects, IAR and other institutions and, in so doing, it co-operates closely with these institutions. EPID does not "provide research findings" on its own but it participates in guiding those who do. All the innovations made available to farmers in EPID field areas have previously been developed through applied research in Ethiopia. EPID's closest involvement in applied research is the contracting it did in 1974 for IAR to implement a research programme on seven sites, each comprising a five hectare field, scattered throughout the country.

The concluding note may be made to this section that EPID's third main goal, as it is stated in the Plan of Operation, is vague, poorly specified and, to some extent, unrealistic. It appears to have been added almost as an afterthought. It is very difficult to find any indicators against which the achievement of this goal may be measured, and the Plan of Operation provides no guidelines in that regard. If achievement against this goal, as it is officially stated, cannot be measured, then it must be questioned whether the goal is meaningful.

.../88

Part 2: OBJECTIVES AND POLICIES FOR THE FUTURE

2.1. The Minimum Package Concept

The package approach to agricultural development implies a co-ordinated attack on the factors hindering development within a limited geographical area. This means that several of these factors must be tackled at the same time within the auspices of a carefully designed and co-ordinated programme of interrelated activities.

The comprehensive package projects launched this concept in Ethiopia with the establishment of CADU in 1967.

Later WADU and also ADDP were initiated, still others will be started elsewhere in the country. These projects are almost fully self-contained in the sense that they encompass virtually all the programmes and activities necessary to promote agricultural development within their respective areas. Thus CADU works in the fields of crop research, research of animal feeding and breeding methods, implements research, agricultural extension, home economics extension, co-operative promotion, marketing of inputs and of outputs, provision of credit, forestry extension, veterinary services, road construction, provision of rural water supplies. In addition, the project operates extensive facilities for cattle breeding, seed multiplication, production forestry, house construction, implements production, training of staff, and some of these facilities are operated on commercial or quasi-commercial principles.

It was soon recognized that while CADU and the other comprehensive projects appear to be good investments, they do not in their original form offer an alternative for rural development throughout Ethiopia. They are too costly in terms of project cost per farmer/beneficiary and of manpower requirements to achieve nation-wide replication.

Therefore, the minimum package concept was developed in 1970⁽¹⁾. This implies the transfer of "the benefits of development to large numbers of people at minimum cost by employing the methods and innovations developed and tested in the comprehensive projects"⁽²⁾. Those features of the comprehensive projects considered most essential to achieve small farmers development were extracted and combined into a "minimum package" of agricultural services, which was beginning to be provided to farmers throughout Ethiopia with the establishment of EPID in 1971.

Since its establishment EPID has almost exclusively focused on the provision of agricultural extension services and sale of inputs on credit and on cash. The inputs made available for sale to farmers have mainly been fertilizers, although minor quantities of seed have also been sold. Work in the fields of animal husbandry extension and home economics extension has been initiated on a pilot basis only during the 1973/74 budget year. A co-operative promotion programme has also been initiated in that year. While plans have been made for an expansion of the work in marketing, seed multiplication and other fields, little of this has yet materialized.

During EPID Phase II it may be envisaged that the scope of the minimum package provided by EPID will gradually expand and that the past and present differences between comprehensive and minimum package in important respects will disappear. As farmers in EPID's field areas become accustomed to the presence of EPID's field agents and to the fertilizers and seeds they can obtain through them, they will gradually become more receptive to other innovations also. As EPID's experience and managerial ability grows, the project will find itself in an improving position to provide a wider range of services to farmers.

(1) EPID Publication No. 1: A Master Plan for the Extension and Project Implementation Department. Addis Ababa, October 1970.

(2) EPID Publication No. 6, p.5.

During its Phase II EPID will have the following components:

- i. an agricultural extension package;
- ii. a co-operative marketing package;
- iii. supporting services.

i. Agricultural extension package. Provision of agricultural extension services to small farmers will remain EPID's foremost function also during Phase II. EPID must endeavour to improve upon the innovations already introduced and also to widen the scope of the services it can provide.

There should be a more flexible approach in the design of EPID's agricultural extension package in an area, and the services provided by the project should be adapted as closely as possible to the general characteristics and farming conditions of the area.

With this in view the approach to launching new field areas will gradually be changed. As EPID's coverage expands over the country the need for the present observation phase is likely to diminish. Instead EPID will launch intensive surveys of new areas conducted by specialists from the Extension Division and the Planning, Evaluation & Liaison Division at Headquarters and by the regional co-ordinators. A methodology should be developed for such surveys enabling them to become as standardized as possible. On the basis of such surveys it should be decided which activities EPID should emphasize in new areas. The demonstration phase may then be launched at the outset.

The first priority within the agricultural extension programme will remain the development and provision of improved agricultural inputs, since EPID's main objective remains to raise the productivity of small scale farming throughout the country. While some considerable progress was made during EPID Phase I with regard to the distribution of improved inputs, a wider range of such inputs should be developed together with application recommendations that are less standardized than in the past taking into account the distinct features of each area.

Fertilizers will remain the input of dominating importance. During EPID Phase I a considerable demand for fertilizers has been created in EPID field areas, and it will be necessary to sustain this demand and further extend it into new areas. Due to its normally very favourable benefit/cost ratio and ease of applicability, fertilizers will be the main innovation leading the way for the subsequent introduction of other innovations. However, in the future the heavy reliance upon DAP and Urea is likely to be abandoned gradually in favour of a wider range of fertilizers better adapted to the varying conditions in different field areas.

Great priority will be given to an expanded introduction of improved seed varieties, and sale of improved seed to farmers will have to assume a much greater role than during Phase I. By the end of Phase II locally produced improved seed should be available for sale to farmers in all MPPAs. Seed cleaning facilities will be available both in the form of large, mechanized units placed on a regional basis and small, hand operated units located close to the marketing centres.

The largest volumes of improved seed will continue to consist of cereals: wheat, maize, teff and sorghum. However, EPID must endeavour to make available to farmers seed also for other suitable cash crops and thus promote improved crop diversification and rotation.

In this respect one cannot overemphasize the need for the development of improved varieties of seed by the experiment stations. The IAR/EPID co-operative research programmes are expected to be instrumental in this venture.

Improved agricultural implements represent another important category of inputs that should be increasingly emphasized by EPID. The project should have a range of implements available for sale to farmers covering all major work processes on the farm. To the extent possible experiments should be made with different types of implements in different parts of the country with a view to developing prototypes that are well adapted to varying types of soils and farming conditions.

EPID's work in crop protection should enable, in the first instance, participating farmers, i.e. those farmers purchasing improved inputs, to protect their crops from pests and disease. Herbicides and pesticides should be available together with simple application equipment for sale to farmers in all field areas. Emergency stocks of chemicals should be built up and distributed over the country in order to enable large sudden outbreaks of pests to be effectively controlled. The maintenance of a crop protection service for the farmers will be a permanent feature of EPID, and the chemicals will be sold to farmers on credit and cash as other inputs.

The provision of soil and water conservation measures throughout the country is becoming increasingly urgent, as has been shown by the recent droughts and ensuing famine and by the growing pressure on the land by man and beast. Programmes for construction of dams, ponds, and stream diversions conducted as communal efforts as well as methods for terracing, drainage, contour ploughing etc. for use on individual farmers' fields must be given an increasing emphasis, particularly in those parts of the country where shortage of surface water is a major problem in agriculture and where soil erosion threatens to reduce the benefits of available holdings. As appropriate, food for work programmes and other incentives may be used to induce farmers to participate in communal projects. This is also likely to become a permanent feature of EPID, and the project must therefore develop the expertise to plan, organize and implement the large, labour intensive projects that will be necessary for this purpose.

Forestry extension may gradually become incorporated into EPID's agricultural extension work with specially designated forestry agents providing farmers with tree seedlings and advice on how to plant and manage them. This field is, of course, related to soil and water conservation and assumes an increasing importance with the rapidly decreasing timber supply in the country. EPID may need to experiment in long term credit to convert farms on very steep slopes into forests.

Animal husbandry work will be another integral part of EPID's package of extension services. The emphasis of this work will be on those field areas where animal husbandry activities account for a major or dominant part of farmers' income. In these areas upgraded breeding bulls and rams will be available for farmers. Techniques for improved management of animals will be disseminated. EPID will maintain a close link with the veterinary service and, as appropriate, assist in the provision of veterinary services in EPID field areas. Through the co-operative societies operated with the support of EPID farmers will have outlets for cattle on the hoof as well as animal products like milk, butter, hides, eggs etc. Farmers will be encouraged to include fodder crops in the rotation cycle.

Beekeeping will become part of the agricultural extension package in those areas where beekeeping traditionally is a major source of cash income to small farmers. Also in this case the co-operative societies would provide marketing outlets for the produce.

The home economics extension programme will also be fully integrated into the agricultural extension package in accordance with the plans already designed⁽¹⁾. The home economics extension agents will gradually be upgraded until each field area, where home economics extension work is carried out, has agents with two years of post-secondary school training or qualifications similar to those of the agricultural extension agents. This programme will enhance the self-sufficiency of the farm household by enabling it to produce its own garden crops and improving its functions as a rational consumption unit. It will contribute to involving rural women more in the development process and raising their awareness of their role in this process. The programme may be linked to local functional literacy campaigns sponsored by other agencies than EPID. To the extent possible the home economics extension agents should work in the field alongside the agricultural extension agents, and their work should be mutually complementary.

(1) EPID Publication No. 18 .

ii. Co-operative marketing package. A new feature of EPID during its Phase II will be the project's establishment of a structure for co-operative marketing in the EPID field areas. To this end the co-operative promotion programme will be greatly expanded during Phase II. With the goal of eventually establishing one primary co-operative society around each present marketing centre, co-operative promotion will be actively pursued in all field areas. The emphasis of this work will be on imparting the co-operative principles to the farmer/members in the primary societies and on the continuous training of key functionaries in simple methods of management and accounting. By the end of EPID Phase II new primary societies should be established at a rate of about 50 per annum, i.e. at a rate corresponding to the expansion of EPID as a whole.

The primary societies will operate within the framework of the Co-operative Marketing Division established at EPID Headquarters and serving as a co-operative apex organization. On a regional basis there will be secondary co-operative societies or unions providing current guidance and support for the primary societies.

Marketing of both agricultural inputs and outputs will be the principal means for the co-operative societies to gain revenues and provide the primary incentive for making farmers join the societies. In the field of input marketing the societies will gradually assume the responsibility for the input sales work currently carried out directly by EPID. In output marketing the societies will primarily act as purchasing agents for the national grain marketing organization to be reconstructed during the EPID Phase II period with IBRD/IDA assistance. To facilitate the marketing work storage facilities will be provided to the primary societies in EPID field areas, and a small fleet of trucks will be available on a central basis with the Co-operative Marketing Division.

In those areas where no viable co-operative societies have been established EPID will continue to operate marketing

centres to make inputs available to farmers. In some marketing centres operated directly by EPID purchasing of grains from farmers for the national grain marketing organization may also be undertaken, provided that finance for such operation is provided by this organization.

As the input marketing operation gains momentum and volumes reaching perhaps 30-40,000 tons of fertilizers are demanded by farmers in EPID field areas, consideration should be given to introducing the private trade in the distribution and sale of inputs to small farmers. This would apply particularly to areas where co-operative formation shows scant progress, but where EPID's extension and demonstration work has been under way for some time.

iii. Supporting services. As EPID expands throughout the country it will be necessary to strengthen a number of services supporting the work in the field areas. The foreseen rate of expansion will only be possible if these services have a capacity dimensioned to cater for as large an organization as EPID is expected to be during its Phase II.

The administration function at Headquarters will be given increased resources primarily in the form of manpower experienced in the administrative tasks of organizations similar to EPID. While it is foreseen to decentralize to the regional level much of the present accounting work related to the marketing programme, a considerable strengthening of this function will be necessary. An efficient cost accounting system should be introduced enabling rapid budget follow-up and effective cost control throughout EPID; cost accounting will also be a prerequisite for cost computations in the marketing programme. Procurement of equipment and supplies will be common for all EPID, i.e. include the comprehensive projects, for all those commodities which may more profitably be purchased in larger quantities.

As part of its supporting services the project will develop a facility for production of information materials and audio-visual aids to be used in the extension programmes. This facility should also promote the use of the information media, i.e. radio and also television, for the purpose of informing and educating farmers.

Another supporting service in the personnel function which will be considerably expanded as the project grows. Recruitment of personnel should increasingly be co-ordinated and executed for the needs of the comprehensive projects also.

EPID will have an increasingly strengthened planning and evaluation function, the main purposes of which will be to plan for new activities to be initiated within EPID itself and to evaluate past performance of the project. For the evaluation the main tools will be a short-term reporting system to collect current information from the field areas and a relatively limited number of programmed studies designed to assess project impact.

During EPID Phase II there will also be a continuing need for a liaison function maintaining the links between EPID Headquarters and the comprehensive projects. This function will gradually expand to include linkages also with other agencies of IEG and with the various donor agencies supporting EPID, and it should hence relieve EPID management of some of its present duties.

In the field there will be a gradual decentralization of EPID's work, as the regional offices under the co-ordinators will be strengthened and provided with their own subject matter specialists and common services staff. The secondary co-operative unions and the co-operative marketing network will be closely related to the co-ordinators' offices. Within the overall guidelines issued by EPID Headquarters these offices will increasingly be given freedom and flexibility in the design of EPID's field activities within their respective regions.

In the field of applied research it is not envisaged that EPID's direct involvement will expand much beyond its present scope. EPID will continue to rely on the comprehensive projects for developing and testing innovations. Its relationship with IAR will become more extensive and also more formalized with EPID on a regular basis relying on data from the research stations operated by IAR, and EPID will more frequently contract with IAR for the solution of specific problems. It will be incumbent on EPID to prevail on IAR and the comprehensive project to develop innovations suitable for dissemination to small farmers.

Increasing use will also be made of Haile Selassie I University in Addis Ababa and its Institute of Development Research for the conduct of soci-economic research on matters related to EPID work.

EPID will not engage itself in the production of agricultural implements and will normally contract commercially for such production. Neither will EPID engage itself directly in cattle breeding, and for supply of upgraded bulls and rams it will depend on CADU, the cattle farms of the Ministry of Agriculture and commercial sources.

