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Preliminary

R E P O R T O F T H E

A P P R A I S A L T E A M

on the

CHILALO AGRICULTURAL DEVELOPMENT UNIT

C A D U

REPORT OF THE EXPERT TEAM TO THE IMPERIAL ETHIOPIAN AND SWEDISH GOVERNMENTS

November 1969

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CADU APPRAISAL TEAM PRELIMINARY REPORTIntroduction

1. Following a visit to Ethiopia by a group of Swedish agricultural experts in August 1965, the Swedish and Ethiopian governments agreed in March 1966 that a project preparation mission from Sweden should undertake a preliminary study to choose a region, and prepare a project outline, for Swedish assistance to a regional development project in Ethiopia. After several reports by the preparatory mission, the two governments agreed in September 1967 to implement a project in the Chilalo Awraja of Arussi Province. This agreement covered an initial three-year period but it was originally envisaged that, if successful, the project might have a continued life of up to thirteen years. An executive body, the Chilalo Agricultural Development Unit, was instituted to carry out the programme under the supervision of the Ethiopian Minister of Agriculture. In the initial period the project was expected to serve an area containing about 100,000 people. In later years the project might be expanded to serve an area containing nearly 400,000 people. For the initial period the net cost of the project (including the cost of land and existing buildings) was expected to reach a total of nearly E.\$14 million while over thirteen years it might reach a cumulative total cost of about E.\$51 million.

2. In the plan of operation attached to the original agreement, it was laid down that towards the end of the three-year initial period the Executive Director of CADU should prepare a final report constituting a comprehensive evaluation of the project. At a subsequent point in time it was decided that this Final Report should itself be appraised by a team of four members (referred to hereafter as "the team") of whom two should be appointed by the Ethiopian and two by the Swedish governments. The Ethiopian government appointed Ato Tekalign Gedamu and Professor B. Milosavljevic and the Swedish government Professor Rene Dumont and Professor Torsten Gårdlund. However the necessity for early decision about the future of the project led to a further modification of this plan by which the team were requested to evaluate the project directly.

3. The team were not given precise restrictions in their terms of reference which they therefore felt able to interpret very widely to cover consideration of the objectives of CADU, the efficiency with which it carried out its operations, the extent to which it achieved its objectives, the project's own future, and the extent to which it could be used as a model for future projects in Ethiopia. Subsequent sections of this report cover each of these topics. It must be borne in mind, however, that, in such a short period of time as was available to the team, it was not possible to do real research or to go very deeply into any of these topics and the report is inevitably based on the information given to the team, and on their observation and discussions of only a few days. Most of this report consists of joint contributions of the team as a whole. One part, however, the overall appraisal, represents the individual views of different team members.



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4. The two members of the team not already working in Ethiopia arrived by air on August 18th, 1969 and left again on August 30th. Between August 21st and 27th the team visited the project area in the Arussi Province. During the whole period the team were accompanied by Mr. Göran Nyberg and Mr. Stephen Sandford. The latter was also responsible for editing the entire report.

5. The team would like to take the opportunity of acknowledging the assistance and hospitality extended to them by CADU officials, members and officials of the Ethiopian government, and by others both in Addis Ababa and Asella, and in particular by H.E. Ato Tesfa Bushen and Dr. Bengt Nekby.

The objectives of CADU

6. To evaluate any project it is necessary to refer to the objectives which it is intended to achieve. The objectives of CADU in the period 1967-1970 are formally stated at Article I of the 1967 agreement between the Ethiopian and Swedish governments in the following way:- "The purpose (of the project) shall be to establish suitable methods of, and to train staff for, regional agricultural development in Ethiopia". The plan of operation, annexed to the 1967 agreement, also stated that the long range purpose of the project's activities, provided the aim of the three-year programme is attained, is to broaden the scope of, and intensify, the development effort within the Chilalo Awraja, and later within the whole of Arussi Province. The plan of operations also states "the active participation of the local population in the project is not only a means of development, but is regarded as a goal in itself."

7. In discussion with the Executive Director of CADU it was clear that he considered that CADU in the first three years had four objectives which can be summarised as:-

- (i) Economic development of the area;
- (ii) Establishing suitable methods of regional agricultural development;
- (iii) Training staff for CADU and other similar projects;
- (iv) Improving the ability of the local population to participate in, and be responsible for, their development.

For the period 1970-1975 the Executive Director (see CADU publication No. 26 p. 12) has suggested that the objective of economic development should take precedence over the others.

8. The team feel that continuing emphasis in the future, as in the 1967 agreement, should be put on the objective of establishing suitable methods for agricultural development. It is, of course, true that no



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method of agricultural development is suitable that does not itself promote overall economic development, and to this extent it is highly desirable that the project's direction should put such emphasis on the economic aspect. Nevertheless the team feel that, from the point of view of the project's sponsors, in the future as in the past the project's main value will hinge on its ability to devise methods of agricultural development which can then be applied not only in Chilalo but also elsewhere in Ethiopia; and that CADU should therefore continue to be prepared to modify and adapt its approach with this aim in view, even if this were to involve some costs which were not justifiable in the circumstances of Chilalo alone. Of course, the team appreciate that it has never been part of the plan that CADU should compare in a proper experimental design the merits and disadvantages of different methods of agricultural development in order to select the best. However the team feel that CADU could and should try out in ad-hoc ways various modifications of the present approach, both as to the organization of CADU (e.g. in giving performance - related financial incentives to project staff or in establishing the relationship between different departments on a semi-commercial basis) as well as to agricultural techniques.

9. The team also think that, now that CADU has become well established, more emphasis can be given in the future to training staff both for the expansion of CADU itself and for other similar projects. The team do not visualize formal training courses but rather the attachment of supernumerary posts; and this is a matter to which the sponsors of this or other projects should give some thought.

10. The team have some doubts whether "the active participation of the local population in the project" is really a suitable goal to be pursued for its own sake, rather than as a means of development, by a project such as CADU in which external technical assistance is playing such a prominent role. However the team believe that the project is not likely to contribute significantly to economic development unless the active participation of the local population is obtained, so that any difference between the views of the team and those of others on this point is, at the moment, one of theoretical rather than practical significance.

11. In establishing suitable methods of regional agricultural development the team do not think that the CADU organization should aim at ultimately becoming the executive agency for all activities involved in regional agricultural development. With two possible exceptions, the team do not believe that CADU should take over further executive responsibility from departments of government or other agencies outside the fairly broadly defined field of agricultural production. The two possible exceptions to this are road construction and maintenance, and water development. These two areas of activity fall within what the team consider to be the minimum package programme for agricultural development (see next paragraph) and, if CADU is not to take over as the executive agency in these fields, it is essential that some administrative



procedure is devised whereby the present executive agencies in these fields are able to respond rapidly and without uncertainty to CADU's needs in the Chilalo area. The team do not recommend that CADU's present executive responsibility in certain fields (primarily forest protection) which fall outside the team's concept of a minimum package programme should now be surrendered, although in the case of future projects of the CADU type it is doubtful whether they ought to be included.

12. During the course of their visit, the team gave some thought to the concept of the "minimum package programme". The management of projects in developing countries such as Ethiopia needs to steer a careful course between undertaking too few activities and too many. If too few activities are undertaken the success of these may be frustrated by the failure of other things to materialize which are outside the management's control. If too many are undertaken, management becomes overburdened by administration and coordination in an administrative environment in which administration and coordination are anyhow normally very difficult. Moreover, the project becomes very expensive and liable to criticism on grounds of extravagance.

13. The team take the view that regional agricultural projects should involve executive action only in those fields of activity between which there are such close interrelationships that failure in any one field is liable substantially to frustrate the effects of progress in the others. These closely related fields form the minimum package programme. Obviously this minimum package programme will differ from area to area, depending on the existing level of services, and from one type of production to another. For example, in tea or sugar production the programme must include the industrial processing of the crop whereas in grain production normally it need not. In almost all cases, as with CADU, the minimum package programme must include research and the transmission of research results into practice on farms through extension work, the supply of inputs and credit, and through marketing. Outside the minimum package programme it should be the aim of CADU in most cases to do the ground work (e.g. feasibility studies) necessary to attract other services or industries rather than to undertake the activities itself. Even within the minimum package it should be CADU's aim to make use of the services of existing institutions (e.g. the Grain Corporation and the Development Bank) rather than to replace them. Nevertheless CADU must retain a substantial measure of control in these fields.