In the field of training EPID will co-operate closely with the Education and Training Department of the Ministry of Agriculture. It will advise this Department of its manpower requirements, and it will expect that existing training institutions will be expanded to account for the needs of EPID. The project will continue to depend heavily for its manpower supply on the output of the College of Agriculture at Alemaya, the agricultural institutes at Jimma and Ambo (plans for a third such institute are currently under preparation), the community development training centre at Awassa, the institute operated by the Mekane Yesus Church at Bako. To complement these facilities EPID will expand, in co-operation with CADU, the agricultural school at Asella for the training of lower level personnel categories and for in-service training.

So-called farm training centres should be initiated at selected locations in different parts of the country, possibly along the lines of those operated by the Mekane Yesus Church for the training of assistant extension agents or demonstrators with a background of 6 - 8 years of schooling. Such centres may also be used for training of farmers, for instance model farmers and selected members of co-operative societies.

Feeder road construction will be carried out by a rural roads authority attached to IHA but working in close co-operation with and after directives provided by EPID. Funds for construction of such roads will be provided to EPID and made available to this authority. A substantial increase of the nation's feeder road network is a prerequisite for the expansion of EPID's field activities foreseen during Phase II, and EPID will therefore have to devote considerable attention to ensuring that this increase is brought about.

Where appropriate, agreements for the maintenance of such roads will be worked out by EPID and this authority in co-operation with local communities and co-operative societies.

It is not envisaged that EPID in any way will engage itself in activities related to public health, family planning etc., and neither is it anticipated that EPID will involve itself in commercial farming operations, the establishment of machinery stations, production forestry, fishing. EPID will not be directly involved in the provision of ground water in rural areas.

EPID's main target population will remain the small farmers in the Ethiopian countryside. In principle, the rule that farmers cultivating more than 20 hectares may not purchase inputs from the project or otherwise benefit from its services should be maintained. At the same time it should be recognized that the co-operative societies will

not be able to exclude individuals on the basis of their area cultivated, and that therefore other criteria may have to be evolved to ensure that a small group of farmers does not benefit inordinately from the project's marketing activities.

EPID will also remain focused on settled agriculture. It is not foreseen that it will be directly engaged in settlement programmes nor in the provision of services to nomads.

2.2 The Rate of Physical Expansion

At present there would seem to be several reasons for reducing EPID's rate of expansion. It has been argued in part 1 that EPID's managerial resources in the past have been stretched virtually to the limit, and a period of consolidation would therefore appear advisable. It was foreseen in EPID's original plans that a lack of rural roads would toward 1975/76 place a real constraint on EPID's possibilities for further expansion. In addition, the rapidly rising fertilizer prices create substantial problems for EPID to obtain this essential input raising the question whether farmers' demand for fertilizers should be allowed to continue to increase as in the last few years.

On the other hand, the political pressures on EPID to continue to expand are likely to grow successively stronger. The rising expectations in rural areas of Ethiopia may be anticipated to create an increasing demand for the project's services to expand to the extent that resources for funds and manpower permit.

It is not believed today that funds and manpower will constrain a continued expansion at the rate of ten additional MPPAs or 50 marketing centres/extension areas per annum. At such a rate of expansion the most acute bottleneck is likely to relate to EPID's managerial capability, and it is foreseen to request technical assistance throughout EPID Phase II to bolster this capability. As no other resource constraints may now be envisaged, it is believed that EPID

should plan for extending its activities and services to as many Ethiopian farmers as at all feasible.

EPID is, therefore, planning to expand its physical coverage at the rate of ten MPPAs per annum throughout Phase II. An exception is, however, made for the first year of Phase II or 1975. In this year only half the planned rate or five additional MPPAs are foreseen, since EPID due to its heavy engagement in the rehabilitation work in the drought affected areas of the country in 1974 expanded at twice the planned rate or 20 MPPAs.

Table 16 below illustrates EPID rate of physical expansion during Phase II. The table shows that the project would be able to reach almost one-fourth of the rural population of the nation by the end of the current decade.

Table 16: EPID Phase II, Planned Expansion of the

<u>Y e a r</u>	<u>MPPAs</u>	<u>Field Areas</u>	
		<u>Marketing centres (1)</u>	<u>Per cent of total farming pop. reached (2)</u>
1971 actual	9	112	5.6
1972 actual	18	154	7.5
1973 actual	28	207	9.9
1974 actual	48	347	16.1
1975 planned	53	375	17.0
1976 planned	63	425	18.8
1977 planned	73	475	20.5
1978 planned	83	525	22.1
1979 planned	93	575	23.6

(1) Including observation areas and demonstration areas.

(2) Computed on the assumptions that each marketing centre/extension area reaches 2,000 farm households, that there were in 1970 4 million farm households in Ethiopia, and that these increase at an annual rate of 2.5 per cent.

It would appear certain that this would be the maximum rate of expansion that EPID could sustain during its Phase II. Indeed, for EPID to develop at this rate it would be necessary that two basic assumptions be fulfilled:

- A) Construction of feeder roads and farm-to-market roads gains considerable momentum enabling EPID field areas to lie off the main highway arteries rather than, as at present, alongside these.
- B) Co-operative promotion succeeds in its task of forming new primary co-operative societies at the same rate as the project expands, i.e. some 50 new societies have to be established and embark on marketing activities each year.

Failing the first of these assumptions, there will not be physical room for EPID to continue to expand at the rate indicated in table 16. Failing the second assumption, there is unlikely to be resources for EPID to go on adding 50 new marketing centres each year. If farmers with time cannot assume part of the responsibility for the management and financing of EPID's present field operation, continued expansion of this operation is likely to proceed at a much slower rate than shown in the table.

It is evident that this rate of expansion also assumes continued assistance from IBRD/IDA and other donors as well as an ability of IEG to shoulder its financial responsibility for EPID which of necessity will increase as the project grows.

It is believed possible for EPID to locate the manpower resources required for a continued expansion at ten MPPAs per annum: this is the past rate of expansion and the training institutions will gradually increase their output.

2.3 Organizational Implications for the Future

Future organizational implications for EPID should not be treated in isolation from the organization of the rest of the Ministry of Agriculture. The situation that existed at the time of the establishment of EPID deserves a new look. It must be recalled that the decision to pursue a separate development policy for EPID was based on several considerations which could be classified as positive and negative experiences from on-going agricultural institutions.

On the negative side the following conditions prevailed. A Ministry of Agriculture organization that was compartmentalized and that was not oriented toward an integrated development effort of agriculture. The services that were rendered were too few and far apart. For example, a rudimentary extension service existed with no provision of other essential services as credit, inputs and improved farming methods. Animal husbandry services were limited and concentrated on animal health with little co-ordination with animal production. All the available limited services were, in turn, backed by inadequate capital and trained manpower resources. Even the provision of these limited services was hampered by a cumbersome and inefficient civil service administration. Bureaucracy in personnel and financial administration were unsurmountable bottlenecks. The existing organization and administrative structure was not suitable to absorb capital and technical personnel from foreign sources.

On the positive side the reasons for adopting a separate development policy for EPID were based on the experience of the comprehensive projects. The package project approach of CADU and to a certain extent WADU, and the impact these projects created in their respective areas were major considerations. The success of these projects was partially based on their relative independence from the regular and cumbersome civil service and budget administration in terms of recruitment of personnel and financial

management. The projects were also organized to absorb substantial injections of capital and personnel from abroad.

For these and other consideration separate development for EPID was advocated and adopted. It could be said that for reasons of expediency and quicker development results IEG and specifically the Ministry of Agriculture has chosen the easiest way out. Admittedly, the second alternative, namely that of re-organizing the Ministry to make it suitable to an EPID type programme, would have delayed the launching of the programme perhaps indefinitely. But in opting for the simpler alternative, there was a delay in taking the necessary action. This is not to say that today we are much removed from the situation that prevailed in 1971 when EPID was established. There is more urgency now to reconsider the problem and seek a solution.

In the initial stages EPID/MPP has been simple comprising mainly provision of credit and sale of inputs. However, in the future the programme will be increasing fast and include areas now being handled by other agencies, e.g. animal husbandry, soil and water conservation, forestry extension. Such an expansion could soon draw these agencies into an administrative conflict with EPID and cause wasteful duplication, unless certain policy decisions were made with regard to the organization of the Ministry of Agriculture.

In the last few years several attempts have been made to re-organize the Ministry of Agriculture. Some were partially implemented while others were never concluded. This was partly due to frequent change in the leadership of the Ministry and lack of follow-up.

In the absence of any clear policy directives from IEG with regard to the re-organization of the Ministry, the organizational place of EPID within the Ministry is for the purposes of this report treated in two stages, one short term and one long term.

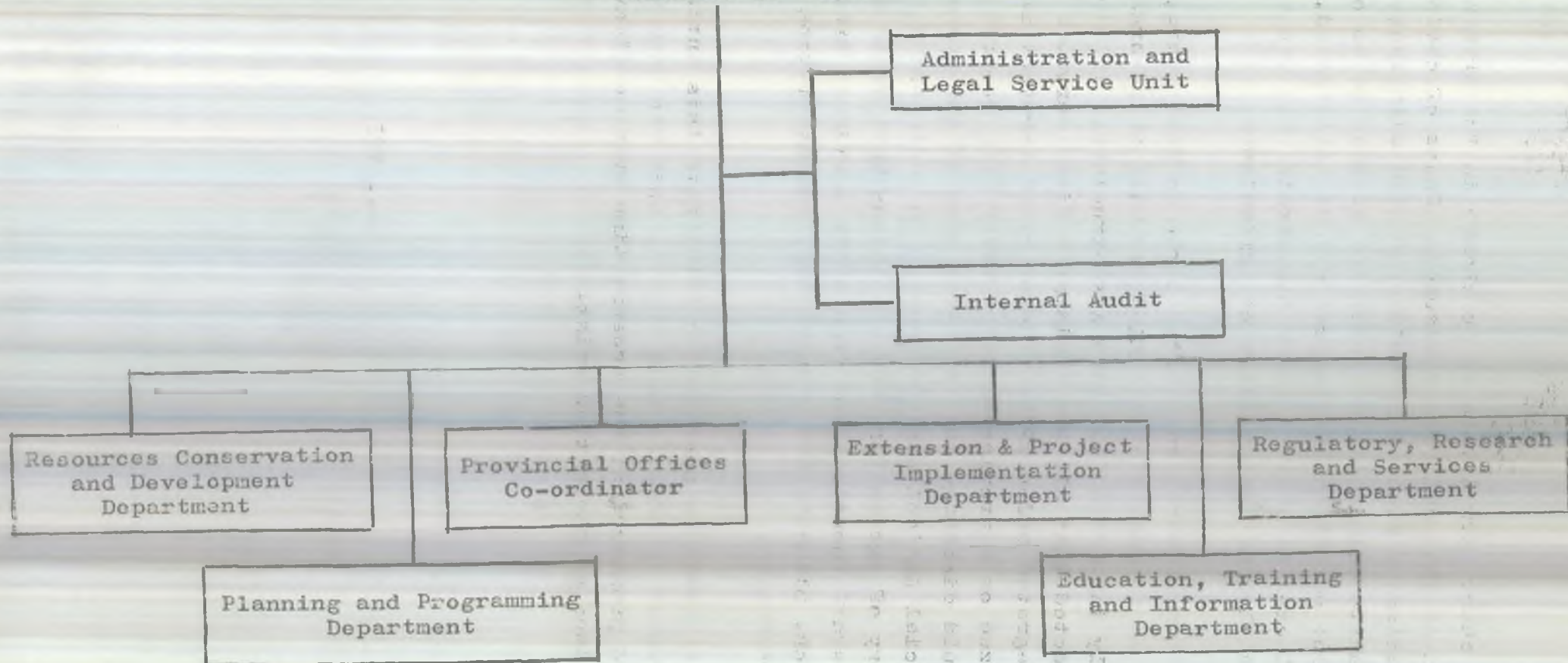
In the short term little or no change in the present organization of the Ministry is assumed. Cases of obvious duplication of present functions of EPID with those of other units within the Ministry are assumed to be eliminated, but no bolder initiatives may be anticipated. This is reflected in chart 1 which illustrates the present organization of the Ministry of Agriculture.

In the longer term, say, after three to four years, it should be assumed that the Ministry will be re-organized to fully integrate EPID into its structure. It may then be expected that all the Ministry's field services will be integrated under EPID. These field services would be organized on a provincial level under EPID co-ordinators who would discharge the functions also of the present Provincial Agricultural Officers. In Addis Ababa the Ministry of Agriculture would maintain what would essentially be staff functions for regulatory services, training and research, planning and programming, administration and legal services.

While it could be possible to illustrate this anticipated development in organization charts, this has been considered premature at the present time when no clear policy guidelines on the matter exist.

Chart 1 - ORGANIZATION CHART OF THE MINISTRY OF AGRICULTURE

Minister of Agriculture
Minister of State



2.4 EPID and the Comprehensive Projects

Although the comprehensive projects have made and still are making great contributions in the development of peasant agriculture, IEG cannot afford to continue indefinitely the provision of scarce resources into limited geographical areas. Indeed the basic reason for establishment and promotion of MPP was that the comprehensive projects were found to be too costly to bring about development to the mass of the peasantry.

A gradual phasing of these projects into the national programme of agricultural development, therefore, is essential and inevitable. Two basic functions now performed by the comprehensive projects are research and testing through implementation. These two functions should gradually be integrated into a national research programme, while implementation should be carried out mainly through EPID/MPP. The comprehensive projects should serve as powerhouses for the development of innovations later to be given nation-wide replicability through MPP.

The gradual approach of phasing into the national programme would then result in a similar reduction in the autonomy of these projects. Already within EPID a process of strengthened co-ordination has been started through the establishment of PELD. An increasing number of activities and services common to all EPID projects would be pooled and provided centrally from EPID Headquarters. While in the intermediate future the ties of the comprehensive projects to EPID can be effected through PELD, in the long run some of these projects would have to serve as regional or provincial co-ordination offices for the normal programmes of the Ministry of Agriculture.

Toward the end of EPID Phase II it may therefore be envisaged that the present semi-autonomous status of the comprehensive projects would have been abandoned in favour of a close integration of these projects into EPID's overall administrative structure. Within their respective areas of operation

the comprehensive projects would be allowed freedom to experiment with alternative approaches and different combinations of inputs, but this should be done only in conformity with general guidelines emanating from EPID Headquarters.

The present liaison role of PELD would then no longer be required. Instead, PELD should perform the function of mapping out the new experimental approaches needed and then participating in the design of new projects to meet such a need. In this work PELD would, as in the past, co-operate closely with the Planning and Programming Department of the Ministry of Agriculture.