Structure, Organization, and Internal Performance of CADU

14. Organizational charts showing the internal (as at April 1969) and external organization of CADU are given at figures 1 and 2 at the end of this report.

15. (1) Organization

The main organizational principle for CADU, indicated by the Project Preparation Team in its Report I:2 (October 1966) and embodied in the Plan of Operation a year later (section VII), implied that the project should be carried out as a separate undertaking of the Ethiopian Ministry of Agriculture. SIDA's influence in the project direction was to be limited to the discussion and approval of the annual Plans of work and Budgets within the framework of the agreed programme.

16. On the level of central administration, liaison was to be established through a Ministerial Committee. Liaison on the local level was to be brought about through an Awraja Development Committee, in which the Executive Body was to cooperate with awraja and woreda governors, provincial agricultural, educational and medical officers and representatives of the local farmers, tradesmen, etc.

17. The organizational system envisaged for CADU seems to have functioned well in its most essential part. The Executive Body of the Project has been given the administrative freedom necessary for efficient management, and the financial contributions from the Government have come forward without delay.

18. However, the liaison does not seem to have functioned as planned on the higher administrative level, or on the local level. That the Ministerial Committee has not been particularly active may be of little consequence, since the Ministry of Agriculture has given full and competent support to the Project. The lack of liaison on the local level seems more serious. Until now only one meeting has been held of the Awraja Development Committee, a meeting during which the popular representatives are said to have been reluctant to voice their opinions in deference to the presence of government officials. Even if further attempts to organize local popular participation are now being made, the present lack of organized local contacts must be said to be at variance with the original hopes of "unifying the interests of the central and local administration and private organizations" (Report I:2, p.19).

19. The question has been raised whether the technical staff of CADU has been open to contacts and professional cooperation with the agricultural research and experimental organizations active in Ethiopia. The team have been informed that all such organizations have been visited, most of them several times, that CADU research results deemed to be of particular professional interest have been published and circulated among the pertinent research organizations, and that several



consuming without giving very obvious benefits.

## Recruitment

incoming personnel is normally curtailed or cut out.

The recruitment of expatriate staff has been the responsibility

College.

The recruitment base for a bilateral project set up by a small

market situation and thinking in terms of conventional remuneration.

There may be several ways to improve the recruitment of expatri-

Germany - should not to any large degree jeopardize the professional



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unity of the team of experts. It would certainly imply a considerable widening of the recruitment base to professionally competent candidates from countries with a somewhat lower standard of living than Sweden and therefore having a lower supply price. Although there may be certain technical difficulties in turning a nationally-oriented recruitment organization towards a foreign labour market, these difficulties should not be insurmountable. They ought, at any rate, to be judged against the background of the present unsatisfactory national recruitment operation.

24. Part of the remuneration of staff takes the form of housing, health organization and leisure facilities. For a hardship post, this non-monetary part may be of decisive importance for the outcome of the recruitment operation, especially after a period of time when the supply of especially dedicated candidates has been used up.

25. The team found the houses in Assella offered to families and to some high level bachelors to be of reasonable quality but certainly not luxurious. The single rooms (with private toilet and shower) for bachelors are frugal but not unacceptable. The number of houses is, however, insufficient. Whereas the original plan was for 50 houses, only 20 have been built until now. This means that ten expatriate officers have to live in Addis Ababa, 175 km away, and spend the working week in bachelors' quarters in Assella. Only four Ethiopians have the privilege of living in project houses and fifteen in bachelors' quarters, whereas the large majority of Ethiopian staff have had to find quarters in the nearby town of Assella. For a professional elite normally used to the living conditions of the capital this cannot be a very pleasant alternative.

26. Leisure time arrangements are as yet largely non-existent: no club-house, (although one is scheduled to open in September 1969) no tennis court or other sport facilities. However, an entertainment committee has been organized and there are plans for all the aforementioned facilities plus a camping area at a suitable distance from the project centre.

27. The health organization of the project also seems to have deficiencies which, if known to expatriate candidates, must in many cases act as recruitment deterrents. The present medical arrangement is that CADU personnel have access to the small clinic which is operated by the nearby mission and staffed with an expatriate nurse. For major injuries or illnesses CADU personnel are referred to the Assella hospital, which is presently staffed by two expatriate physicians. This hospital is supposed to take care of emergency cases, and the physician in charge will decide if a transfer to Addis Ababa is necessary. The CADU project physician has no place in the personnel health organization but has often given medical advice to his compatriots on a personal basis. During 1969 certain minimum emergency equipment - for oxygen resuscitation, tracheotomy etc. - has been supplied by SIDA to the mission clinic and the Assella hospital. The ambulance



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also requested by the project physician was not deemed necessary, in spite of the fact that only one ambulance now exists for the whole district. However arrangements are now in hand to convert an existing vehicle into an emergency ambulance.

28. Given the health hazards of the country and the recruitment difficulties encountered, the team feel that the medical emergency organization should be looked into once again and that an arrangement be made with the project physician, whereby he undertakes to advise in emergency situations and also to have regular consulting hours for both Ethiopian and expatriate personnel. The team understand that this procedure has now been started since its visit.

29. An improvement in CADU housing, health organization and leisure time installations should also be of considerable importance to improved recruitment of Ethiopian staff. There seems to be a general impression in Ethiopian official circles that salaries paid to Ethiopian staff of CADU are higher than is normal elsewhere in the government service. This does not seem to be born out by the facts. For Ethiopian high level CADU staff the average monthly salary is Eth.\$ 690 and for middle level staff Eth.\$ 360. These levels of salaries seem to be somewhat lower than the comparable averages in other parts of Ethiopian administration. A housing allowance of 10 percent and a system of salary increment for good work performance are added CADU advantages, which do not exist in other parts of Ethiopian administration. On the other hand, in CADU the working week is longer (42.5 against 39 hours), and there are no pension rights or security of tenure.

30. The problem of attracting personnel to a faraway hardship post without paying higher than normal salaries could probably be solved by offering non-pecuniary privileges such as housing for all staff and extended welfare installations. There is, of course, a limit to what can be done in this respect; a modern and well equipped community cannot be constructed if the project would phase out materially in 15 or 20 years. But even if CADU does terminate its present activities in a decade or two, the experience of other, now developed, countries make it likely that the need for a regional agricultural research and training center will be felt even in an agriculturally developed Ethiopia. The risk of overinvesting in project housing and welfare installations does not seem to be very great.

31. (iii) Activities under the Executive Director's Office

The Executive Director's office is in direct charge of a certain number of activities, which may be grouped into the following categories:

1. General administration, planning and evaluation
2. Transport, construction and maintenance
3. Infrastructure: water development, public health and public roads.



36. The infrastructural activities under the Director's office have been studied by the team especially in view of whether they are related sufficiently closely to the main aim of the project. Between the water development and health programmes there is an obvious interconnection. In an area where the dominating diseases are waterborn, the attempts to improve the quality of water is of importance to both human and animal health. The health programme has to some extent had a curative and preventative orientation, and this part of it is of importance not only in improving the quality of the human factor of production but also in creating an atmosphere of popular acceptance of other project activities. (The large investments in medical facilities made by expatriate industrial companies in several African countries have given many examples of such goodwill-creating effects.) The part of the health programme devoted to exploratory research is important in that it surveys the health situation. The purpose is given as "defining factors hazardous to planned economic development" in the project area. The vital statistics research now under way is a necessary foundation of a possible family planning project in the area. For the reasons indicated the team think that the water development and health programmes in their present limited extension are well directed towards the goal of agricultural development in the area.

37. Whereas such infrastructural activities as water development, cooperatives and forest guards were taken over from the Ethiopian administration in order to ensure coordination with the agricultural reform work carried out by CADU, the development of the public road system in the area was allowed to remain essentially a government responsibility. It is obvious that insufficient road facilities will act as a brake on all the main activities of the CADU programme - the distribution of new production supplies, the marketing of increased quantities of farm products and the supplying of health, veterinary and agricultural extension services. It was stated already in the Project Preparation Team's Report of October 1966, that to carry out these functions "will be possible only if the road facilities can be radically improved" (p.297). A number of improvements in the road system of the project area were, at the time of the project preparation, envisaged as a part of the Fourth Highway Programme of the Ethiopian Government. The Ethiopian Government made a specific undertaking in the Agreement and Plan of Operation that the Imperial Highway Authority would take appropriate measures for the inclusion in the initial phase of the Fourth Highway Programme of the construction of a road from Assella to Dodola and the asphaltting of the road from Melkasa (Awash River) to Assella.