2.5 EPID Headquarters and Field Activities

As mentioned above, no far reaching re-organizations of the Ministry of Agriculture are envisaged in the short term, i.e. within the first years of Phase II. During this period EPID would thus remain organized essentially as at present.

The heads of Department, the Common Services Division and the Planning, Evaluation & Liaison Division would be strengthened but retain their present functions. However, these two divisions would also have part of their present duties decentralized to a regional level, and at Headquarters there should be highly qualified specialists providing guidance for the work done regionally at the co-ordinators' offices.

The Extension Division would no longer be actively engaged in the administration of the agricultural extension work. Its primary function would be to develop extension methods and to introduce these in the field areas using specialists at the co-ordinators' offices. Again, the subject matter specialists in the Extension Division at EPID Headquarters should be highly qualified and capable of having overview of the national requirements for initiatives in the field of agricultural extension. The design of the planning for new extension activities should be performed in the Extension Division, while the regionally placed specialists and the

personnel in the field areas would be responsible for implementation.

A new feature of EPID during Phase II would be the Co-operative Marketing Division. This unit would be responsible for the promotion of primary co-operative societies, the establishment of secondary co-operative unions, the marketing of agricultural inputs and outputs through the co-operative societies and through EPID marketing centres. Also for this Division the principle should be that the technical guidance should be forthcoming from Headquarters, while the personnel in the field areas should be programmed in conformity with such guidance and providing feedback information to Headquarters.

Co-ordinators' offices will be established on a regional or provincial basis. Administratively these offices will be responsible directly to the heads of Department through a small field liaison office at Headquarters. Each co-ordinator's office would be staffed as a mini-EPID complete with subject matter specialists, common services staff, their own budget etc. As the PAOs become incorporated into EPID's field network, these offices will also have resources for regulatory functions.

The MPPAs will eventually be organized on an awraja level with one or more marketing centres in each woreda. In this manner it is hoped to avoid the present dualism with regard to the local administrations and to elicit a better support for EPID's work from them.

Many of these organizational developments have already begun to take shape during EPID Phase I. In the drought affected areas of the country EPID already in 1974 started to establish field areas following awraja boundaries as well as provincial co-ordinator's offices granted an element of administrative autonomy. While the Co-operative Marketing Division was not formally initiated during Phase I, part of its work has certainly commenced. The trend toward

increasing emphasis on the technical work of subject matter specialists in, particularly, the Extension Division also commenced during Phase I.

Chart 2 reflects EPID's organization during the first years of Phase II, as outlined above. While it is possible that the Ministry of Agriculture during the later years of Phase II becomes subjected to more comprehensive re-organization, this has not been anticipated in this paper.

.../110

Minister of Agriculture

Heads of Department

Internal Audit Unit

Field Liaison Office

Planning, Evaluation & Liaison Division

- Planning
- Evaluation
- Liaison
- Engineering

Common Services Division

- Administration
- Accounting
- Transportation of personnel
- Purchases
- Information & P.R.
- Cost accounting

Extension Division

- Agronomy
- Animal husbandry
- Home economics
- Training
- Soil conservation
- Forestry

Co-operative Marketing Division

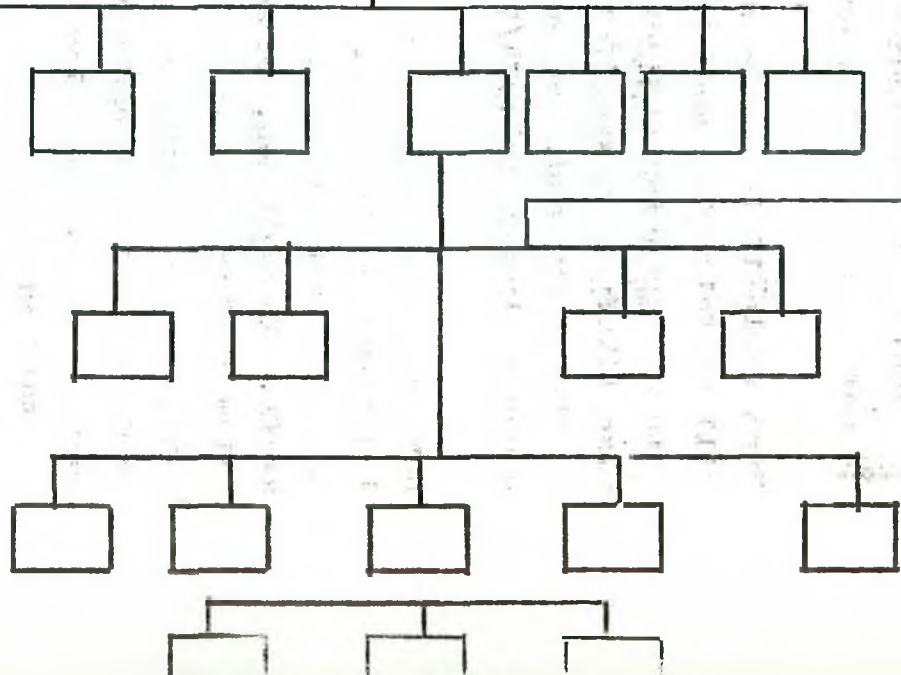
- Co-operative promotion
- Purchases & Sales
- Transportation of inputs & outputs
- Field operations
- Credit

Co-ordinators (secondary unions)

Regional subject matter specialists

Supervisors (MPPA, DA,)

Pre Coops.



2.6 Resource Requirements for the Future

Tables 17 and 18 are intended to illustrate EPID's requirements for the major categories of field personnel and for financial resources during Phase II. The figures shown in the tables have been computed on the basis of the project's 1974/75 approved budget which in turn was based on current long term plans as set forth in the loan application to IBRD/IDA as well as the IBRD/IDA appraisal report. As these plans are gradually modified with the progress of the project, the tables provide indicative orders of magnitude only and do not purport to show precise estimates.

From table 17 it may be seen that the most serious staff shortage will be felt with regard to marketing assistants, given the rate of expansion projected above in table 16. There will also likely be a shortfall of supervisory field personnel. On the other hand, the number of agents and assistant agent exceeds already in 1974/75 the number required for 1975/76.

However, the actual needs are likely to be yet higher than indicated by the table. In preparing the table no allowance has been made for resignations and terminations of incumbent staff. In addition, in several extension areas with high volumes of work it is necessary to assign not only one agent but also one or more assistant agents; there may even be a need for more than one marketing assistant in certain extension areas. No allowance has been made for an expansion of staff categories that at present are relatively scarce or even nonexistent, for instance, co-operative organizers, home economics agents, animal husbandry agents. The table therefore reflects EPID basic field personnel requirements only, and it does not incorporate the project's expansion into new activities.

The total cost requirements illustrated by table 18 are also based on the present project costs as given by the approved 1974/75 budget. The cost increase from 1974/75 to 1975/76 is, of course, mainly explained by the establishment of the

Co-operative Marketing Division in the latter year. The costs increases at EPID Headquarters excluding the Co-operative Marketing Division are difficult to project, but it may be assumed that the Headquarters organization may gradually improve on its capability to administer increasing numbers of field areas. Thus the ratio between total costs for the field areas and Headquarters respectively was in 1974/75 1:4, while it in 1979/80 is assumed to be 1:9.

.../113

Table 17: EPID Phase II Basic Field Personnel Requirements

<u>Y e a r</u>	<u>MPPAs</u>	<u>Mark. centres/ extension areas</u>	<u>Super- visors</u>	<u>Ass. su- pervisors</u>	<u>Agents</u>	<u>Assistant agents</u>	<u>Marketing assistants</u>
1974/75	(48)	(347)	(56)	(28)	(233)	(178)	(170) ⁽¹⁾
1975/76	53	375	74	53	210	161	265
1976/77	63	425	78	63	275	220	300
1977/78	73	475	83	73	325	275	350
1978/79	83	525	93	83	365	330	395
1979/80	93	575	103	93	405	375	445

Table 18: EPID Phase II Total Costs

<u>Y e a r</u>	<u>MPPAs</u>	<u>Mark. centres/ extension areas</u>	<u>T o t a l C o s t s, E t h. \$</u>			<u>T o t a l</u>
			<u>Field areas</u>	<u>E P I D Headquarters</u> (2)	<u>Co-op. Mark. Division</u> (3)	
1974/75	(48)	(347)	(7,617,000) ⁽¹⁾	(5,382,000) ⁽¹⁾	-	(12,999,000) ⁽¹⁾
1975/76	53	375	8,231,000	5,400,000	2,769,000	16,400,000
1976/77	63	425	9,329,000	5,800,000	2,944,000	18,073,000
1977/78	73	475	10,426,000	6,200,000	3,582,000	20,208,000
1978/79	83	525	11,524,000	6,500,000	2,599,000	20,623,000
1979/80	93	575	12,621,000	6,800,000	2,337,000	21,758,000
T o t a l			52,131,000	30,700,000	14,231,000	97,062,000

(1) Actual budgeted figures

(2) Including the regional co-ordinators offices but excluding the Co-operative Marketing Division

(3) See table 20, Serton 3.6.6.

The same proviso applies to table 18 as to table 17, namely that it is based on present unit costs for the field areas and therefore does not take into account a functional expansion of the scope of the work in these areas. The table should thus be regarded as an illustration of minimum cost requirements for the project during the Phase II.

.../115

Part 3: A PROPOSAL FOR SUPPORT BY SIDA TO EPID PHASE II

3.1 A Few Basic Assumptions

Part 3 of this paper contains proposals for support by SIDA to EPID Phase II. It may be useful to make explicit a number of basic assumptions on which these proposals are made.

1. EPID Phase II will have a duration of five years starting immediately after the expiration of the current agreement between the Swedish Government and IEG on 7 July 1975, i.e. the present proposals cover the period 8 July 1975 through 7 July 1980.
2. SIDA will during this period continue to support projects designed to promote small farmer development in Ethiopia.
3. Assistance from SIDA will continue to be provided as in the past and consist mainly of technical assistance (expert services), contributions in cash toward the project's operating costs, training of Ethiopian staff, and special studies. The assistance from SIDA will continue to be untied, and funds provided to EPID may be used at the entire discretion of the project within the general scope of approved annual work programmes and budgets.
4. The overall annual volume of assistance from SIDA to Ethiopia will not fall below that of 1974/75 of about E\$18.5 million (SKr 40 million).
5. SIDA's support to EPID will be provided exclusively on a grant basis.
6. EPID will during its Phase II continue to receive assistance from the same sources as at present.

In particular, it will receive a second loan from IBRD/IDA for capital assistance during its Phase II, and it will continue to receive technical assistance from FAO/DANIDA for co-operative promotion and for the promotion of fertilizers.

7. There will be one agreement combining the requirements for support from SIDA of both EPID and CADU. Where functions of the two projects may be usefully combined, this will be done. However, it may be practical for each project to have a separate Plan of Operation within the framework of the agreement.
8. The emphasis of the support to be requested from SIDA during EPID Phase II will be on (a) technical assistance in support of MPP, and (b) co-operative marketing which at present falls outside MPP and the capital assistance provided by IBRD/IDA.

In the following, brief descriptions of the assistance to be requested from SIDA to EPID Phase II are provided under the headings of the main organizational units within EPID. It has not been considered fruitful to go into detail with regard to each item as past experiences have indicated that there may be many changes as the implementation of the project proceeds. The specification of future assistance from SIDA should, therefore, merely be viewed as indicative.

For this reason it is felt that EPID's next Plan of Operation should be a broad document specifying mainly the project goals, and the budgetary ceilings applicable to the support to be forthcoming from SIDA. The more detailed specifications should be made within the purview of the annual work programme and budgets that EPID, in any case, has to prepare in order to meet the requirements of IEG, IBRD/IDA and SIDA. This will also explain why there has not been felt to be a need

to develop in this document in great detail EPID's current plans of work for the next five years.

Given the assumption made under point 6 above, little will be said in the following about assistance from other sources than SIDA.

3.2 Heads of Department

IEG is likely to continue to experience a shortage of senior managerial personnel able to participate in the overall management of EPID, and it is estimated that the need to furnish an expatriate as one of the deputy heads of department will remain through EPID Phase II. However, IEG may during the period decide that this post should be filled in an advisory rather than operational capacity, and that Ethiopian staff should be fully responsible for the operational guidance of EPID.

One valuable feature of EPID Phase I has been a number of special studies explicitly specified in the Plan of Operation and funded by SIDA. These studies have been of considerable assistance to EPID in focusing the attention of project management on specific issues and making concrete policy recommendations. EPID will have a continuing need for funds for such studies.

These studies will be of two different kinds during EPID Phase II.

- A) Policy oriented studies to be executed by experienced consultants contracted directly by EPID.
- B) Studies of more narrow subjects to be carried out by Swedish or Ethiopian graduate students (minor research tasks).

It would be premature to specify the contents of all such studies to be carried out during EPID Phase II, particularly those under (B) above. However, the

following studies should be included under (A) during EPID Phase II:

- 1) A study of EPID's co-operative marketing strategy. This study would be viewed as a follow up to the previous study (1) and be executed a few years after the Co-operative Marketing Division is established.
- 2) A study on the possibilities of rationalizing EPID's marketing accounting taking into account the requirements of the comprehensive projects.
- 3) A study on local government efficiency as it relates to the co-operation and co-ordination between local government officials and EPID field personnel.
- 4) A study of the introduction of systems for marketing of animal products (meat, hides, milk, etc.) through co-operative societies in the EPID field areas.
- 5) A study of population growth and other demographic patterns as they affect the evolution of EPID (this study is mentioned already in EPID's present Plan of Operation).
- 6) A study of soil conservation methods to be introduced in EPID's extension programme.
- 7) A study of the effects of different measures of implementing land reform legislation in EPID field areas as they would affect the work of the project in these areas.

Included under special studies should also be an external evaluation study of the project to be carried out in the fourth year (1979) of EPID Phase II.

(1) EPID Publication No. 14.

There will be a continuing need for EPID to send staff on training abroad. Such training should, if financed directly by EPID, mainly be of the short duration diploma course type; it may also include study tours of limited duration. An annual lump sum of E\$.35,000 is proposed for this purpose.