38. From the Feasibility Study on Local Roads and Market Places in Chilalo Awraja (CADU Publication No. 35 August 1969) it appears that the Assella-Dodola and Melkasa-Assella roads were not incorporated within the framework of the Fourth Highway Loan. They are, however, at present the object of feasibility and finance studies, which may mean that a start on the construction work can be made in the beginning of 1971. In the case of two other roads, the construction or improvement of which was envisaged in 1966 (Assella-Munesa and Dera-Siri), no



construction work has been started as yet. Funds are, however, reserved within the CADU budget for these roads.

39. It is obvious that the road construction and improvement programme, which at the time of the project preparation was regarded as a necessary condition for a successful implementation of the project, has not materialized. In the Feasibility Study on Local Roads mentioned above, a number of calculations are made on the net benefits of a new road system. These calculations clearly show the high marginal contribution to the fulfillment of the project goals that road investments would give. There is one specific arrangement of the feasibility figures which the team feel should not have been left out: that is a study of whether the targets of a continued project in 1970-75 are likely to be attained without a major overhaul of the transport system of the present and enlarged project areas. Further study may prove that the decision about whether or not to continue the project will hinge on a sufficient backstopping in the transport sector.

40. (iv) Crop Production

a) Surveys

The Census in Dighelu village seems to be a good example of the usefulness of surveys. But the most interesting was The Changing Rural Society in Arussiland which is a basic document for all the extension work. The historical and sociological parts of this study are of great value. In speaking of the fifty-fifty share of the crop between landowner and tenant, the services rendered free by the tenant to his landlord must not be forgotten. This situation is very close to some sort of "serfdom" or "peonage" found inside a feudal society. While the team found many details in this study, not all of them absolutely necessary, they would have liked also to have found something on two very important topics

- I) The price of land, and its variation in space and time. If the price of land is going up quickly, as is said, important consequences will arise, some of them of a negative character. A higher proportion, for example, of the peasant's savings will be spent on land and hence not enough on direct, productive, investment.

- II) The level of wages paid to farm workers. Many different figures are quoted. In one place Eth\$0.75 to \$1.25 per day, or \$30.00 to \$90.00 per month (Tedla's farm). North-west of Assella, and in Yeloma, (quoted by the CADU extension worker who is now a Member of Parliament) \$40.00 to \$50.00 per year plus food, or \$40.00 per year plus 0.5 ha. on which to raise food for himself with the oxen and seed being provided by the employer. There also the situation of the tenant is very unsatisfactory.



41. Very useful also are the case-study of Dighelu and Yeloma area and Cultivation Practices by Bangtsson among others. But Training of model farmers (base-line study) does not give the same satisfaction. In the team's opinion it was not necessary to ask questions where the answers were so evident as in question 4-0 (How do you sow?), 4-12 (How do you weed?), 5-1 (threshing), 5-3 (cleaning), 6-0 (fertilizer), 7-22 (use of mules), 7-23 (donkeys).

42. b) Experiments

Good work, on scientific lines, has been carried out on Kulumsa farm. Demonstration plots and the fields of model farmers were meant for demonstration purposes but served also to obtain useful information. They are necessary to find out about local variations (for example in response to fertilizer). Possibly these results would be of greater value if some replications (two replications) could be made. Of course the results obtained at Kulumsa farm are not valid for the whole of Chilalo Awraja. More experimental substations than are provided for in the plan should be established.

43. c) Kulumsa Farm

Valuable work has been done here. Most remarkable is the success of fodder beet but also that of hybrid maize. These have been the biggest successes. After them come maize silage, rape and teff. While good results with new varieties of wheat have been achieved in the farmers' own fields, it is a little surprising that the yield of wheat at Kulumsa is still not very high. If it is the dry winds of October which have been mainly responsible for this, then a system of four-sided windbreaks, breaking the area up into, for example, 10 hectare plots (1,000 metres x 100 metres with the long side being at right angles to the prevailing wind) could be tried. It will probably be the best way to reduce evaporation and the risk of a kind of "dust bowl" arising from wind erosion.

44. Maize could be the main cash crop north of Assella and in the Rift Valley. If a good market can be found, then high priority should be given to oil-crops, principally sun-flower, because of its valuable protein content, and to haricot beans, especially to the latter because the demand is growing. But in the team's opinion the future of Arussiland, especially south of Assella, where the altitude is in excess of 2,300 metres and the rainfall more than 1,200 millimetres, lies initially with wheat production and subsequently, after a few years, with milk. If this is true, then more research is needed on fodder crops. Beet fodder will give lots of forage units but very little protein, although the leaves of beet gives more protein than the root. But protein-rich crops are needed, for instance legumes (Desmodium in wet areas, Alfalfa in semi-dry) and Kale. This fodder cabbage, which in conjunction with Nandi Setaria gives such good results on the slopes



of Kilimanjaro, seems to be worth trying here. On the higher land, above 2,600 metres, there appears to be a possibility for malting barley.

45. More experiments with fertilizers on natural grasslands are also needed. These should take into account differences in the vegetation and flora between every type of grassland. One has to have fertilizer experiments for each type. In the beginning, it will be better to advise the use of fertilizer only on good grassland where the vegetation is good. For the future, experiments on ley-farming, alternating temporary pasture (instead of fallow) with crops would be very useful. The team do not know whether it will be better to alternate pastures and crops or to separate them indefinitely. With fertilizers fallow will no longer be absolutely necessary. If ley-farming is introduced, one needs plots of much greater length than width (500 x 40 metres for a two-hectare plot for instance). More experiments are needed on some cultural practices such as seedbed - preparation, depth of sowing, which take into account variations in the nature and moisture of the soil, the season, the quality of seedbed-preparation etc.

46. d) Machinery Pool

This is a big and controversial question. The use of tractors could improve the yields of crops, especially by better seedbed preparation, and because it will often permit earlier sowing which usually means better yields. But in such over-crowded areas, with some under-employment of the labour force and of oxen, too quick an introduction of the widespread use of tractors could be too costly and will further increase under-employment. The same holds true where big landowners change from renting out their land as small tenants' holdings to large-scale commercial farming with tractors. In certain circumstances such a transformation presents advantageous features but it can also be very dangerous.

47. The use of tractors also means an increase in imports and therefore also needs additional exports or import - substitution. For the use of tractors to be economically sound requires that there should be significant increases in production. For that, ploughing must be done a bit deeper than it is with the traditional ploughs in order to break up the hard soil layer compacted by ploughing in the past. Extensive bad use of tractors, with only one bad ploughing and poor yields, must be discouraged. The use of the machinery pool should, in the team's opinion, be made conditional on the adoption of other improvements, e.g. better seeds and fertilizers. The farmers asking for the tractors in the next year must accept at least these improvements.

48. To reduce time spent unproductively by the tractors on travelling, there should be a minimum size of field for which orders on the machinery pool should be accepted in certain areas.



Groups of farmers must be encouraged to join up their fields so that they can be ploughed or harvested by combines at the same time. The tariff should be higher for small plots and cheaper for large and regrouped fields. At the moment the number of hours of work per year done by each implement is not enough.

49. Implements research

Good work has been done in this field but has come too late. All other improvements (manure, fertilizers, seeds, grains, milk..) require more and cheaper means of transportation. Lorries can not go everywhere and are expensive in foreign exchange. The development of ox-carts, and smaller one-donkey carts, deserves the highest priority. Steel wheels seem to be a good solution but probably need to be a bit wider and bigger in diameter than those which were seen on the demonstration farm at the CADU centre. Next in priority come tools for better seedbed preparation, especially harrows with wooden frames and steel teeth. The teeth should preferably be set at an angle of 15° to 20° to the vertical plane and the harrow be adapted so that it can be pulled in either of two directions.

50.

Next in priority, and before better ploughs, comes the development of a hand winnower. If ploughs are put a little lower in priority than usual this is principally because they need more power; and oxen are needed to pull them. Later comes the threshing problem, but before this comes a good local grain-store, secure from rodents. Of course this order of priority which the team are proposing is very controversial and here also they do not want to be dogmatic, except on one point - i.e. the necessity, as quickly as possible, of building and selling ox-carts to the farmers. This is the main tool for improvements and the real bottleneck hindering all agricultural progress. In the near future, a small planter and a hoe for inter-row cultivation, both pulled by oxen will also be necessary.