Summary of proposal

	<u>1975/76</u>	<u>1976/77</u>	<u>1977/78</u>	<u>1978/79</u>	<u>1979/80</u>
Technical assistance (man-year)					
Deputy Head	1	1	1	1	1
Special studies (E\$)	100,000	100,000	100,000	100,000	100,000
Training abroad (E\$)	35,000	35,000	35,000	35,000	35,000

3.3 Planning, Evaluation & Liaison Division

There is likely to continue to be a shortage of economists in Ethiopia with training in evaluation techniques. While EPID's internal evaluation programme will remain relatively simple in functional scope, it will gradually increase in complexity due to the foreseen expansion of the project and the rapidly increasing number of field areas to be covered. The technical difficulties related to the processing of data from the field, organization and conduct of surveys etc. are likely to grow successively more pronounced. In addition, EPID will have a continuing need for expertise in matters related to economic analyses and budgeting. It is, therefore, proposed to provide for an expatriate evaluation economist for the duration of EPID Phase II.

Already at the time of preparation of the IBRD/IDA loan application for MPP it was seriously considered to acquire a computer for input marketing accounting for all the package programmes within EPID. At the time this idea was dropped as premature, and it is likely that computerization of EPID's accounting work would always suffer from poor quality of data inputs and negative employment effects and therefore even during EPID Phase II

be considered not feasible. On the other hand, much of the accounting work could be streamlined and facilitated by a systems approach that currently is not being used. In addition, the computation work of the Planning, Evaluation & Liasion Division will quickly increase in magnitude as the number of field areas and hence the scope of its surveys increase, and the Division would have much to gain from computerizing the processing of its survey data. It is therefore purposed that a systems analyst be assigned to the Division for a period of three years in order to advise on the introduction of systems for computerization in the accounting work (although not necessarily leading to actual computerization of this work during Phase II) and on the use of computer processing in connection with surveys. This post should be utilized not only for EPID/MPP but also for the comprehensive projects.

Summary of proposal

	<u>1975/76</u>	<u>1976/77</u>	<u>1977/78</u>	<u>1978/79</u>	<u>1979/80</u>
Technical Assistance (man-years)					
Evaluation economist	1	1	1	1	1
Systems analyst			1	1	1
T o t a l	1	1	2	2	2

3.4. Common Services Division

For its overall stability and efficient functioning EPID will be greatly dependent on an efficient common services function. If it is to be a progressive and modern agent of development, it is essential that it is able to maintain an administrative standard that is exemplary within the agencies of IEG. As the project grows the administrative management of EPID becomes increasingly complex demanding more from the senior personnel involved. The post of administrator will, therefore, become a more and more important one requiring considerable experience from its incumbent. The work load on EPID management would rapidly become excessive unless this post was filled by a person with a wide knowledge of the administration of

organizations as large as EPID. While it is relatively easy to locate Ethiopian personnel with the requisite theoretical background for this post, it has in the past proven difficult to recruit Ethiopian nationals with this practical experience. It is, therefore, proposed that an expatriate administrator (he may, if appropriate, serve as deputy administrator) be provided for throughout EPID Phase II.

It is expected that the duties of the present expatriate accountant may be taken over by Ethiopian personnel after one year of Phase II. During that year attention should, therefore, be given to the assignment of a well qualified counterpart to him who may later assume his duties.

With the establishment of the Co-operative Marketing Division there will be a great need for the introduction of efficient cost accounting systems throughout EPID. It will be necessary to be able to compute costs per co-operative society, per product sold etc. There will also be a need for the introduction of cost accounting systems enabling a more efficient cost control than at present for all EPID field areas and administrative units (cost centres). Work on the introduction of cost accounting systems should start immediately following the commencement of EPID Phase II, and it is then proposed to assign one expatriate cost accountant for three years.

Already in 1973 a request was made to SIDA for an expatriate media specialist. His task will be to develop audio-visual aids, information and teaching materials for use in the extension work and to assist in the establishment within EPID of a unit equipped to produce such materials. This post is expected to be filled during 1974/75 and should be provided for during the first three years of EPID Phase II.

Summary of proposal

	<u>1975/76</u>	<u>1976/77</u>	<u>1977/78</u>	<u>1978/79</u>	<u>1979/80</u>
Technical assistance (man-years)					
Administrator	1	1	1	1	1
Accountant	1				
Cost accountant	1	1	1		
Media specialist	1	1	1		
Total	4	3	3	1	1

3.5 Extension Division

The direct burden of administering and supervising EPID's field work has so far fallen, in large measure, on the Extension Division. In the future, this burden may be considerably alleviated with the appointment of well qualified, full time co-ordinators responsible for the supervision and guidance of field staff within their areas of assignment. On the other hand, the geographical coverage of the project will continue to expand, the assortment of services to be provided to the farmers will widen, and the complexity of the work of the Extension Division will further increase. The demands for subject matter guidance that will be placed on the specialists in the Division will grow, and the need for well qualified staff in the Division will during EPID Phase II accelerate.

It has previously been set out in this paper, that EPID has to date faced a shortage not so much of personnel with the necessary formal qualifications but rather of people combining formal training with extensive on-the-job experience. During EPID Phase II there will be a continuing need for technical assistance to the Extension Division to provide Ethiopian staff with this experience under the guidance of expatriate specialists.

The post as assistant head of the Division will need to be filled by an expatriate during the entire EPID Phase II. This is a key post essential for the smooth

functioning of the Division. Its incumbent will have to combine ~~agronomic~~ expertise with experience from a national agricultural extension service in a developed country. He should have experience from the organization and administration of such a service. He will assist in the development of work programmes and plans for the various units within the Extension Division and be active in supervising their implementation.

EPID is in 1974 planning to initiate a village level seed multiplication scheme based on contract seed production within the field areas. This scheme is intended to help build up a demand for improved seed that may later be used in support of the development of policies, institutional arrangements and legislation for the certification of seed in Ethiopia. EPID has already requested SIDA to recruit an expatriate specialist to assist in the development of this scheme, and this post needs to be provided for during the three initial years of EPID Phase II.

With regard to the sale of agricultural implements to farmers EPID has to date lagged behind its established targets. While there are several explanations for this, a major reason has been that the development of new implements has not progressed to the point where EPID has had an assortment of suitable implements ready for dissemination to farmers. EPID now has the capability to promote the use of implements, but it does not have, nor should it have, the capability to develop these innovations. However, EPID should assume the responsibility for ensuring that the development of nationally applicable innovations is taking place. While useful to EPID, CADU's work in this field is not always of a national relevance since it is mostly related to conditions in Chilalo only. It is therefore proposed that an expatriate specialist on the development of agricultural implements be assigned during the first three years of Phase II to work primarily with IAR.

He should thus be viewed as part of the joint IAR/EPID research effort and be assigned to IAR while co-operating closely with EPID.

To date EPID's field work has mainly been concerned with cereals and plant production in general. However, during EPID Phase II animal husbandry will assume much increased importance. Relative to plant production this is a complex field demanding for its success a certain level of animal health service, sanitary water supplies, marketing facilities for perishable dairy products, breeding facilities etc.

The work in animal husbandry only commenced in early 1974. Since work in this field is a slow process without the immediate, spectacular results that may be evident in plant production, and since an animal husbandry extension service is virtually nonexistent in Ethiopia today, it is estimated that an expatriate animal husbandry specialist will be required throughout EPID Phase II. His work will primarily focus on the development of better yielding breeds of cattle and sheep, and the introduction of improved methods for management that may be adopted by small farmers. He should have lengthy experience of extension work in this field including fodder crop production.

As breeding bulls and rams in increasing numbers are introduced in EPID's field areas, the need for expertise in the field of fertility and insemination will be important. There will also be a need for developing a small diagnostic laboratory in order to identify parasites and other diseases and recommend remedies to be undertaken in close co-ordination with the national veterinary service. This would call for the establishment of a therapeutic veterinary service to be provided on a limited scale mainly with regard to the grade animals supplied to farmers⁽¹⁾. To assist in the establishment

(1) EPID Publication No. 7, p.77.

of such a service an expatriate veterinary officer will be required for the entire duration of EPID Phase II.

The major incentive to the farmers in acquiring grade animals lies on the marketing side: unless there is an outlet for animal produce providing the farmer with economic returns, he is unlikely to be willing to make any investments in improved cattle and sheep. It is foreseen that marketing of animal produce will be done within the auspices of the co-operative societies and the Co-operative Marketing Division, and expertise in this field will, therefore, be provided to that Division.

EPID's work in the field of home economics extension will expand in conformity with an already completed plan⁽²⁾. According to this plan, the home economics staff will be upgraded and given the same level of training as the present agricultural extension staff. This implies an expansion of the agricultural training institutes at Jimma and Ambo and an initiation of streams for home economics at both institutes. To assist in this expansion an expatriate expert will be required for the first three years of EPID Phase II. His task would be to develop curricula in home economics and participate in the teaching work at the institutes. To the extent possible the principle should be one of an integrated training for extension agents of all kinds with subject matter specialization only towards the end of the two year course.

The services of a second expatriate specialist will be required, also for the first three years of EPID Phase II, to participate in the expansion of the home economics work in the field. It will be necessary to supervise the agents carefully, provide them with work programmes, and encourage their more active involvement in EPID's extension work in the field

(2) EPID Publication No. 18

areas. It will be necessary for EPID to adopt a more systematic and better integrated approach to home economics extension work following the aforementioned plan, and in this connection the expatriate's service will be necessary.

Throughout Phase II EPID will have a need for training facilities for assistant agents and marketing assistants, according to current estimates about 60 staff in each of these two personnel categories will have to be trained each year. In addition, there will be a continuing need for in-service training courses to be held for increasing numbers of staff. Presently the only major training facility for these intermediate staff categories is CADU's agricultural school in Asella. In order to be able to accommodate these numbers of trainees over and above its own requirements CADU will require additional investment in dormitories and other facilities. This investment should be made at the outset of EPID Phase II and has been estimated at Eth.\$300,000, which amount is proposed to be financed by SIDA. Current costs for the staff training will be carried over EPID's normal budget, i.e. be financed mainly out of the IBRD/IDA loan funds.

All posts for expatriate specialists indicated above are those proposed to be filled by SIDA during EPID Phase II. However, EPID is at present receiving technical assistance also from several other donors and, as already indicated, it is assumed that such assistance will continue and, if necessary, be further expanded to meet the needs of the project.

Thus USAID is expected to continue furnishing technical assistance in the fields of crop protection, soil and water management, and tropical crops. USAID will also provide technical assistance for the promotion of production of pulses. Under the fertilizer programme financed by DANIDA FAO is expected to provide one soil

The first part of the paper discusses the general principles of the theory of the structure of the atom. It is shown that the structure of the atom is determined by the laws of quantum mechanics, and that the structure of the atom is determined by the laws of quantum mechanics.

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task of regulating the output or grain price to the farmer becomes of paramount importance to ensure the long term success of the package programmes.

When CADU was designed it was recognized that there was a need for providing the farmers with an alternative to the traditional grain merchants in order to eliminate monopsonistic market practices and variety of irregularities in the buying process of grains, all of which are heavily biased against the farmer and reduce the price he obtains for his produce. CADU, therefore, at the outset embarked on a programme to purchase grains⁽¹⁾ from the farmers, store these grains until national price levels later in the season increase, and then sell on the open grain market. This programme has enjoyed a most positive response from the farmers, and in 1974 CADU will handle about 11,500 tons of grains purchased in Chilalo. While this represents no more than about 10 per cent of the total marketed quantity in the awraja, the programme serves its purpose of raising the economic returns to the farmers through improved trading practices and prices in the local market places. WADU has subsequently embarked on a similar programme, ADDP is currently planning to do so.

The engagement in output marketing has been one of the basic differences between comprehensive and minimum package programmes. MPP is designed only for the provision of agricultural inputs to the farmers who are expected to use the traditional trading channels for marketing their output. While the IBRD/IDA loan for MPP provides for 200 ton stores to be constructed at the present marketing centres in EPID field areas and for a revolving credit of Eth.\$2 million to finance storing, MPP as now designed does not foresee any active involvement by EPID in output marketing.

However, any individual Ethiopian peasant farmer probably feels the need for assistance in marketing more

(1)

CADU has also purchased milk from the farmers.

strongly than the need for improved agricultural inputs. He is keenly aware that he is at a disadvantage when he takes his produce to market, and that he is not in a position to break his dependence on the traders as a necessary source of cash after the harvesting season. Provision of improved inputs can, therefore, be termed only half a step towards EPID's current goal of raising the standard of living of the farming population. As set out above, farmers' demand for such inputs is also highly dependent on their expectation for good economic returns or favourable grain prices. In the continued absence of active intervention in the national grain marketing structure by EPID, the long term success of MPP is likely to be in danger⁽¹⁾.

Such intervention should not necessarily only be brought about by EPID. In fact, any initiative of EPID in this field would be likely to have limited impact unless it was effectively supported by a national marketing structure for agricultural produce. To date such a structure has not existed in Ethiopia with the IEG agencies presently existing - EGC and EGB - suffering from fundamental weaknesses that seriously impair their abilities to make active intervention in the grain marketing system. As a result of the absence of active IEG initiatives in this area, grain prices have shown sharp inter- and intraseasonal fluctuations to the detriment of producers and consumers alike, the system is excessively costly, its performance with regard to standardization, hygiene etc. is poor. A comprehensive improvement of the Ethiopian agricultural marketing system is in the interest of the Ethiopian public in general and of farmers in package programme areas in particular. As a logical sequence to the package programmes designed to raise production, programmes aimed at the agricultural marketing subsector, should assume an important priority in the development of Ethiopian agriculture during the second half of the current decade.

(1) See Section 1.7.4. above, and also Imperial Ethiopian Government: Grain Storage and Marketing Project. Planning & Programming Department, Ministry of Agriculture, Addis Ababa, March 1974, p.50.

The need for improving the IEG intervention in the national marketing of agricultural produce in 1973 and 1974 led to two independently made albeit closely interrelated project proposals. The first was completed in October 1973 by an EPID consultant, Professor Bo Wickstrom, and had the character of policy guideline for the establishment of a co-operative marketing structure based on small farmers in EPID field areas⁽¹⁾. The second is a more detailed proposal for the strengthening of EGC with capital assistance from IBRD/IDA⁽²⁾.

The detailed proposals for the establishment of the Co-operative Marketing Division that follow in this Chapter are based on these two studies, and, in particular, on the ideas expressed by Professor Wickstrom. Little attempt will be made to summarize the studies, and reference is, therefore, made to them for the full background.

The establishment of the Co-operative Marketing Division is viewed as a separate project within EPID from the point of view of foreign assistance. The Division will have the same goals as EPID and be fully integrated organizationally and administratively into EPID. However, it is not included in the IBRD/IDA loan to MPP and will, therefore, be financed on somewhat different principles than the remainder of EPID.

3.6.2 Objectives and Basic Assumptions

As indicated in the preceding section, the main goals of the Co-operative Marketing Division would be no different from those of EPID itself. However, the following subgoals may be formulated that apply specifically to the Division:

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- (1) EPID Publication No. 14
 - (2) Imperial Ethiopian Government; Grain Storage & Marketing Project op. cit. In the following, this project is referred to as AMC, the new name to be given to the reconstructed EGC.

1. Establish a network of economically viable primary co-operative societies in the EPID field areas. These societies shall be established at a rate at least commensurate to the overall rate of expansion of EPID's field activities.
2. Establish on a regional and later provincial basis secondary co-operative unions in support of the primary societies. These secondary unions will eventually be owned by the primary societies and hence by the farmers in the EPID field areas.
3. Establish the Co-operative Marketing Division as the national apex organization for a farmer based co-operative movement. In the long term (although not necessarily during EPID Phase II) this organization would also be owned by the primary co-operative societies.
4. Initiate marketing of agricultural inputs and outputs on commercially sound principles within the auspices of this co-operative institutional framework. The revenues from such a marketing operation should cover all costs in those primary societies and secondary unions that have been actively engaged in input and output marketing for more than three years.

These objectives for the Division are formulated in the light of the following basic assumptions:

1. IEG and hence EPID is committed to a strategy of promoting farmer based co-operative societies as a means of transferring the responsibility for part of the present work of the package programmes to their target populations.

2. The opportunity to obtain better economic returns for their agricultural produce, i.e. the improvement of the present agricultural marketing structure, is a major incentive for the farmers to join co-operative societies.
3. To maintain the farmers' interest in supporting the co-operatives, it is necessary to gradually provide to the societies a measure of autonomy allowing them to make some independent decisions.
4. Such an autonomy would initially be limited and be governed within the three-tiered hierarchy of the Co-operative Marketing Division, the regional secondary union, and the primary society.
5. In those of its field areas, where EPID has successfully prompted the establishment of primary co-operative societies, EPID would also continue to be responsible, through its Co-operative Marketing Division, for the input/output marketing of these societies.
6. AMC will be established roughly at the same time as the Co-operative Marketing Division with the new proposed IBRD/IDA support and will develop roughly along the lines drawn up in the present proposal.
7. EPID Phase II will develop along the lines foreseen in this proposal.

3.6.3 Detailed Features of the Division

Co-operative promotion. The Division would be responsible for all the work in the field of co-operative promotion at present carried out within the Extension

Division, and the present Co-operative Promotion Section would in its entirety be transferred to the Co-operative Marketing Division. As at present, its duties would include:

1. Planning and supervision of co-operative promotion in the field areas including the establishment and registration of new societies.
2. Training of staff in co-operative principles and in work related to the functioning of the co-operative societies.
3. Co-operation and co-ordination with other IEG agencies engaged in matters related to co-operative promotion.
4. Production of educational materials for use in co-operative promotion.
5. Continuous supervision of the operations of established primary societies.

In the conduct of these tasks, the Division would rely heavily on co-operative organizers posted to the field areas and on a senior co-operative organizer assigned to the secondary union. Initially, the organizers would be supervised and guided directly from the Division at EPID Headquarters, whereas this in the future would be done increasingly through the secondary unions.

In its co-operative promotion work the Division would use modern audio-visual aids developed together with the Information Section. It would have mobile units for film shows etc. in the field. To the extent possible this work would be conducted in close co-operation with the traditional societies like idir, equb, mahaber.

While the co-operative promotion work would cover all EPID field areas, and any areas with promising prospects for co-operative formation would be assisted, the thrust of this work would be phased in accordance with this proposal⁽¹⁾.

The Division would ensure that an adequate supply of trained co-operative organizers is forthcoming. At present the training institute at Awassa operated by MNCD & SA is the only institution in the country in this field, and EPID should endeavour to ensure that it is expanded and provided with requisite support. In addition, increasing use would be made by EPID of the training school at CADU.

Output marketing. The guiding principle for the output marketing work of the Division should be one of close co-operation with AMC. In no case should the Division compete with AMC or duplicate its facilities.

It is foreseen that the output marketing work of the Division and of the co-operative societies would proceed as follows:-

1. In those EPID field areas where primary co-operative societies are established, these societies would act as buying agents for AMC.
2. In those areas there would be no buying facilities directed at small farmers operated directly by AMC.
3. Cleaning and bagging would be done at these primary societies/buying centres using simple, hand operated equipment.
4. Only members could sell grains to the society.

(1)
See below Section 3.6.5.

5. The society would have at its disposal a 200 ton store constructed by EPID or by AMC and transferred to the society at cost and on long term credit terms.
6. Grading would be done at the buying centres and farmers would be paid according to a simple grading system.
7. Payment to farmers would be made according to price scales established beforehand by AMC.
8. Using rented trucks and trucks owned by the Division and by AMC all purchased grains would be transported to the nearest regional AMC store.
9. In those EPID field areas where co-operative promotion has made slow progress and no societies been established, grain purchases would be made through the EPID marketing centres there. AMC would then have to provide the financial support necessary for EPID to strengthen its marketing centres and enable them to do this work.
10. AMC would only directly purchase from large, commercial farmers or traders.
11. Working capital for the grain purchases would be supplied by AMC.
12. Normally AMC would contract with the co-operative societies for supply of specific quantities of grains.
13. AMC would be fully responsible for the handling of the grains from the point of purchase.
14. EPID would through the Co-operative Marketing Division provide the requisite supervision of the

grain purchasing operation in its field areas.

It would also handle the accounting work of the output marketing programme on a regional basis through the secondary unions.

The primary societies would not embark on any sales of produce, as it is not envisaged that they will be able to do this profitably.

The precise details of the principal/agent relationship between the Division and the co-operative societies on the one hand and AMC on the other should probably not be specified in detail at this time but be left to be worked out by management. However, it will be necessary that such a relationship is specified formally in order to ensure AMC of a certain minimum supply and the co-operative network of a minimum market for its produce.

Initially, it is likely that the prices posted by AMC will not differ substantially from those of private merchants and that the main benefit to the farmer/producer "will be correct weights (equal to 10-20 per cent higher prices) and the prospects of a second payment if the secondary union is successful"⁽¹⁾.

As the efficiency of AMC and the co-operative marketing network improves, prices to producers may gradually be raised relative to those of private traders.

The primary purpose of AMC should be to ensure adequate economic returns to producers and to provide backstopping to the package programmes. AMC should therefore be closely linked to EPID in general and to the Co-operative Marketing Division in particular and producer interests should through the co-operative network be strongly represented on the AMC board.

The entire output marketing operation would be conducted on fully commercial principles. It is conceivable that some primary co-operative societies would incur excessive cost overruns, and that it would be necessary

⁽¹⁾ EPID Publication No. 14, p.50

to convert them back to buying stations operated directly by EPID or to close them altogether. However, it is recognized that it will in the beginning be difficult for the co-operative network to cover all its costs, and that part or all of these costs initially will have to be budgeted under the Co-operative Marketing Division. Since failure to provide for all costs in the initial years quickly would stall the entire effort, particularly if purchased volumes initially were low, all operating costs for the primary societies and the secondary unions will for the first three years be provided for under the Co-operative Marketing Division.

Revenues during these first three years would be used to build up a fund controlled by the secondary union to be used to repay the loan given for the 200 ton stores at the primary societies and to meet any operating deficits in subsequent years. If all costs of primary or secondary societies may manifestly be covered by revenues before this three year period is at an end, this would be done.

The costs of the Co-operative Marketing Division at EPID Headquarters would during EPID Phase II be entirely budgeted for with the exception of the Transport Section (see below).

Transportation. Under the rehabilitation programme EPID is now being provided with seven 25 ton trucks and ten 5-6 ton four-wheel drive trucks. These trucks would form the nucleus of a trucking fleet that would be complemented by rented capacity as required. The trucks would be managed centrally at the Division, but consideration should be given to close co-ordination and possibly merger with the trucking fleet to be operated directly by AMC.

The trucking operation should at the outset be conducted on commercial principles. This means

that the Division should obtain a license to operate as a trucking company, and possibly that the trucks should be attached to one of the large trucking co-operatives operating in the transport market.

To the extent possible close co-ordination should be made of deliveries of fertilizers, seed and other inputs to the field areas and shipment of grains and other outputs from these areas. The profitability of the trucking operation will probably in large measure depend on the success of the Division in co-ordinating transports in this manner.

Charges for transport services rendered would be made at cost to the secondary unions and to AMC. Charges would be made to other customers at current transport market rates.

Input marketing. It is obvious that as the Division develops a capability for marketing storage and transportation, it will have much to gain from also taking over the distribution of agricultural inputs to the EPID field areas. The role that AIMS at present is playing as a supplier to EPID of all agricultural inputs would thus diminish, and this work would be taken over by the Co-operative Marketing Division. In this capacity the Division would also serve the comprehensive projects.

With regard to fertilizers economies of scale are of the essence when placing orders with suppliers overseas. Assuming that AIMS will continue to furnish commercial farmers with fertilizers, it would be advantageous for the Division to pool the fertilizer requirements of all EPID (i.e. including the comprehensive projects) together with those of AIMS with a view to placing one large order. However, as soon as the fertilizers arrive in Ethiopian port

they would be transported by trucks owned and rented by the Division directly to EPID field areas and stores. The overhead charges and profit margin now accruing to AIMS would then accrue to the co-operative marketing network and help pay for its operating costs.

Inputs that may be procured within Ethiopia would similarly be acquired by the Division directly and delivered to the field areas or to the comprehensive projects, as the case may be. As for fertilizers, the Division would retain the overhead charges now made by AIMS.

Working capital for the procurement of agricultural inputs is now included in the IBRD/IDA loan for MPP, and it is envisaged that this would be the case also for EPID Phase II. Such working capital should be made available directly to EPID in accordance with work programmes and budgets prepared in the usual manner.

As the co-operative societies assume an increasing role in the distribution of inputs, the accounting for the input marketing will gradually be decentralized to the secondary unions.

Storage of inputs may prove to be a problem. While all available storage capacity in principle should be used also for inputs, fertilizers would normally arrive in the country around December/January and need to be stored through May/June, which would overlap with the grain trading season. At the primary centres storage capacity for inputs would have to be reserved, but there might be limited capacity at the regional level for input storage. If need be, additional storage capacity would then have to be rented regionally with the cost to be carried by the farmers/consumers.

However, the objective should be to place inputs ahead of the planting season in regional stores

throughout the country and avoid the present concentration to one large central store in Addis Ababa. To that end it would also be preferable if fertilizers were delivered both to Assab and to Massawa.

3.6.4. Organization and Staffing

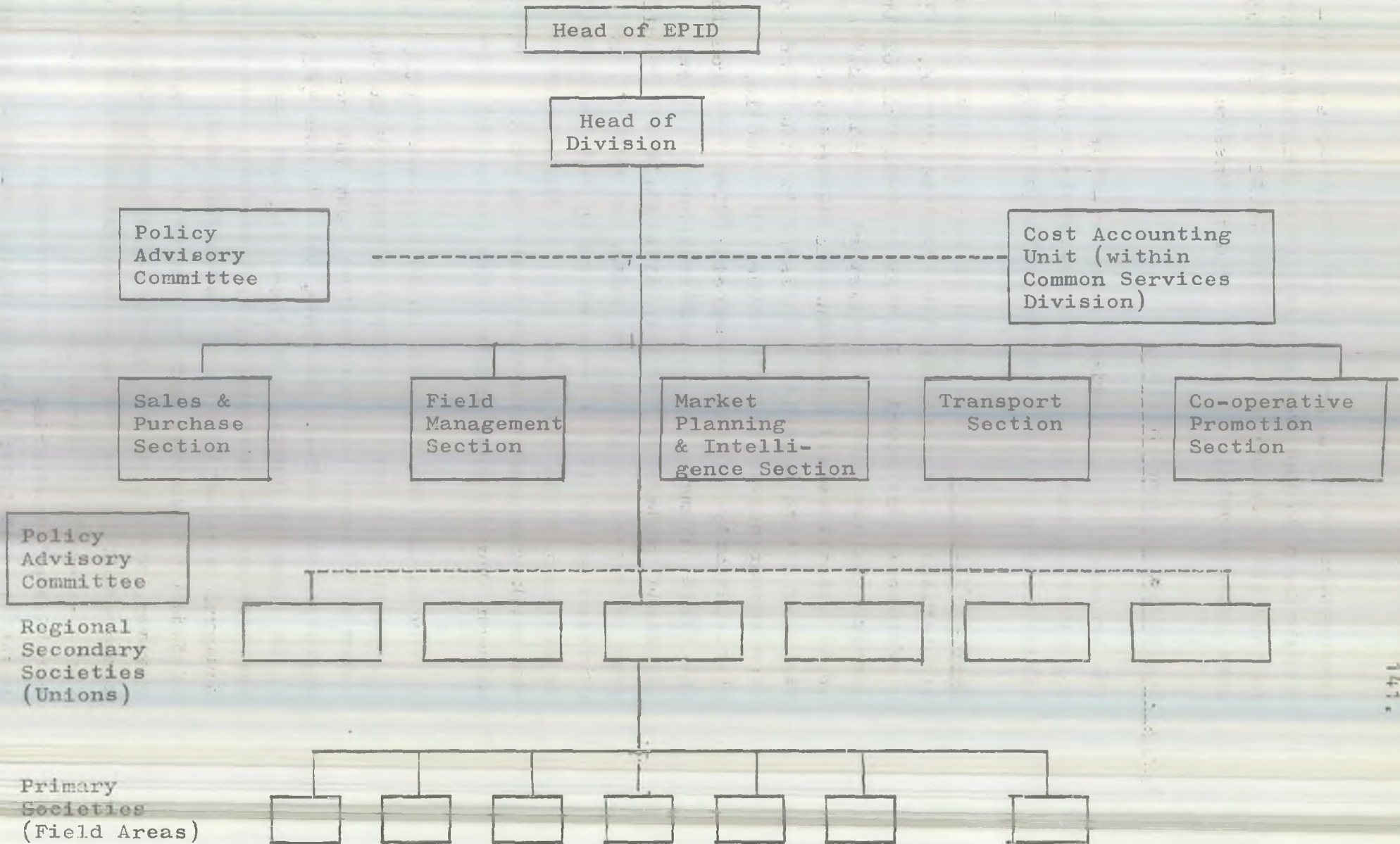
The proposed organization of the Co-operative Marketing Division and the co-operative field network is illustrated by chart 3 on the following page.