51. (v)

Animal Production

a) Research and Livestock

If it is correct to say that the future of the wet part of Chilalo Awraja is to be a milk-belt, in that case, in the wake of the wheat-fertilizer success, increased emphasis has to be put on milk-production. The policy of cross-breeding with European breeds seems to be the best and quickest way. But the team prefer the cross to be with Holstein rather than with Jersey for at least three reasons:

- i) Holstein are bigger animals and therefore better for meat and draught.



- ii) They have longer teats for hand-milking, and, one day, for milking machines.
- iii) A high fat content in the milk is not a priority. Vegetable fats are not only cheaper but also better for health.

CADU also have recently favoured cross-breeding with Holstein rather than Jersey. To succeed with this policy requires a parallel improvement in forage. To lend an  $F_1$  cow to a model farmer probably requires:

- i) One hectare of fenced (with cheap fencing) and fertilized pasture.
- ii) One tenth of a hectare of fodder beet near the cow-shed.
- iii) Some hay and some concentrate.

The use of  $F_1$  oxen for draught purposes has already been recommended. It is very important to obtain more power. In the team's opinion it will be much more difficult to persuade peasants to use their horses for draught purposes than to use bigger oxen. In any case one would have to increase the size of horses, and their meat can not be used. If one crosses for milk production one must also extract some profit from the male animals.

52.

The policy for the progeny testing of bulls is a good one. Some experiments with Indian Zebu Sahiwal dairy cattle could one day be useful especially for the warmer climate of the Rift Valley lowlands. In that climate Elephant grass, Rhodes grass and Pangola (*Digitaria decumbens*) should be tried. With good high quality grass only the amount of fibre limits the amount of feed consumed. Molasses are sometimes a better supplement than concentrates, as is the case in Cuba with  $F_1$  crosses fed on Pangola which result in a daily milk yield of up to ten litres. Rhodes grass, with the help of fertilizers and especially after the short rainy season, could give good hay. It could also do so at the beginning of the long dry season after being grazed during the first half of the rainy season. The best hay could be made by cutting tefl at the flowering stage. But to induce peasants to commit this "sacrilege" will probably be too difficult at the moment.

53.

Mainly on the higher land sheep could be very useful if great care is taken about diseases. The same is true of poultry which are important everywhere for improving the protein content of the human diet. But the price of eggs is at the moment too low to put emphasis on a rapid expansion of their production. A quicker method of collection, resulting in fresher eggs, is necessary to improve the price. Cross-breeding, better veterinary services and better nutrition are all necessary to increase the



number of eggs per hen-year and to decrease the real cost of production. More important for today is the production of milk, and for tomorrow, beef. If the area round Addis Ababa produces more milk in the near future then one day it will be necessary to install a dairy plant somewhere south of Assella.

b) Veterinary Services and Gobe Farm

Veterinary services also deserve the highest priority since no real progress can be made in animal production without progress on the veterinary side. Animal production will become increasingly important in the future. In the CADU programme their (veterinary) work began perhaps a little bit too late but it seems that they are now on the right track. The same is true for Gobe farm, as far as the team heard, but they did not visit it.

5. (vi) Extension and Education Department

The targets and the methods of work of the Extension and Education Department, as outlined by the related CADU documents, are well selected and designed. Although there was a delay in the construction and operation of the agricultural school (Training Center) the implementation of other tasks is well advanced. In the course of development, the internal organization of the department was revised, and at present the department consists of five units, e.g.

Agricultural Extension Unit  
Cooperative Extension Unit  
Women Extension Unit  
Agricultural School Unit, including demonstration farm  
Information Unit.

16. There are six extension areas in the project, each with a demonstration plot on which the innovations which should be introduced are demonstrated. The farms of model farmers are also used to introduce and spread innovations. The type of extension work done in crop production has already given very good results, and probably will give even better results with every year that passes. The farmers in the project are, generally speaking, money-minded and not reluctant to make progress. The approach with the so-called "package programme" seems to be a very good one. In the first stage almost every farmer has made more money with the combination "improved seeds - fertilizer - better marketing." A more difficult task will arise with the introduction of the F1 grade cattle, because they need better care and feeding. Everywhere in tropical Africa, it is very difficult to induce peasants to work harder simply in order to feed their animals better. But the successful start with milk collection and the present price of milk are a strong inducement to the farmers to accept and offer better care to grade cattle. The project of grade cattle is very important for the southern part of the project area, particularly, due to the already mentioned favourable conditions for cattle rearing.



Further remunerative innovations need to be introduced, as well as more farmers to be involved in using these innovations. In the opinion of the team, the next big economic step could be made with the introduction of ox-carts and harrows. The latter will mean better seedbed preparation which is much needed. Weeds seem to be a very great problem for the farmers. The wet climate during the early phase of the development of the crops is very favourable for the fast development of weeds and these do much harm to the crops. The existing weeding practice is very time-consuming, and therefore weeding is not done on time on most of the cropped fields. This greatly reduces the yield. Moreover in the peak agricultural season weeding is a very expensive operation, and this, among other factors, reduces the cropped area per holding. Therefore, experiments with chemical weeding should be undertaken, with the aim of finding cheaper methods of application for chemicals. Pest control will, probably, come close to weed control in importance.

The extension service, coupled with supply and with means to improve production, better marketing and credit, should be developed in the future as quickly as possible so as to cover a wider area and more farmers. All the other expenditure, overheads and research work will be underutilized, if the extension work does not reach an adequate level. The costs of both the project and the extension service, (although the latter's share in the total operating costs in 1968/69 was less than 15 percent, which is very low) are at present relatively high for the results achieved. Cost effectiveness could be improved with a faster development of the extension service, assuming that its share in the total costs will also increase. After the first results in the extension work are achieved, and the confidence of the farmers in the project activities is gained, i.e. when the potential for faster development of the extension service is created, a more inductive system of remuneration of the staff engaged in extension services, research, marketing and supply should be tried and developed. One of the ways this could be done is to make at least part of their salaries dependent on the results achieved, i.e. on increases in production and area covered, successful acceptance of the innovations by the farmers, increases in quantities marketed through the project network, improvement in the quality of the commodities produced and sold, greater use of purchased inputs, better utilization and repayments of credits, and a decrease in the cost of credits, etc. It is understood that this will require a better integration of the extension service with marketing in the development credit activities, and a more active role for marketing in the well of the production of agricultural commodities of better quality and well larger quantities for the market. The establishment of these activities, managed multipurpose cooperatives, which may embrace all these services and may be very important for this integration at the grass-root level. This, also, will relatively decrease the costs of all these services and activities, and the consequent burden on the budget of the Ethiopian Government.



The co-operative extension unit is in its formative stage.

Some very useful study work has been done by the staff assigned to the unit. The intention of the unit to develop a nucleus co-operative (probably a better word would be a "pre-cooperative") is a very sound one. The existing trade centres may be developed to deal with all the activities which should be covered by a co-operative (marketing, supply, production credit) and to link up the work of the extension personnel to the centre. In this way a trading centre may become an active organization through which development of agriculture in the area should be planned and activities programmed. Such a developed active unit, with an advisory committee composed of elected farmers, the users of the centre's services, may be transformed into a co-operative when necessary. If the method described above, or a similar one proves feasible, the tasks of the co-operative extension unit may be adjusted to lay more stress on internal organization, book-keeping and the accountability system, improvement of the efficiency of the individual sub-units of the trading centre and/or co-operative. Nevertheless, it is advisable that a closer relationship with the Co-operative Department of the Ministry of National Community Development and Social Affairs is developed and that some of the work already done by this Ministry (e.g. in the preparation of training material and co-operative accounting procedures) is not duplicated.

The women's extension unit is also in its development stage and is gaining its first experience. Improvement in the farmer's household, by utilizing better and more efficient services, will improve the standard of living of the family, and develop a demand for further needs which are most inducive for the acceptance of additional innovations. One of the ways to achieve this is to give practical teaching to housewives to make better use of the existing sources and conditions, and also to develop new ones. These may induce the farmers in a village to invest (mostly labour) in the development of new and better common services, i.e. more hygienic and less time-consuming water and fuel supplies, improvements in village hygiene, etc. It is very important to develop such services which will increase the productivity of labour of the housewife, because this is a precondition to free her from the difficult and time consuming housework, and enable her to do more work in production and thus to contribute to the increase of income of the family. It seems, therefore, that the tasks of the women's extension service should be widened and more related to the agricultural extension service than in the past; and this appears also to be the present intention of CADU.

The Agricultural School has recently started with its first batch of students. On the demonstration farm good work has been done, especially reafforestation to stop erosion, drainage and improved pastures.

It seems that the way applied to prove the ability of new students for agriculture was a little crude. To cut grass and green plants with inappropriate tools (axes instead of scythes or pangas) in an unorganized way surely will not develop devotion either to agriculture or manual work.



But all these techniques need to be appraised from an economic point of view. Probably all this work could, in the future, be done more economically. This seems to be particularly true for buildings (the cow shed, and also the poultry shed proposed for farmers is too costly) and for the type of fences adopted for pastures, etc. The team did not have sufficient time at its disposal to determine whether or not there was some duplication with the Kulumsa farm, i.e. whether some of the tasks of the demonstration farm could not be performed by the Kulumsa farm. It would be advisable to give further consideration to whether each of the new centres should develop its own demonstration farm, and whether they should have a demonstration farm of the size now planned. Probably, farms at the new centres should be designed only for the practical training of students and not for demonstration purposes.

62. The information unit, if its activities are firmly tied up with the plans, programmes and actions of other departments, particularly with those of the extension service, will be a useful one. The problem of its full use, if it is well equipped, may come later and then it may serve some other projects as well.

63. In conclusion it might be mentioned that the extension work, although primarily dependent on the results of research (i.e. on innovations) in its field work, is also related to the marketing (including processing), supply and credit, i.e. to the activities performed by the Commerce and Industry Department. If the project activities are oriented more to a "commodity approach" than to a "farm approach"<sup>1)</sup> the necessity for closer co-operation between the field extension service and the Commerce and Industry Department will increase. At that time it may be advisable to evaluate once again the present organization of these two departments.

#### 64. (vii) Forestry Extension

Reafforestation is now becoming in this awraja, as around Addis Ababa, a normal practice. But much still remains to be done. New species of Eucalyptus could be used not only for firewood and poles but also for timber. The development of Pinus Patula, Cupressus Lusitanica and Acacias are steps in the right direction and they will provide even better timber. In the traditional plantations the Eucalyptus tend to be too densely planted and on the slopes erosion soon starts because there is no grass cover between the trees. At the moment the plantations are very scattered and it would be better to regroup them, mainly on the slopes where erosion threatens, or alternatively as wind breaks.

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1) i.e. to select commodities production of which is necessary for the market and will be profitable, and to concentrate efforts to develop these commodities rather than to assist farmers in all their lines of production and activities.



65. Up to the present time foresters have tended to think in terms of firewood, timber and the fight against erosion. But in another situation in North Africa, analogous to this one, forest plantations of this sort could not give either enough income or employment, and so the peasants were against them. The time has now come to experiment, on the slopes which occupy the greater part of Ethiopia, with more productive and profitable trees. In dry areas Opuntia ficus indica, variety inermis (without spines) could give not only fruit but a much bigger income as forage. In the dry season the leaves could be fed to cattle and sheep. It would form, without the expenditure of any labour, a fodder reserve on the spot. In wet areas, Ulmus and Fraxinus have been extensively used for forage; the first, after drying, for winter reserves in the mountains of the south of France; the second for dry summers in Kabylie, east of Algiers. The team wonders if Italian types of Poplar will grow here as quickly as in North Italy. They could be useful in providing good timber and also forage leaves on wet soils where the dry season is short. Fruit trees will be very useful, at any rate for home consumption, in the same way as a back garden for a few vegetables.

66. Probably a more important tree for the Ethiopian economy would be the mulberry tree linked with silk-worm rearing. It already grows well in Addis Ababa in climatic conditions very similar to those prevailing near Assella and in many highland areas of Ethiopia. Last year, when Professor Dumont was studying South Korean agriculture he found many people planting mulberry trees on many of the slopes, leaving the flat lowlands for rice and the semi-flat for soyabeans, wheat and barley. South Korea expects to export from 1975 onwards raw silk to the annual value of U.S.\$ 100 million. The value will be much greater if a large part of the raw silk is made into cloth.

67. Of course, silk production could not be commended at the level of CADU project but would call for decision on the national level. For this a feasibility study is necessary and experts from Japan would be the best people to carry this out. The team have heard that rearing of silk worms can now be done without mulberry leaves and if this is true it would change the whole situation. But if rural mechanization is gathering momentum in Ethiopia it is unlikely that the growth of industrial employment can keep pace. In that case more employment, either in agricultural production itself, or in rural industries based on agriculture, is essential. Silk production seems to be one of the more promising possibilities.

68. (viii) Commerce and Industry Department

Here also good work has been done. The greatest success has been with the organization of a milk collecting scheme which, by August 1969, was delivering 1,400 litres of milk daily to the Addis Ababa market. Fair success has also been achieved in the marketing of crops on behalf of farmers. By this means farmers have obtained a price



of B.M. 25 to B.M. 50 per quintal over what they would otherwise have received. The Department has also been engaged in the sale of improved seeds and fertilizer to farmers. Most of the sales have been on credit terms. Here success has been more moderate. Although CADU has been used as a package programme in which several different sorts of activities (e.g. research, credit marketing) are to be closely co-ordinated under a single direction, it is significant that the Commerce Department's greatest success to date (milk collection) has been achieved in a field where other departments of CADU have been less involved, and where the package principle has so far been least successful. The milk collecting scheme has been a normal business operation which CADU acting as the middleman between the farmers and the State Dairy in cities like. Both these partners have been motivated by practical commercial principles. In the future, of course, the introduction of milk production through the introduction of improved cattle and depend on the successful application of the package programme.

In the field, however, of increased grain production, which has been the heart of the package programme, the Commerce and Industry Department has been dependent on the parallel activities of two other CADU departments. The Extension and Education Department have been responsible for stimulating the demand for seed and fertilizer, and the Production Department for supplying the improved seed. In various discussions with members of these two Departments, some members of the team received the impression that their concern for the maintenance of their high professional standards and integrity might, on occasions, be at variance with CADU's imperative need to increase the number of farmers reached and the amount of agricultural inputs they receive. That the demand for improved seed has outrun the supply has for the past two years been inevitable. But it seems likely that this will happen again next season also and in that case contributory factors will be the failure to offer a high enough price to seed growers to prevent them selling their output clandestinely and a reluctance to risk some lowering in the quality of seed by buying for seed the output of farmers who have been growing the new varieties under less controlled conditions than the registered seed growers. In an area where the response of small fields to fertilizer use, even with unimproved seed varieties, is substantiated it is a little surprising that more farmers have not started using fertilizers, even when they have been unable to acquire improved seeds.

Some members of the team feel that in the contrast between the great success of milk collection and the moderate success in the supply of seeds and fertilizer there lies a lesson, and that one of the advantages and failures referred to in paragraph 8 of this report should be put on a system in which relations between CADU Departments are put on a semi-commercial basis (e.g. the Commerce and Industry Department might offer an "introduction fee" to the Education and Extension Department for new customers) and individual CADU employees receive financial rewards directly related to their effectiveness. Such a



system would need safeguards against abuse, but the present integrity and high professional standards of CADU staff would be easiest to maintain if allied with financial self-interest. Financial rewards to extension workers have proved effective in some other countries; they would at any rate be worth trying in Ethiopia. Professor Gardlund however, is not convinced of the desirability of such a system.

71. The paper work involved in individual credit applications seems rather complex. In contrast to other credit agencies operating in the area, CADU is well informed on local conditions and knows precisely the probable results to farmers of the simple, short-term, loans for seed and fertilizer it has so far made. The only additional information CADU requires in respect of individuals is about the area of crop for which supplies are required and credit-worthiness. The team appreciates that CADU has been anxious to achieve a high level of efficiency in the appraisal of loan applications and subsequent debt-collection; but it feels that CADU can now afford to try some simpler procedures in order that, as the demand for credit grows, the procedures themselves do not become a bottleneck. This feeling is shared by CADU itself.

72. Repayment of loans by farmers has so far been good, but there have been some defaulters and CADU must soon solve the problem of enforcing payment by these as an example to the rest. The team recommends that, in the period before cooperatives are able to take over the functions of the Commerce and Industry Department, experiments should be made with the establishment of bodies of mutually responsible farmers at each Trade Centre, at first in an advisory and subsequently in a decision-making capacity, in order to vet individual loan applications. This system has worked well in some other countries and would help to decentralize decisions and reduce paperwork.