Head of Division There would be an Ethiopian head of Division with an expatriate assistant head. After a few years they would also have a young university graduate as an executive assistant. Their duties would entail overall planning and supervision of the work of the Division, liaison with the heads of Department as well as with other IEG agencies (particularly AMC) and commercial firms engaged in the field of marketing of agricultural produce, personnel management for the Division, and establishment of overall policies to guide the work of the Division within EPID's general goals and the specific objectives of the Division. In the management of the marketing operation they would be given a certain element for autonomy within these goals and objectives.

In the future the Division would be constituted as a co-operative apex organization responsible to a board of elected representatives from the co-operative societies. However, this is not likely to be feasible during EPID Phase II, and during this period the Division will, therefore, remain an integral part of EPID itself with the heads of Division responsible only to the heads of Department. However, with a view to gradually transferring the responsibility for the management of the Division to the co-operative network, a Policy Advisory Board is established consisting of representatives from primary societies and later also secondary co-operative unions

Chart 3

ORGANIZATION CHART OF THE CO-OPERATIVE MARKETING DIVISION



(normally the board chairmen of these societies). The function of this Committee would initially be only advisory to provide a channel for feedback information from the societies. It is intended that this Committee initially would be rather large, that it be convened perhaps only twice per year, and that it be used to provide its members with an insight into policy matters relating to the work of the Division. During the later part of EPID Phase II the Committee may be given increased power and be empowered to decide, for instance, how large purchases should be made by the co-operative societies for AMC and at what prices they should be made. It should be understood, however, that the real policy making functions of the Committee should only evolve gradually.

The head and the assistant head of the Division should both have considerable managerial experience. The expatriate assistant head should have had experience from co-operative marketing of agricultural produce. It is estimated that his post would be required throughout EPID Phase II. The Ethiopian head of Division may well be recruited from a commercial firm.

Cost Accounting Unit. It is envisaged that the Division at Headquarters would not be responsible for any accounting and that this work would be carried out by the Accounting Section of the Common Services Division and by the secondary co-operative unions. As output and input marketing work is initiated it will be essential to have access to a functioning cost accounting system. It will then be necessary to be able to compute costs per cost carrier and to determine the profit/loss of each item handled. It will also be necessary to have an efficient system showing costs per cost centre or co-operative society: it has already been mentioned that substantial cost overruns may render the primary

societies unprofitable and prompt their conversion back to EPID marketing centres. Systems for cost accounting are indispensable for the effective functioning of the co-operative marketing network.

At present all documentation for the accounts is processed centrally for all EPID, and this is likely to remain the case also during at least the first years of EPID Phase II. Cost accounting systems should, therefore, initially be based on this highly centralized accounting but take into account the likelihood of a later decentralization to the secondary unions.

The Cost Accounting Unit would be established within the Accounting Section. It would be provided with an Ethiopian cost accountant, two assistant accountants and two book-keepers; the staff would gradually increase with one of the assistant accountants and one of the book-keepers being appointed only in the third year of EPID Phase II. For the first three years the services of an expatriate cost accountant would also be provided to the Unit.

Sales & Purchase Section. This Section would perform all work related to the actual buying and selling of goods and services to be handled by the Division. It would be responsible for any central negotiations about volumes of grains to be supplied by the co-operative network to AMC. It would be responsible for developing marketing outlets for other produce than grains that may be offered for sale by the co-operatives (e.g. dairy products, animal products such as meat and hides, honey) but that would not be handled by AMC. Eventually, as the co-operative marketing network develops, the Section may also be responsible for the sale of grains purchased by the co-operatives to other customers than AMC.

Perhaps its most important function would be on the

purchasing side. It would contract for supply of agricultural inputs that may be produced and procured within Ethiopia. It would maintain liaison with AIMS for the procurement of fertilizers and other inputs to be imported. It would be responsible for the preparation and issue of tender documents, whenever procurement is to take place through public tender. While it would not procure transport services, it would also procure all other goods and services required for the Division, when appropriate in co-operation with the Procurement Section of the Common Services Division.

The Section would be headed by a sales & purchase manager. He would at the outset have an assistant sales & purchase manager, an assistant accountant and a typist to assist him. In the third year two additional sales & purchase specialists would be provided.

Field Management Section. The marketing expertise of the Division would be located in this Section. Its main task would be to provide subject matter guidance in this field to the primary societies and secondary unions. It would ensure that the societies are following efficient practices for the handling and storing of produce. It would advise the secondary union in practices to be followed in the marketing of produce. It would devote an increasing attention to the marketing of animal produce (milk, eggs, hides etc.), prepare detailed plans for such marketing by the co-operative network, and supervise the implementation of such plans.

The Field Management Section would also be responsible for day-to-day support of the secondary unions with regard to management and administration. The Section would assist in the establishment of the secondary unions and may even supply management to them on an initial and temporary basis.

The Section would also be responsible for the preparation, in consultation with the heads of Division, of overall marketing policies and strategies for the Division. As appropriate, it would participate in the preparation of plans for the development of the agricultural marketing subsector in Ethiopia.

In all matters relating to storage the Section would co-operate closely with the grain storage unit of the Agronomic Section.

The Section would be headed by an Ethiopian senior marketing specialist. He would be supported by an expatriate co-operative marketing specialist to be provided for the entire duration of EPID Phase II.

In addition, the Section would have two professional marketing specialists, from the third year onwards there would be two more. In the third year an expatriate animal products and marketing specialist would also be supplied to the Section.

Under the USAID supported Pulse Programme a marketing specialist for pulse crops would be provided to the Section at least during the first two years of EPID Phase II. Consideration would later be given to the possibility of reassigning this specialist to work directly with AMC.

Market Planning & Intelligence Section. There would be a continuing need for the Division to have access to accurate price statistics and to undertake a variety of surveys of markets and marketing conditions. These would be the main tasks of this Section, which would also be charged with the conduct, in close co-operation with the Planning, Evaluation & Liaison Division, of appraisals of the performance of the co-operative marketing network with regard to efficiency and effectiveness.

To undertake these tasks the Section would be staffed with an expatriate market analyst for the first three years of EPID Phase II working in collaboration with an Ethiopian counterpart. One professional statistician and one statistical assistant would also be assigned to the Section. Two additional Ethiopian market analysts would be assigned in the third year.

Transport Section. The main task of this Section would be to provide the necessary transport capacity for the input and output marketing to be done by the Division. In this regard it would rely primarily on the seven 25 ton and 10 5-6 ton trucks owned by the Division and ensure that these are utilized to the extend possible. However, it would also be necessary to rent considerable transport capacity.

Whenever the trucks owned by the Division were not fully utilized with transports for the co-operative network, consideration should be given to hiring out transport services at open market rates, and to that end the Section should be registered as a commercial trucking company. The objective should be to make the trucking operation commercially self-sustaining as soon as possible.

AMC will also operate a small fleet of trucks directly and complement this by renting additional transport capacity. It may soon be apparent that the trucks owned by AMC and those owned by the Division should be merged into one trucking unit operated either by AMC or by the Transport Section, in which case this should be done.

All trucks will be managed centrally by the Section. Trucks may be seconded temporarily to secondary unions on the basis of local priorities, but overall management responsibility for the trucks will remain with the Section.

The Section will need to have at its disposal large premises allowing the overnight parking of several large trucks with trailers. It should, therefore, be physically located separately from the Division and EPID Headquarters itself.

The staff of the Section will consist of a Transport Manager and an assistant to him in addition to clerks, typists etc. It is assumed that all costs for the Section except salaries and investment costs may from the outset be covered by revenues from the trucking operation.

Provision for purchase of five additional 25 ton trucks in the third year is made in the project budget.

Co-operative Promotion Section. The main tasks of this Section will be to promote the establishment of the primary co-operative societies and to supervise their current operations. In its supervisory work the Section would focus on the management and administration of the societies leaving the work directly related to the marketing function to the Field Management Section.

The work of the Section would follow the outline for co-operative promotion work provided above in Section 3.6.3. Largely the Section would "train the trainers" and supervise the work of co-operative organizers and marketing assistants in the field areas.

The co-operative training institute at Awassa as well as the training facility at CADU would be expanded to meet EPID's needs for manpower trained in co-operative principles and management. The Awassa institute would probably remain with MNCD & SA, and it would be the task of the Section to maintain a close liaison with the institute.

The Section has at present three expatriate specialists, and it is estimated that they would be required throughout EPID Phase II. In addition, a few expatriate associate experts may be assigned to assist in the promotion work in the field areas. DANIDA has through funds-in-trust made available to FAO provided all technical assistance and other support for EPID's co-operative promotion work to date, and it is expected that this support will continue to be forthcoming during EPID Phase II. No proposal for support from SIDA for this activity is, therefore, made here.

The Section will have an Ethiopian head and two Ethiopian co-operative promotion specialists working as counterparts to the expatriate advisers; in the third year two additional co-operative promotion specialists would be assigned. In conformity with current plans one Assistant Registrar would also be assigned to the Section from the outset, a second Assistant Registrar would be assigned in the third year.

While it is now foreseen that the Section would work out of EPID Headquarters, it will at a later time reassign the co-operative promotion specialists to the secondary unions leaving only a few senior staff with the Section at Headquarters.

Secondary Co-operative Unions. Ideally the secondary unions should be formed by the primary societies. However, as the primary societies will only have been very recently established, it will be impossible for them to devote any resources to forming a secondary union. The secondary unions will, therefore, be "imposed" on the primary societies, which will be forced to work closely with them.

In the future it is intended that the primary societies will have an increasing influence upon the operation

of the secondary unions. Eventually, the primary societies should be in a position to take over the total economic responsibility for the secondary unions and be fully responsible for their affairs. With a view to facilitating this transition each secondary union would have a Policy Advisory Committee with functions similar to those of the corresponding committee of the Co-operative Marketing Division.

The secondary unions would be established in conjunction with the offices of EPID's regional co-ordinators, and common use should be made of office and transport facilities, secretarial staff, accountants etc. The secondary unions would also work closely with the regional offices and secondary and terminal storage facilities of AMC and should, therefore, be located in the vicinity of these facilities.

Initially the main tasks of the secondary unions would be the following:-

- (1) Serve as co-ordinating points for the primary societies with regard to the distribution of agricultural inputs and to the supply of grains to AMC.
- (2) Conduct all accounting relating to output marketing for the primary societies.
- (3) Provide supervision and guidance to the primary societies with regard to all matters related to the conduct of their affairs and, in particular, the output marketing operation.
- (4) Furnish additional storage capacity, if required.

- (5) Co-ordinate the transportation of agricultural inputs and outputs in close collaboration with the Transport Section.

As the secondary unions after some years gain experience the following additional functions may be transferred to them from EPID Headquarters:

- (6) Full responsibility also for all accounting work related to marketing of agricultural inputs.
- (7) Co-operative promotion.
- (8) Sale of produce to other customers than AMC.

It is intended to gradually expand the offices of EPID's regional co-ordinators as "mini-EPID", i.e. furnish them with subject matter specialists able to solve local problems following guidelines issued by EPID Headquarters. This should also apply to the secondary co-operative unions which would gradually be provided with subject matter specialists in co-operative promotion and marketing.

In the long term all costs of the secondary unions should be covered by revenues, i.e. the secondary unions should be commercially viable entities. However, in the short term this is not likely to happen. Therefore, all costs of the secondary unions are budgeted for during the first three years of operation of each union. As mentioned above in section 3.5.3, revenues during these first three years would be accumulated into a fund that during subsequent years would be used for help cover any operating deficits incurred by the secondary unions as well as the primary societies.

In co-operation with the Field Management Section the secondary unions would provide support to the

primary societies in questions related to the management of their marketing operation. Gradually increasing responsibilities for such work would be transferred to the secondary unions from EPID Headquarters.

The primary societies would not be responsible for any accounting work, and this would be centralized to the secondary union in the same manner as CADU's Marketing Division is performing this task. The primary societies would have summaries of all purchases/sales made by them.

The accounts for input marketing are today maintained centrally for all EPID field areas. While it would be the intention to gradually transfer also the input accounting to the secondary unions, this should not be done immediately following their establishment but only after a few years, until which time the present arrangements for accounting therefore would continue. Even after the input accounting work has been transferred to the unions, separate accounts would continue to be maintained for input and output accounting respectively.

The secondary union would be headed by a co-operative manager with qualifications similar to those of the present regional co-ordinators (normally a second academic degree or extensive practical experience). An expatriate administrator would be provided for the first three years for the first five secondary unions to be established (see Section 3.6.5. below). In addition, the union would have two assistant accountants, two book-keeping machine operators, one senior co-operative organizer, secretaries and other supporting staff.

The ability of the secondary unions to cover their costs would be highly dependent on volumes handled. If progress in co-operative formation initially is

slow, and only a relatively small number of primary societies has been established, the union may be heavily dependent on input marketing for cost coverage. In such a case the staffing of the secondary union would have to be scaled down to conform with the volume of outputs handled.

Primary societies. Only members should be able to benefit from the services of the primary societies. This means that only members would be able to purchase fertilizers and other inputs from the societies and only members would be able to sell produce to them. This would be the primary incentive for the farmers to join the primary societies.

Extension services in agriculture, animal husbandry, home economics and related fields would continue to be provided by EPID both to the members of the primary societies and to other farmers. The cost of such services would be a development cost borne by IEG. These activities would also in the future be supervised by EPID staff in the same manner as at present.

Initially it may be expected that in any given MPPA there may be some established primary co-operative societies and also some areas, where the farmers' response to co-operative formation has been less positive and where EPID, therefore, continues to maintain its own marketing centres. In such cases the EPID supervisor would be expected to continue to provide current supervision also for the primary societies, deposit cash on their behalf in a nearby bank, report any management deficiencies to his coordinator for forwarding on to the secondary union etc. When the number of primary societies dominate in a MPPA, such current supervision would be taken over fully by the unions. The EPID supervisor's role would then only focus on the extension services.

Also the primary societies would only be expected to assume full responsibility for salaries and other operating costs after three years of full-scale operation. Until that time revenues would be accumulated into the fund controlled by the secondary union. During the first three years the operating costs of the primary societies (excepting direct handling costs of the marketing operation) would be budgeted by EPID as at present. Deficits would after the initial three year period be covered out of the fund at the disposal of the secondary union.