73. The supply of funds to CADU for relaying as credit to farmers has not so far been worked out on a permanent or satisfactory basis. Responsibility for this failure does not lie with CADU, but it is desirable that a proper system be established now for the next five years which will provide not only adequate funds for farmers but also, if necessary, credit for activities, e.g. road-building by local associations, for which appropriate credit institutions do not as yet exist. Some legislation may be required here. Another organizational experiment of which might be tried is for both the marketing and credit institutions CADU to be administered and run by the existing government and the responsible for these activities, i.e. the Grain Corporation and the Development Bank. Both institutions would have to be prepared to experiment with new specially designed procedures and organizations in CADU itself must retain substantial control over their operations in Chilalo for some time. But such a set-up would provide the basis for the eventual and necessary withering away of CADU as a special project.

74. The team consider that in the past CADU has taken a rather passive role in marketing. It has taken advantage of, and tried to



improve on, existing marketing opportunities rather than trying to create entirely new ones. This is so even in the case of milk. In the future the team hopes that CADU will take a rather more active role in seeking new market outlets for new products or greatly improved qualities of traditional products. It is in this way that the most dramatic increases in income can be achieved and the most rapid transformation and restructuring of the agricultural sector effected.

### Overall Appraisal

#### The views of Professor Dumont

##### 15. Prologue

On the whole very good work has been done by CADU in a short time. In my view the main problem that remains is one of cost, and how to reduce it while still keeping efficiency at the maximum level. The solution to this will be very difficult, but this is the direction in which we have to go if we want to expand this type of scheme all over Ethiopia; and that is the real target. In this report I have put more emphasis on giving advice and on the general orientation of the project than on evaluation because, on the whole, real evaluation work seems to me to be premature.

##### 16. Worthwhile innovations at hand or easily obtainable

i) At hand The following worthwhile innovations have already been established:- new varieties of wheat; hybrid maize; some new varieties of oilcrops and haricot beans; use of fertilizers, mainly  $P_2O_5$  and  $N$ ; but the mixture recommended to farmers should in the near future, be more diversified, according to local conditions, after more experiments; good trade centres, for buying grains and milk, selling seeds and fertilizers, etc...

##### ii) Easily obtainable

New crops: like fodder beet, maize for silage, new grasses and legumes, etc...

New implements: like oxen carts, ploughs, harrows, winnowers, threshing machines, store buildings, etc...

New crossbreds: cows and oxen  $F_1$  type, for milk, draught and (in the future) meat production.

New uses for fertilizers: mainly for pasture and fodder crops, and one day probably for quick growing trees. Some precooperative organizations, to manage the trade centres first, and afterwards the machinery pool and seed production. The future



cooperatives must be conceived in a real economic sense, and not mainly for social purposes, as in India for instance.

78. What is still lacking:

More emphasis on a cheap drainage system, soil conservation works, and family gardens. More experiments on forage and pastures and seedbed preparation.

79. Practicable means to adopt and apply such innovations

It is through the "package programme" (beginning in India in 1959, after the Ford Foundation mission to India) that the innovation has been accepted here also. The first results achieved encourage one to go on in the same way. The most difficult matter is extension work, but the type of work selected, mainly with model farmers and demonstration fields, seems to be a good one, for the level of literacy actually reached. But, as the level of literacy increases, CADU will have to utilize new means of diffusion, like leaflets, pamphlets, etc...

80. In this connection the dedication of extension people is very important. But I agree with Professor Milosavljevic's proposal to give to every extension worker some kind of bonus, according to the results he has obtained. Sometimes it will be difficult to evaluate them, but nevertheless possible. The level of practical knowledge is still more important than the level of theoretical knowledge. I prefer extension people from rural, and even better from agricultural origins, even with a little lower educational background. But dedication is the most important.

81. Land Reform

This is a very difficult question, and mainly a political one. As foreigners and as economists, we will not advise a revolutionary solution. To cut big properties into small holdings is not everywhere advisable from an economic point of view. But one thing could be recommended, that is the end of the share cropping system, which should be replaced by fixed rent tenancy. Not one landowner in Chilalo has yet agreed to pay a part of the cost of fertilizer. In such conditions share cropping will become very soon the main obstacle to agricultural progress. Fixed rents (not too high), long duration of tenancy, and compensation for improvements done by the tenants (if productive) are the three main points to stress now, in order to induce all rural people, including tenants, to make more investments and, to increase their production more quickly.

82. Conclusion

I personally believe in the package programme approach and CADU, of course, should continue its good work. But CADU must try soon, even



in the 1970-75 period perhaps, to reduce certain expenses<sup>1</sup>, but mainly to expand its activity to a broader level<sup>2</sup>, thereby reducing the cost per hectare, per quintal. Here is the main difficulty. I do not think it will be possible at this stage, in Ethiopia, to have a regional programme "financially self-supporting". That is the reason why I ask to increase the participation, in such programmes, of developed countries. I personally was particularly happy to see that, in many points, the work done by CADU is on the lines I have advised in my "African Agricultural Development", written in 1964-65 for The Economic Commission for Africa, at the personal request of Mr. Gardiner.

#### The views of Professor Gärddlund

Like any other organized social effort, a development project should come up to certain basic standards of operational efficiency. This is a necessary if not sufficient condition for success. The basic operational efficiency, to which an evaluation team in the first instance directs its attention, concern such aspects as maintenance of buildings and equipment, standards of order and hygiene in the operational area, punctuality of staff, rationality of administrative and financial organization and smoothness of office routines. To such basic efficiency factors could be added the attitudes and personal relations among staff members: their dedication to the task, the degree of cooperation between project leadership and staff, between project departments as well as between individual staff members, the attitudes among expatriate staff members towards their counterparts and the aid-receiving population.

The team has not been able to approach all these practical matters in a systematic way with a check-list in hand. During a two-week stay it has, however, been possible to gather a general impression of the basic operational efficiency of the project. My impression, which I believe to be shared by the other team members, is that CADU meets the basic standards of efficiency very well indeed. The project

1. Of course, Ethiopianization is the main way to reduce expenses, but it has to be made without decreasing the quality of work. It is obvious that the Ethiopian staff have a good level of theoretical knowledge, but usually lack practical knowledge. Even now manual work is too despised by intellectual people. But the level of dedication of the Ethiopian staff of CADU seems to me much higher than what I have all too often found in French speaking West African and Central African countries. Eighty four model farmers in 1969, after 3 years of work, less than the number of CADU staff, seems to me not sufficient. Some "souci de la perfection" is probably the main reason for this small number. Now it is time to go quicker.

2. To give a higher proportion of total CADU resources to Extension is necessary for that purpose.



to be run with great care for economy and efficiency, its direction and staff are knowledgeable, hard-working and dedicated, the spirit of the project is open and cooperative. Whereas no development project can succeed without operational efficiency in the narrow sense, such efficiency does not in itself guarantee attainment of the development goal. Such attainment will not be possible unless the project incorporates an adequate strategy of aid.

At the time of preparation of the CADU project, considerable attention was given to the problems of strategy. In the light of Swedish - and international - aid experience, certain basic principles were adopted. Among those principles the following appear to be most essential. The project was to be administratively autonomous, with field direction of a high standard of competence and continuity. The project was to be an integrated one, in the sense both that the essential agricultural activities would support each other and that certain infrastructural activities - such as public health, public roads, forest protection and water development - would give support to the process of agricultural transformation.

The project was furthermore to have an over-ruling economic orientation. There were two reasons for this option. Among the many possible technical improvements, which would give higher physical returns, those were to be chosen which under given conditions of factor, prices and sales revenues would lead to the highest economic net returns. This is the essence of economic development. But experience has also shown that a peasantry can be made to change its archaic methods of production only if they can be convinced that the change of methods will lead to a considerable and continuing increase in net income.

In my opinion these strategic conditions - administrative autonomy, integration of activities, economic orientation - are essential to the success of an agricultural development project. CADU appears to be one of the few aid projects which has consciously adopted these principles, towards which twenty years of aid experience have pointed so clearly. From the more detailed assessment made by the team it further ~~more~~ appears that CADU, through good organization, dedicated work and sound judgement, has been able to apply these principles with considerable success. The project thus seems quite successful both as an operational system and, so far, in its goal attainment.

During the preparatory stage of CADU, a fourth strategic factor was highlighted: the project should aim to work in close contact with local political leaders and administrators and be deeply immersed in the communal life of the region. To favour the attainment of this goal a series of sociological studies was carried out, which to a degree rarely found in technical assistance, has thrown light on the relevant social environment, and given many of CADU's officers a first hand knowledge of the anthropology and politics of the region.







After only two years of operation all one can say in respect of most of these objectives is whether the original forecasts of what would happen, and on which the decision to implement the project were taken, have now been falsified or seem less likely of attainment.

93. The original objectives, set out in paragraph 6 of this report were, in brief:-

- i) to establish suitable methods of agricultural development;
- ii) the economic development of the Chilalo Awraja;
- iii) training of staff;
- iv) improving the ability of the local population to participate in development.

In my opinion, and this is confirmed by the text of the 1967 Agreement, the first of these is paramount, but the other three are necessary to it in the sense that the other three are means to achieve the first and, indeed, must be attained to prove the achievement of the first.

94. CADU's actual and prospective performance in terms of the three other objectives can be disposed of fairly quickly. As far as the economic development objective is concerned the original forecast and analysis are contained in Report No. II (SIDA May 1967) on pages 14.1 to 14.14, especially 14.3 to 14.7. On the assumptions that:-

- i) during a thirteen year period the number of farmers participating in the project would rise gradually at first, then much faster before levelling off at a figure of about 59% (44,000) of the total number of farmers operating in the CADU area (c.75,000);
- ii) there would be an increase (net of increased farm costs) in agricultural production, due to the project, of 10% per year, on average for each of the farmers participating, and that initial average family income is E.\$350 per year;
- iii) the total project cost, following a particular time schedule, would total E.\$50.7 million over thirteen years;
- iv) all costs and benefits of the project would cease after thirteen years;

Report No. II calculated that the net present value of benefits of the project just exceeded, at a 6% discount rate, the present value of costs. In my opinion a 6% discount rate is too low to use in Ethiopia and a 10% discount rate is more appropriate. However Report No. II also calculated that if assumption (iv) above is relaxed so that the annual benefits achieved by the thirteenth year continue thereafter without further project costs other than costs of road maintenance, the rate of return to the project would be much higher. This relaxation of assumption (iv) appears to me to be quite valid. Report No. II also cross-checked the very general calculations of growth contained in assumptions (i) (ii) and (iii) with the area's existing and potential resources



endowment, technical coefficients, and market and price prospects; and the two were found compatible.

95.

After two years of the project it does not seem to me that we are now in an appreciably better position to judge the validity of the assumptions detailed in the last paragraph than were the authors of Report No. II. All we can do is to compare certain events which those authors forecast for the first two or three years with what actually happened:—

Comparison with Report No. II

a) No. of participants

| <u>No. of MODEL FARMERS</u> |               | <u>FOLLOWERS</u>     |                             |
|-----------------------------|---------------|----------------------|-----------------------------|
| <u>Report No. II</u>        | <u>Actual</u> | <u>Report No. II</u> | <u>Actual</u>               |
| June 1968                   | 30            |                      | (No. of loans made by CADU) |
| June 1969                   | 75            | 90                   | 189                         |
| June 1970                   | 125           | 450                  | 856                         |
|                             |               | 1250                 |                             |

b) Benefits

|                     | <u>Report No. II</u>           | <u>Actual</u>                                                                                                |              |
|---------------------|--------------------------------|--------------------------------------------------------------------------------------------------------------|--------------|
| 1967/68             | 9,000                          | 1,600                                                                                                        | £            |
| 1968/69             | 45,000                         | 60,000                                                                                                       | £            |
| 1969/70             | 109,000                        | 573,000                                                                                                      | £ (estimate) |
| £ Of these benefits | \$720 in 1967/68               | ) represent transfers of income between merchant and farmers rather than a real increase in national income. |              |
|                     | \$8,944 in 1968/69             | )                                                                                                            |              |
|                     | \$13,000 (estimate) in 1969/70 | )                                                                                                            |              |

Source: CADU publication No. 34.

So far, as can be seen, the project is doing rather better than forecast.

96.

None of the preliminary documents (1967 Agreement, Reports I or II) gave quantitative forecasts for staff training in the same way as they did for economic development; but I have the impression that the staff training which has been done so far has consisted far less of formal courses than originally intended and much more of on-the job learning by experience. I have no quarrel with this but, as already stated in paragraph 9 of this report, more emphasis should be put on staff training in the future, especially for other similar projects in Ethiopia, and, if necessary, proper financial provisions for this outside the CADU budget should be made.

My own views about popular participation as an end in itself coincide with those of the rest of the team, and have already been expressed in paragraph 10. Precisely what is meant by "participation"



has always, perhaps, been a little vague. Report No. I (October 1966) described it as "to improve the ability of the local population to participate in and be responsible for the local administration and development effort and thereby to improve the economic and social conditions in the area". My interpretation of this is that more was meant than that the local population should be passive participants in the project, merely taking advantage, as individual farmers, of the services that the project offered. I believe that what was meant was that the inhabitants of Chilalo should become more involved in, and eventually responsible for, the taking of decisions governing events and activities beyond their own farm boundaries.

98. Since I do not myself believe in popular participation as an end in itself it is perhaps a little churlish of me to comment that, in my opinion, the project was neither well-designed for, nor successful in achieving, "improving the ability of the local population to participate" in the sense in which I have interpreted it. It was not well designed for this because this is a sociological and political objective and requires sociological and political skills to achieve it. Such skills can only very rarely be exercised by people who are strangers to the society of which it is planned to improve the ability to participate. In fact in most cases in Africa where the ability of a rural population to participate in decision making has improved this has sprung out of opposition to the government of the day rather than with its encouragement or connivance. Certainly a production-oriented project such as CADU, under what might be described as the paternalistic control of agricultural technicians, can not and has not contributed to improving this ability.

99. Failure to develop popular participation has not, as far as I can tell, adversely affected CADU's performance in the agricultural or economic field so far. But in my opinion, which is shared, I am sure, by CADU itself, it will affect it in the future. In my opinion, considerably more emphasis should be put on developing CADU's links with the local political and social scene at all levels than has been put in the past. If CADU is to flourish and survive it must be regarded not only by the local population but also by the local authorities and officials as "their" project - one they can influence and to whose success their own personal futures are linked. This may sometimes mean that CADU has to be prepared to do things for which the CADU directorate has no great enthusiasm. It is a path with many pitfalls in it, but I have confidence that the present directorate of CADU can negotiate it safely.

100. As far as establishing suitable methods of regional agricultural development, CADU's major objective, is concerned, much has already been said in detail in other parts of this report. During the past three years there has been a substantial change in opinion in Ethiopia towards recognizing the necessity for regional concentration of resources, combined with coordinated control of different services, if the overall agricultural development of the whole country is to be brought



about. There are now four or five similar regional package programmes under active consideration in Ethiopia. A major cause of this desirable change in opinion is attributable to the example and success of CADU. In this respect CADU has gone a long way to achieving this objective. However I also feel that the detailed experience of CADU, as well as the overall idea, should be given more attention by those outside CADU responsible for the preparation of other projects.

101. One of the ways of establishing suitable methods for agricultural development which CADU has not tested is by an economic analysis in depth, and at the farm level, of the factors inhibiting or constraining the adoption of new techniques or improvements. CADU's approach, especially in its experimental work on improved tools and farm machinery, has been essentially a technical rather than an economic one. It has been to test crops and machinery and see which "do well" where "doing well" is essentially judged on some criterion of per-acre yield or with reference to experience gained elsewhere.

102. Techniques for economic analysis (e.g. linear programming) have been developed in recent years, and tested in peasant conditions in East Africa, which are extremely powerful tools for establishing what are the real constraints on development at the farm level. If CADU were able to obtain someone trained in these techniques to do an analysis on Chilalo, it might throw very valuable light on areas for further research, or on the optimum combinations of practices to recommend to farmers.

103. In my opinion CADU has done extremely valuable work during the last two years, and deserves further political and financial support to carry out the programme it has proposed for the next five years. Subject to some of the comments made in this report, its future programme should be along the lines set out in CADU Publication No. 26 "Tentative CADU Programme 1970-75".

#### The views of Ato Tekalign Gedamu

104. There is no fundamental disagreement among members of the team on the major aspects of our "evaluation". Yet here and there, there have been differences of opinion or of emphasis, and it was agreed in the course of our deliberations that members should be given an opportunity to air their views in a separate section of the report. This is, therefore, not to be interpreted as a minority report (at any rate not my portion of it), but as the individual opinions of members supplementing their collective "evaluation". My own views on some aspects of the project are set out below.

#### 105. Participation of the Local Population

Participation of the local population in the project is one of CADU's major objectives. Although some members of the team are



sceptical of the value of this objective as an end in itself, one should nevertheless guard against de-emphasizing its importance, particularly from the viewpoint of phasing out Swedish and Ethiopian management of the project. In addition, this participation can be regarded as a valuable experiment in making development a social rather than a governmental responsibility. Many plans in developing countries emphasize the importance of mobilizing public effort as an indispensable condition for implementation. The more the population is involved in development, the better the chances for creating a self-sustaining growth process, which is after all what economic development is all about.