The present EPID marketing assistants and guards would be transferred to the primary societies as soon as these are established. In societies with large volumes of handled produce the assignment of additional marketing assistants may be called for. Their salaries would all after the initial three year period be paid by the primary societies.

EPID would erect a 200 ton store for each primary society and provide certain simple marketing and office equipment (platform scales, hand operated winnowing machines, an adding machine etc.), and the society would be expected to reimburse EPID for the depreciated value of these facilities. If sales proceed satisfactorily and the likelihood of operating deficits appears remote, the aforementioned fund may be used for such reimbursements at a relatively rapid rate. If volumes handled grow only slowly, a long term repayment plan would have to be elaborated.

The activities of the primary societies should be adapted as closely as possible to the characteristics of farming conditions in each area. Some societies to

would focus their work on sale of grains, other may wish to focus on animal production, beekeeping, sale of timber etc. In its co-operative promotion work EPID would have to ensure that such a flexibility in the work of the societies is brought about.

Staffing Plan. A comprehensive staffing plan for the Co-operative Marketing Division is presented in table 19 on the following pages.

3.6.5. Time Phasing

As has been set out previously in this Chapter, the Division will have to work in close co-operation with AMC. If it is not effectively backstopped by AMC, its prospects of successfully improving marketing conditions for small farmers are likely to be in danger. It is, therefore, necessary that the activities of the Division and of AMC are initiated in the field in accordance with a co-ordinated time schedule.

AMC will initiate its work programme as follows in the different provinces of the country⁽¹⁾:-

- (a) 1975/76: Preparation for an active buying and storage program in Tigre, Wollo and Bale Provinces, with general marketing support for MPPAs in Shoa.
- (b) 1976/77: Active market intervention in the aforementioned provinces.
- (c) 1977/78: Preparation for marketing in Harrarghe, Gojjam, Illubabor and Keffa Provinces and continuation of marketing in the first four provinces as well as limited market support to the MPPAs in Sidamo.

(1) Imperial Ethiopian Government: Grain Storage & Marketing Project, p.12.

Table 19 : Staffing Plan for the

<u>Unit/Name of post</u>	<u>Staff</u>
<u>Heads of Division</u>	<u>Category (1)</u>
Head of Division	HL
Ass. Head of Division	Exp. (SIDA)
Management assistant	HL
Secretary	ML
<u>Cost Accounting Unit (2)</u>	
Cost accountant	Exp. (SIDA)
Cost accountant	HL
Assistant accountant	ML
Book-keeper	ML
<u>Sales & Purchase Section</u>	
Sales & purchase manager	HL
Ass. sales & purchase manager	HL
Sales & purchase specialist	HL
Assistant accountant	ML
Typist	ML
<u>Field Management Section</u>	
Senior marketing specialist (Head of Section)	HL
Co-operative marketing specialist	Exp. (SIDA)
Pulse marketing specialist	Exp. (USAID)
Animal products marketing specialist	Exp. (SIDA)
Marketing specialist	HL
Secretary/Typist	ML
Driver (4)	LL
Office boy (4)	LL
Cleaner (4)	LL

Co-operative Marketing Division

Number of posts per year

<u>1975/76</u>	<u>1976/77</u>	<u>1977/78</u>	<u>1978/79</u>	<u>1979/80</u>
1	1	1	1	1
1	1	1	1	1
-	-	1	1	1
1	1	1	1	1
1	1	1	-	-
1	1	1	1	1
1	1	2	2	2
2	2	3	3	3
1	1	1	1	1
1	1	1	1	1
-	-	2	2	2
1	1	1	1	1
1	1	1	1	1
1	1	1	1	1
1	1	1	1	1
1 (3)	1 (3)	- (3)	-	-
-	-	1	1	1
2	2	4	4	4
2	2	2	2	2
2	2	2	2	2
2	2	2	2	2
2	2	2	2	2

Table 19 : Staffing Plan for the

<u>Unit/Name of post</u>	<u>Staff Category (1)</u>
<u>Market Planning & Intelligence Section</u>	
Market analyst (Head of Section)	HL
Market analyst	Exp. (SIDA)
Marketing specialist	HL
Statistician	HL
Statistical assistant	ML
typist	ML
<u>Transport Section</u>	
Transport manager	HL
Assistant transport manager	HL
Clerk (5)	ML
Typist (5)	ML
Truck drivers (5)	ML
Drivers' helpers (5)	LL
Office boy (5)	LL
Cleaner (5)	LL
Guards (5)	LL
<u>Co-operative Promotion Section</u>	
Head of Section	HL
Co-operative promoter I	Exp. (FAO)
Co-operative promoter II	Exp. (FAO)
Co-operative promoter III	Exp. (FAO)
Associate expert I	Exp. (FAO)
Associate expert II	Exp. (FAO)
Associate expert III	Exp. (FAO)
Co-operative promotion specialist	HL
Assistant registrar	HL
Secretary	ML
Driver	LL

Co-operative Marketing Division (ctd.)

Number of posts per year

<u>1975/76</u>	<u>1976/77</u>	<u>1977/78</u>	<u>1978/79</u>	<u>1979/80</u>
1	1	1	1	1
1	1	1	1	1
-	-	2	2	2
1	1	1	1	1
1	1	1	2	2
1	1	1	1	1
1	1	1	1	1
1	1	1	1	1
1	1	1	1	1
1	1	1	1	1
25	25	25	35	35
25	25	35	35	35
1	1	1	1	1
1	1	1	1	1
4	4	4	4	4
1	1	1	1	1
1	1	1	1	1
1	1	1	1	1
1	1	1	1	1
1	1	-	-	1
1	1	-	-	1
1	1	-	-	1
4	4	4	4	4
1	1	2	2	2
1	1	1	1	1
1	1	1	1	1

Table 19 : Staffing Plan for the Co-operative Marketing Division (ctd.)

<u>Unit/Name of post</u>	<u>Staff category (1)</u>	<u>Number of posts per year</u>				
		<u>1975/76</u>	<u>1976/77</u>	<u>1977/78</u>	<u>1978/79</u>	<u>1979/80</u>
<u>Secondary Co-operative Union (6)</u>						
Co-operative manager	HL	1	1	1	1	1
Administrator	Exp. (SIDA)	1	1	1	-	-
Assistant accountant ^o	ML	1	1	2	2	2
Book-keeper	ML	1	2	2	2	2
Book-keeping machine ^o operator	ML	1	1	1	1	1
Secretary/Typist	ML	2	2	2	2	2
Senior co-operative organizer	HL	1	1	1	1	1
Driver	LL	2	2	2	2	2
Office boy	LL	1	1	1	1	1
Cleaner	LL	1	1	1	1	1
Guard	LL	2	2	2	2	2
<u>Primary Co-operative Society (7)</u>						
Marketing assistant (store manager)	ML	1	1	2	2	2
Guard	LL	2	2	3	3	3

Footnotes

- (1) HL - Ethiopian high level staff, i.e. all staff with university training
ML - Ethiopian middle level staff, staff without university training but with a monthly salary exceeding Eth.\$250.
LL - Ethiopian low level staff, all personnel with a monthly salary of less than Eth.\$250.
Exp.- Expatriate staff.
- (2) Part of the Accounting Section, Common Services Division.
- (3) The duration of this assignment with EPID will be determined in the light of the progress in the establishment of AMC.
- (4) These posts are common for the entire Division at EPID Headquarters except the Transport Section.
- (5) Needed for this Section as it is to be located separately from EPID Headquarters.
- (6) For one union assuming it is established in early 1975/76.
- (7) For one primary society assuming it is established in early 1975/76. Costs to be charged against MPP and not against the Co-operative Marketing Division.

- (d) 1978/79: Preparation in Wollega province and active marketing in all provinces previously mentioned.
- (e) 1979/80: Preparation in Begemdir and active marketing elsewhere.

This phased programme should, however, only be understood to be indicative, and it would be left to the management of AMC and of the Co-operative Marketing Division to work out the details of which areas should be given priority. It will, in any case, be evident that output marketing cannot be initiated simultaneously all over the country, and that a successive phasing of the spread of this programme over the country will be called for taking into account (a) grain surplus and deficit areas to be included equally, (b) co-operative promotion, (c) accessibility of major markets, (d) resource availability, and other factors.

The phasing indicated above and included in the current AMC proposal probably represents what available capabilities may permit AMC to accomplish. It is highly unlikely that any faster rate of expansion may be possible.

On the other hand, input marketing must, of course, cover the entire country and all EPID field areas as fast as possible. It is then clear that temporary difficulties may arise in areas where agricultural inputs are required but where there are yet no stores constructed, where no secondary unions have yet been established, and where little progress has yet been made in co-operative formation. The input marketing work in these areas will initially have to be largely conducted directly out of EPID Headquarters.

The stores constructed under the rehabilitation programme in Tigre, Wollo, Harrarghe, Shoa and Gemu Goffa will give these provinces a head start in the marketing programme. However, these stores have all been constructed in deficit areas and are therefore for the next few years likely to be used mainly

for input distribution and for sale to farmers of grains acquired elsewhere by AMC.

Tentatively, the following phasing is suggested for the establishment of the secondary unions:

- | | |
|---------------------|-----------|
| 1. Mekele | - 1975/76 |
| 2. Addis Ababa | - 1975/76 |
| 3. Awassa | - 1975/76 |
| 4. Dessie | - 1976/77 |
| 5. Harrar/Dire Dawa | - 1976/77 |
| 6. Jimra | - 1977/78 |
| 7. Lekenpt | - 1977/78 |
| 8. Bahar Dar | - 1978/79 |

Any primary co-operative societies established in Eritrea and Gemu Goffa/Bale would be supervised from the secondary unions in Mekele and Awassa respectively.

The secondary unions would thus initially have a regional character. After EPID Phase II it may be possible to increase their number with a view to eventually having a secondary union in each province.

The difficulty is that progress in co-operative formation is likely to be very uneven and "spotty" initially and may not follow this phasing. For instance, there are already today viable small farmer co-operatives in Keffa and Wollega provinces, and they cannot be allowed to wait to undertake output marketing until 1977/78. The Division must ensure that special consideration is given to societies formed "ahead of schedule," supervise them directly from EPID Headquarters until the secondary union is formed, and deliver their produce directly to the nearest AMC regional store (which in many cases may be Addis Ababa). On the other hand, the emphasis in the co-operative promotion work should follow the phasing indicated above, and the intention should be to establish primary societies in conformity with it.

3.6.6 Costs of the Co-operative Marketing Division

The staff shown in table 10 above have been costed as follows:

Head of Division	- Eth.\$18,000 per annum
Head of Section	- Eth.\$14,400 " "
Subject Matter specialist (M.A.)	- Eth.\$12,000 " "
Subject Matter specialist (B.A.)	- Eth. \$7,200 " "
Assistant accountant	- Eth. \$6,000 " "
Book-keeper, statistical assistant	- Eth. \$4,200 " "
Secretary	- Eth. \$6,000 " "
Typist	- Eth. \$4,200 " "
Office boy	- Eth. \$1,200 " "
Driver	- Eth. \$2,400 " "
Cleaner, guard	- Eth. \$ 900 " "

All expatriate staff have been costed at Eth.\$78,000 per annum regardless of donor agency.

An annual increment of five per cent is provided to all incumbent staff. In addition, an increment of ten per cent is added to all Ethiopian staff costs to cover costs for pension scheme, insurance and other personnel costs.

Each Ethiopian high level staff and expatriate staff is provided with a set of office furniture costed at Eth.\$1,300. This includes desk, swivel chair, bookcase, carpet, one filing cabinet, two visitors' chairs, lamp, heater, and miscellaneous minor items. Each middle level staff is provided with the same set of office furniture excepting the filing cabinet, and these sets are costed at Eth.\$1,000 each. One typewriter at Eth.\$1,000 is provided to each secretary and typist. One calculating machine at Eth.\$1,000 is provided per two high level, middle level and expatriate staff excepting secretaries and typists.

Each secondary union is provided with a book-keeping machine costed at Eth.\$30,000. The secondary unions are also provided with funds for office supplies and materials (Eth.\$10,000 per union per year) and for office rental (Eth.\$6,000 per year).

The Co-operative Marketing Division at EPID Headquarters is provided with Eth.\$20,000 for office materials and supplies (this amount increases annually by Eth.\$5,000), Eth.\$36,000 for office rental, and Eth.\$20,000 for miscellaneous supplies and services (this amount increases to Eth.\$30,000 in the third year and Eth.\$40,000 in the fourth year).

At the outset the Division at EPID Headquarters is provided with six four-wheel drive vehicles, each newly established secondary society is provided with two such vehicles. Each four-wheel drive is costed at Eth.\$20,000, is assumed to be driven 20,000 km per year, will be depreciated after five years or 100,000 km, will have an operating cost of Eth.\$0.50 per km, and will thus cost Eth.\$10,000 per year to operate.

In the third year (1977/78) five 25 ton trucks are provided at a unit cost of Eth.\$75,000. Their operating costs are assumed to be covered by revenues.

Each Ethiopian high level and expatriate staff is presumed to require Eth.\$1,500 for per diem per year, each middle level staff will require Eth.\$750, and each driver Eth.\$1,000. Air travel has been costed at Eth.\$2,000 annually for each high level and expatriate staff member.

For transportation of goods the Division has been provided with Eth.\$15,000 per year, each secondary union with Eth.\$5,000 per year.

For unspecified materials and services the Division is provided with Eth.\$50,000 in the first year. This amount increases annually by Eth.\$25,000.

As mentioned above, the Transport Section should, in principle, cover its own costs. Except for the salaries, no other operating costs have, therefore, been budgeted for the section. However, investment costs for office equipment and furniture and for the five additional trucks are provided.

The secondary unions should, in principle, cover their costs after their third year of operation and after the third year no costs are budgeted for each secondary union. It is not envisaged that they will pay back to EPID the cost for those assets initially provided to them.

The costs incurred during the initial three years by the primary societies are assumed to continue to be budgeted under MPP, as they have in the past. The cost of the 200 ton stores, cleaning equipment etc. is provided under either MPP for all primary societies.

Under these assumptions the total cost of the Co-operative Marketing Division will be during EPID Phase II as shown in table 20.