In this connection, it seems to me that the principle of gradualism adopted in this report for the creation of cooperative societies in the CADU area, though intellectually attractive, is an admission that it is not possible to move more quickly in this area. I would like to take issue with this. The complex problems bedeviling cooperative societies everywhere are not, I admit, to be underestimated and every care ought be taken to avoid the dangers involved in organizing them too hastily. Yet, one should not close ones eyes to short-cut devices.

There are about five cooperative societies which the Development Bank of Ethiopia is financing. Almost without exception, each one of these societies has been created in a rather short period of time. Again almost without exception, the creation of these societies has largely been brought about by one or two highly motivated individuals who are part of the community in question but whose general awareness of development possibilities is much higher. Moreover, these individuals are endowed with leadership qualities.

This phenomenon seems to suggest a short-cut for starting cooperative societies, and CADU may very well benefit by experimenting with it. Rather than starting with "pre-cooperative" societies as has been suggested in this report, it seems to me that CADU should seek out the type of individuals described above in the area and suggest to them the possibility of setting up cooperatives. This could start with, say, grain marketing, now fully under the responsibility of CADU officials. If this proves successful, more cooperatives could be established, either within a general framework or independently of each other. Local participation could be brought about more quickly this way.

#### Contact between CADU and local public officials.

The agreement between the Swedish and the Ethiopian governments provides for cooperation between CADU and local government officials. This is partly to be carried out through the Awraja Development Committee. So far, only one meeting of this committee has taken place. It is clear that not much headway has been made in this area. Among



the reasons for this is perhaps lack of sufficient preparation prior to the launching of the project. Apparently, no steps were taken to prepare government officials at the local level. In future, when programmes such as CADU are initiated, it would be advisable to undertake this type of preparatory work and perhaps bring in development minded amraja and woreda governors to the project area. It would not be too late to try this even for CADU.

#### The Cost of the Project

The team deliberated on this question at great length and the report gives our collective evaluations. The \$15 million or so which is to be spent on the project in the first three years may appear costly. It may very well be that the project could have been carried out at less cost had some elements been dropped out of the programme; and this is true of any project. The main question is whether the elements in the package have turned out to be more or less essential and whether their respective costs have been kept within reasonable limits. With one or two minor exceptions, it has been shown in the report that the elements of the package were all essential. Our visits to the project area and discussions with CADU staff also show that costs per element have been maintained at modest levels.

111. It should also be remembered that a package programme like CADU involves the building up of infrastructural facilities which inevitably raise costs. Buildings and roads serving the project staff are among these items. If staff, both expatriate and local, are to go into the project area to live and work, it is necessary to have these facilities. Only in times of general emergency can staff be expected to live in sub-standard accommodations. Barring this, inducements have to be created to attract individuals to work in remote areas. Housing is one of these inducements, and in this regard the facilities that exist in the project area are quite modest. Housing has been given as an example because it is one of the cost elements which tends to draw criticism.

112. Finally, CADU is a new package programme and has not had the benefit of drawing upon relevant experience. Novel schemes always tend to be on the expensive side. But such pioneering costs are not, in principle at any rate, recurrent and serve as guides for later programmes. It is to be hoped that CADU's experience will serve to reduce costs of future projects.

#### CADU as a model for other projects in Ethiopia.

113. Members of the team strongly believe in the strategy of regional package programmes for rapid agricultural development. There is, in the first instance, the argument that a government whose resources for development are limited should, rather than spreading its resources thinly over a wide area, concentrate them in selected areas of high



potential. Accordingly, the provision of various services by the Ministry of Agriculture should in general follow this guideline. Secondly, as agricultural development calls for action on several fronts, the best results can be obtained if the necessary measures are launched simultaneously on all these fronts. Investment must, for example, be accompanied by an adequate system of extension and veterinary services, research and experiment, marketing schemes, etc. In other words, the essential ingredients for agricultural development should be deployed in an area as components of a rationally conceived package programme. The team consequently feels that the economy of Ethiopia could benefit from the implementation of well conceived and well carried out regional package programmes.

The objectives set for CADU are the following:

1. The establishment of methods of regional agricultural development.
2. Training of staff.
3. The economic development of Chilalo awraja.
4. The participation of the local population in the area's development effort.

These being the objectives of CADU, their relevance to other regional package programmes that may be undertaken in the future is clear. There is, in the first place, the objective of evolving suitable methods of regional agricultural development which could be used elsewhere. Secondly, CADU is to serve as a training ground for staff to be deployed in other areas. Thirdly, experience gained in involving the local inhabitants in the general development effort can also be used elsewhere. It is, therefore, evident that Chilalo is conceived not as an isolated regional development scheme, but as a pilot project to be followed by less experimental and less expensive regional development schemes to be established in various parts of the country. It does not, however, follow that all the objectives set for CADU should necessarily also be set for other package programmes. Such new programmes can be much more single-mindedly directed towards specific economic and social goals.

On the question of the appropriate organizational and institutional aspects of future regional package programmes, it is premature for the team to give a definite opinion. Nevertheless, visits to the project area and discussions with the officials of CADU have brought out a number of points which the team would like to convey to the two governments.

116. a. Relationship with central and local political administration.

CADU has been very pragmatic on this point and, in the opinion of the team, rightly so. With respect to its relationship with the central government, this is largely confined to the Ministry of Agriculture. Relations have been good with this Ministry of CADU



has not found it necessary to establish extensive contact with other organs of the central government. Even more realistic has been CADU's relations with the local authorities. It seems clear that the interest of these authorities in the work of CADU is somewhat less than wholly enthusiastic and, given this situation, the officials of CADU have not taken the trouble to work closely with local government officials. Enough preparatory work may not have been undertaken to impress upon these local officials the importance of a regional development scheme; and in particular of this one established in their area. However a lesson that has been learnt in this respect, which should be used in the establishment of other regional development schemes, is that prior to launching a project similar to that of Chilalo, local officials should be not only informed but also educated on the importance of such schemes. In particular, it would be desirable to bring in a few key officials (e.g. awraja governor and one or two woreda governors) who have been well prepared for the administration of such a scheme and who are, at the very least, development conscious.

#### Arrangements for "phasing out" a regional programme

The team strongly believes that in the case of both CADU and of future package programmes started with external assistance, the sponsors should give serious consideration to this question. The eventual success of any technical assistance project is largely determined by the extent to which the project becomes self-sufficient and continues to be a going concern after assistance is withdrawn; and this in turn depends upon how well a phasing out programme is conceived.

In the case of CADU the agreement between the two governments envisages the complete withdrawal of Swedish financial and technical assistance after a thirteen-year period. In general, this is a sound objective. It is, nevertheless, necessary to work out a gradually declining level of assistance within the thirteen year period, so that assistance is not withdrawn abruptly. The five-year plan of CADU for the period 1970 - 1975 has elements of this type of phasing out, but only with respect to technical personnel. It is the suggestion of the team that a similar programme should be made up for phasing out financial assistance as well after the coming five years.

Insofar as the phasing out of the Ethiopian government's support for the project is concerned, the major goal (and this is in line with the general objectives of CADU) should be to turn over many of the activities presently run directly by CADU to the population in the area or to self-financing independent establishments. Marketing, for instance, should gradually be turned over to co-operative societies which CADU should help to create, perhaps at a more rapid pace than is being contemplated now. Similarly, the provision of credit could also be handled by cooperatives with the support of the Development Bank of



Ethiopia. There are other activities which can be taken over by independent non-private but cost covering institutions, e.g. the distribution of improved seeds, etc.

There will remain, however, certain activities which will continue to remain the major responsibility of the government and of CADU. Experiment and research are the outstanding examples. Obviously, such activities cannot be turned over to the local population or to independent self-supporting establishments and will have to continue to depend on government subsidy.

A rational programme for phasing out external assistance and, where possible Ethiopian government assistance also, conceived along the preceding or similar lines is, in the belief of the team, in accord with what ought to be the philosophy of technical assistance - i.e. that such assistance should have as its overriding objective the gradual self-sufficiency of the recipient country or area in those fields where technical assistance is given from outside. Future package programmes should be formulated in the light of this philosophy, even if specific timetables for phasing out external assistance are not part of the initial plan of operations.