Table 20: Total Costs of the Co-operative Marketing Division

TYPES OF COSTS	1975/76	1976/77	1977/78	1978/79	1979/80	TOTAL	PER CENT
Ethiopian Staff	750,420	926,541	1,227,731	1,166,175	1,154,073	5,224,940	36.7
Expatriate Staff	1,092,000	1,302,600	1,101,785	705,384	560,428	4,762,197	33.5
Investments: Vehicles	240,000	40,000	415,000	20,000	-	715,000	5.0
Investments: Office Furniture and equipment	216,650	93,450	108,800	48,050	1,750	468,750	3.3
Operating Costs: travel and transportation	295,750	345,250	420,750	353,250	306,750	1,721,750	12.1
Operating Costs: Office supplies and materials	124,000	161,000	208,000	181,000	164,000	838,000	5.9
Operating costs: Sundry Services	50,000	75,000	100,000	125,000	150,000	500,000	3.5
T O T A L L	2,768,820	2,943,841	3,582,066	2,598,859	2,337,001	14,230,587	100.0

The above costs exclude such cost items that are directly related to technical assistance from FAO and USAID and financed from these sources.

The cost is at its peak in the third year. In this year there would be seven secondary unions all fully costed under this budget. In the fourth year the first three unions are expected to begin to be able to cover their own costs and are, therefore, excluded from the budget.

3.6.7 Financing of the Co-operative Marketing Division

It is proposed that the Division be financed in roughly the same manner as CADU is being financed at present, i.e. by SIDA covering 67 per cent of the net total cost through contributions in cash. IEG would cover the remaining 33 per cent out of its capital budget.

The requirements of the Division for expatriate personnel may be summarized from table 21 as follows:

Table 21: Man-years of Technical Assistance to the Co-operative Marketing Division

<u>Year</u>	<u>SIDA</u>	<u>M a n - y e a r s</u>		<u>TOTAL</u>
		<u>FAO</u>	<u>USAID</u>	
1975/76	7	6	1	14
1976/77	9	6	1	16
1977/78	10	3	-	13
1978/79	5	3	-	8
1979/80	3	3	-	6
T o t a l	34	21	2	57

As earlier indicated, each man-year of technical assistance is costed at Eth.\$78,000 regardless of the source. An annual increment of 5 per cent is provided for. All technical assistance is presumed to be given on a grant basis.

The proposed financing of the Co-operative Marketing Division would be as indicated by table 22 on the following page. The

Table 22 : Proposed Financing of the Co-operative Marketing Division

YEAR	OPERATING COSTS		TECHNICAL ASSISTANCE			TOTAL
	IEG Capital BUDGET	S I D A	S I D A	FAO (DANIDA)	USAID	
1975/76	553,351	1,123,469	546,000	468,000	78,000	2,768,820
1976/77	541,610	1,099,631	729,300	491,400	81,900	2,943,841
1977/78	818,493	1,661,788	843,800	257,985	-	3,582,066
1978/79	624,847	1,268,628	434,500	270,384	-	2,598,859
1979/80	586,269	1,190,304	276,000	284,428	-	2,337,001
Total	<u>3,124,570</u>	<u>6,343,820</u>	<u>2,829,600</u>	<u>1,772,697</u>	<u>159,900</u>	<u>14,230,587</u>

total amount of funds required from IEG sources would be about Eth.\$3.1 million. SIDA's contribution over the five year period would be as follows per year:

		<u>Eth.\$</u>
1975/76	-	1,669,469
1976/77	-	1,828,931
1977/78	-	2,505,588
1978/79	-	1,703,128
1979/80	-	1,466,304
T o t a l	-	9,173,420 (64.5% of the total cost)

It should be noted that not all of the total cost of Eth.\$14,230,587 represents an incremental cost. At present EPID has a Co-operative Promotion Section and a Marketing & Credit Section budgeted at a total annual cost of Eth.\$606,250. These two sections would, of course, be merged into the Co-operative Marketing Division, and for the five year period the cost of Eth.\$3,031,250 could thus be deducted from the total cost as the cost of maintaining the present activities at their current level. The total incremental cost for the establishment of the Co-operative Marketing Division would then be Eth.\$11,199,337.

3.6.8 Benefit/Cost Analysis

It is very difficult to carry out a benefit/cost analysis of the Co-operative Marketing Division with any reasonable degree of accuracy. The establishment of the Division cannot be isolated from the establishment of AMC, and benefits/costs should preferably be computed for the agricultural marketing network as a whole. In addition, the estimation of benefits meets with technical problems. "It is inherent in this type of project that most benefits are not quantifiable. It is also true that evaluation of those benefits which can be measured must be based upon numerous assumptions which might be subject to a wide range of social, political and economic

influences outside the control or influence of the Project"⁽¹⁾.

In the case of the Co-operative Marketing Division, in particular, an estimation of economic benefits may be misleading, since perhaps most of the benefits expected to accrue to the target populations from its establishment have a social character. It is through the establishment of a network of viable co-operative societies that EPID hopes to raise the social awareness of farmers in its field areas, provide them with an instrument for improving their collective bargaining power in relation to the traditional power holders in rural areas, and create a means whereby the farmers themselves, in the future, may assume the responsibility for the conduct of part of EPID's present operations. The social benefits from the creation of a system of viable co-operative societies oriented towards small farmers would be substantial, and yet they would be very difficult to quantify.

The economic benefits of the AMC proposal are calculated on the basis of⁽²⁾

- (a) reduction in transport cost through avoidance of double transport;
- (b) reduction of transport costs through grain cleaning at primary buying centres and secondary storage facilities;
- (c) reduction of storage losses from a level of about 2% per month to 0.5% and eventually 0.1%.

Computing these benefits using the assumptions made in the AMC proposal gives an economic rate of return of 20% for AMC.

Since the Co-operative Marketing Division in many respects will be an integral part of AMC, and the primary societies will serve as buying centres for AMC, it may be argued that the

(1) Imperial Ethiopian Government: Grain Marketing & Storage Project. p. 50

(2) Ibid p. 51,

same approach to computing benefits should be adopted for the Division. It could similarly be argued that if AMC yields a sound economic rate of return, the same rate should be applied to the Division also, since the two projects are so closely interrelated.

However, the computation of economic benefits for AMC is done from a global perspective taking into account those benefits that will accrue to the Ethiopian economy as a whole from the project. An attempt is, therefore, made in the following to show the benefits of the Co-operative Marketing Division from the small farmers' point of view. Due to the very gossamer accuracy of the assumptions, this calculation should be viewed only as a numerical example intended to illustrate the economic viability of the Co-operative Marketing Division. Those benefits shown in the example do not purport to be anything but very rough estimates.

Each primary co-operative society is assumed to develop its purchases of grains as follows:

Year 1	-	4,000 qt
Year 2	-	6,000 qt
Year 3	-	7,500 qt
Year 4	-	8,500 qt
Year 5	-	9,000 qt
and on		

If all farmers wishing to purchase inputs from and sell outputs to a primary society have to become members to the able to do so, a membership of about 500 farmers in the first year would not appear improbable. The above assumptions would then mean that each member/farmer would bring eight quintals of grains for sale to the society in the first year.

The membership of the society as well as the quantity of grains sold by each member to the society would gradually increase over the first five years and is then assumed to remain constant.

The number of primary co-operative societies established within the region of a secondary union is assumed to develop as follows:

Year 1	-	10 primary societies
Year 2	-	17 " "
Year 3	-	22 " "
Year 4	-	25 " "
Year 5	-	28 " "

The average value of grains sold at farm gate is put at Eth.\$15 per quintal, and it is estimated that the farmer by selling to the co-operative in lieu of the private traders will gain benefits equivalent to 20% of this value or Eth.\$3 per quintal. These benefits would be composed of the presumed absence of cheating by the co-operative relative to private traders, of higher prices paid by the co-operative relative to private traders, and of dividends paid by the co-operative to its members.

Using these assumptions the benefits generated to farmers by all primary societies affiliated to one secondary union would be as shown by the table 23 below.

Table 23: Benefits to Farmers Generated by one Secondary Co-operative Union

Year	Volume of grains handled (qt)	Value of grains handled (\$)	Benefits to farmers at 20% of value (\$)
1	40,000	600,000	120,000
2	88,000	1,320,000	264,000
3	137,000	2,055,000	411,000
4	179,500	2,692,500	538,500
5	217,000	3,255,000	651,000

Using the phasing of the secondary unions, as discussed above in Section 3.6.5, the total benefits generated by the eight unions proposed to be established during EPID Phase II would over a ten year period be as follows:

<u>Year</u>	<u>Benefits to farmers (Eth.\$)</u>
1	360,000
2	1,032,000
3	2,001,000
4	3,085,500
5	4,116,000
6	4,743,000
7	5,095,500
8	5,208,000
9	5,208,000
10	5,208,000

Costs are assumed to remain during the second half of the ten year period on the same level as in the fifth year (see table 20). From then onwards the secondary unions are expected to be able to cover their operating costs from revenues. The Co-operative Marketing Division at EPID Headquarters is assumed to continue to work at the same level as in its fifth year during the remainder of the ten year period.

Discounting total benefits and costs, computed as discussed above, gives an economic rate of return over the ten year period of 20.0%. This is a fully satisfactory rate of return, and it is apparent that also under more conservative assumptions the Division would be economically viable.

It is clear that this analysis in certain respects is misleading, since it does not take into account the costs of establishing AMC as an essential supporting institution, and since AMC would absorb part of the costs of marketing the output from the primary co-operative societies. It has already been mentioned that several of the assumptions are tenuous. However, the analysis does indicate that the costs

of establishing the Co-operative Marketing Division and the secondary unions would be more than compensated by economic benefits generated to farmers selling their produce through primary co-operative societies.

3.7 Summary of Proposal for Support by SIDA to EPID Phase II

Part 3 of this paper has outlined a proposal for support by SIDA to EPID Phase II. This support is to focus primarily on the new Co-operative Marketing Division for which no financial assistance is envisaged under the present IBRD/IDA loan for MPP. However, technical assistance would continue to be provided also to the present components of EPID roughly on a scale similar to that of EPID Phase I.

The technical assistance proposed to be provided by SIDA to EPID Phase II is summarized in the table below by organizational unit.

Table 24: Man-years of Technical Assistance Support by SIDA to EPID Phase II

Organization unit	1975/76	1976/77	1977/78	1978/79	1979/80
Head of Department	1	1	1	1	1
Planning, Evaluation & Liaison Division	1	1	2	2	2
Common Services Division	4	3	3	1	1
Extension Division	7	7	7	3	3
Co-operative Marketing Division	7	9	10	5	3
Total man-years	20	21	23	12	10

It is thus proposed that SIDA provides a total of 86 years of expatriate expert services for the duration on EPID Phase II.

If each man-year of technical assistance is costed at Eth. \$78,000, the total cost of SIDA's support to EPID Phase II would be as indicated by table 25 below.

Table 25 : Summary of Support by SIDA to EPID Phase II

<u>ORGANIZATIONAL UNIT</u>	<u>1975/76</u>	<u>1976/77</u>	<u>1977/78</u>	<u>1978/79</u>	<u>1979/80</u>
<u>TYPE OF ASSISTANCE</u>					
<u>Heads of Department</u>					
Technical Assistance	78,000	81,900	86,000	90,300	95,000
Special Studies	100,000	100,000	100,000	100,000	100,000
Training abroad	35,000	35,000	35,000	35,000	35,000
<u>Planning, Evaluation & Liaison Division</u>					
Technical Assistance	78,000	81,900	164,000	172,200	181,000
<u>Common Service Division</u>					
Technical Assistance	312,000	245,700	258,000	90,300	95,000
<u>Extension Division</u>					
Technical Assistance	546,000	573,300	602,000	270,900	285,000
Training facility at CADU	300,000	-	-	-	-
<u>Co-operative Marketing Division</u>					
Technical assistance	546,000	729,300	843,800	434,500	276,000
Budget support	1,123,469	1,099,631	1,661,788	1,268,628	1,190,304
Total Eth.\$	3,118,469	2,946,731	3,750,588	2,461,828	2,257,304
Grand Total, 1975/76 - 1979/80	= <u>Eth. \$14,534,920</u>				

It is clear that the total of about Eth.\$14.5 million is but a rough estimate. This figure will change if SIDA increases its pro forma cost for a man-year of expatriate personnel beyond Eth.\$78,000. However, since expatriate personnel would be furnished on a grant basis, such a change would not affect the contributions to be made by IEG to EPID Phase II. A new Plan of Operation for EPID would have to specify the number of ~~man~~-years of expatriate personnel services to be provided in addition to specific amounts allocated for budget support to the Co-operative Marketing Division and for special studies and training.

Ministry of Agriculture

E P I D

List of EPID Publications

1. A Master Plan for the Extension and Project Implementation Department of the Ministry of Agriculture, October, 1970
2. Supply - Demand Prospects and Development Problems for Ethiopian Agriculture, by Nils-Ivar Isaksson, June, 1971
3. Plan of Operation for EPID 1971/72 - 1974/75, July, 1971
4. EPID Work Programme and Budget 1971/72, July, 1971
5. Fertilizer and Variety Trials and Demonstrations in Ethiopia, 1971-72, June, 1972
6. Minimum Package Project Programme, Loan Application to IBRD/IDA, July, 1972
7. Feasibility Study on the Integration of Animal Production and Marketing Extension Activities in EPID's Minimum Package Programme, by H. Bertholdson, E. Brannang and G. Oscarsson, October 1972
8. Crop Samplings in Ethiopia, 1970/71 - 1971 - 72
9. Results from the Surveys of the Basic Farm Conditions in Ethiopia, 1971 - 72
10. Fertilizer and Variety Trials and Demonstrations in Ethiopia, 1972 - 73
11. Work Programme and Budget 1972-73 & 1973/74
12. Results in Details from Fertilizer Demonstrations on Farmers Fields, 1972/73, June, 1973
13. EPID Annual Report for the 1971/72 Financial Year, June, 1973.

14. Increasing Efficiency in the National Grain Marketing System of Ethiopia - A Policy Guideline, by Bo Wickstrom October, 1973
15. EPID Annual Report for the 1972/73 Financial Year, December 1973
16. Short-Term Recovery Programme for the Drought Stricken Provinces of Ethiopia, January 1974
17. Work Programme and Budget for EPID 1974/75 and 1975/76, February 1974
18. Integrated Agricultural Extension Approach to Subsistence Farm Households - Policy Guidelines for Home Economics Extension Programme, by Ingrid Janelid, April 1974
19. Crop Sampling Survey 1973/74, by Aynallem Aregahegne, May 1974
20. Medium-Term Rehabilitation Programme For Settled Agriculture in Drought Stricken Provinces of Ethiopia, August, 1974
21. EPID Phase II - Proposals for the Expansion of EPID During 1975/76 - 79/80 and for Support by SIDA, August 1974.