BENGT NEKBY

CADU

An Ethiopian Experiment in Developing Peasant Farming

With Photographs by Per L-B Nilsson

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A Summary of the Work of the Chilalo Agricultural Development Unit during the Period of the First Agreement 1967-70

With Photographs by Per L-B Nilsson

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Contents

1. Background

In 1964 Swedish development assistance in the field of agriculture was limited to projects in Algeria and Tunisia. Both these projects were started without sufficient planning and appraisal and thus ran into considerable difficulties. At the same time most of the donors started to place heavier emphasis on the agricultural sector, since progress in this field seemed to form a foundation for other development work. Great importance was thus attached to the possibilities of arranging the food supply for a rapidly increasing population, to produce cheap food to keep the cost of living within reasonable limits, to improve the income level for the large rural population and thereby to create a demand for industrial produce and an improved basis for capital accumulation.

The Working Party on Agriculture

In December 1964 the secretary-general of the Swedish Board of International Assistance (NIB), therefore appointed a working party to investigate the possibilities and forms for increased Swedish assistance in the field of agriculture. The party, which worked under the direction of Professor Lennart Hjelm, the Dean of the Agricultural College, submitted its report in June 1965. Its report emphasized the long and successful experience of experimental and extension work that had accumulated in Sweden, the comparatively limited supply of agriculturally trained personnel and the almost total lack of experience of the agricultural conditions in the developing countries. It was therefore suggested that larger numbers of students should be admitted to the Agricultural College and to the diploma courses and that there should be facilities for further training in tropical agriculture, which at least in the beginning should

take place abroad. The University of the West Indies in Trinidad was judged to be the most suitable institution for this purpose. It was also recommended that the first projects should be located in countries where the growing conditions were not too exotic in comparison with Swedish conditions. The experience derived from these projects should be utilized in the further expansion of the development assistance.

In order to find a suitable form for assistance in the field of agriculture, a large number of projects in different countries were studied. From these studies the working party drew the conclusion that isolated projects often had limited effects, due to a deficient basis for the activities and/or an unsatisfactory follow-up. Agricultural extension, for instance, was often hampered by an insufficient experimental basis or a lack of means of production or credit. In the cases in which there was apparent success, the project managers had concentrated the resources in the more promising areas and made sure that all the activities that were needed for the agricultural development were carried out and coordinated in an efficient manner. This "package method" seemed promising, both in India and in East Pakistan (Comilla) and in Israel. The income distribution and employment effects seemed, however, to attract little attention, particularly in India, where the primary objective was to increase production.

On the basis of the first report the working party was instructed, late in the summer of 1965, to study some of the main recipient countries which had submitted requests for agricultural assistance. After some further studies it was suggested that the main attention should be devoted to Ethiopia, since agricultural development there was judged to be a precondition for further progress, the Government seemed to be prepared to test new methods, the natural conditions on the plateau made it possible to utilize Swedish farming experience, and finally the existing nutritional and building projects in which Sweden was engaged should be able to give support to the new project.

The working party had, of course, neither instructions nor competence to judge the political situation in Ethiopia. The

Swedish Parliament had already confirmed the choice of Ethiopia as one of the main receivers of Swedish assistance. The difficult conditions with respect to ownership registration and tenancy, at least in certain parts of the country, were noted. The working party thought, however, that, if these conditions were taken into account in the selection of an area for a possible future project, it should be possible to find conditions which were conducive to the implementation of the project. For geographical expansion, it is, however, important that improved legislation concerning ownership and tenancy conditions should be promulgated rapidly. The purpose of the proposed project was thus, from the start, to improve the living conditions for the farmers, small holders and tenants, and thereby to make it possible for the poorest segment of the population to become increasingly market-oriented.

Ethiopian Ideas on Agricultural Development

Other assistance agencies, particularly the World Bank (IBRD) and the USA, also advised Ethiopia to give a higher priority to the agricultural sector and recommended the package approach, concentrating on the more promising regions. This idea was also supported by the United Nations Food and Agricultural Organization (FAO). The Ethiopian Government had not taken any decision on these proposals, but there was a considerable interest in advancing them further.

This was made clear, when the Swedish International Development Authority (SIDA), which succeeded NIB in July 1965, proposed, in response to an Ethiopian request for agricultural assistance in November 1965, that an investigation of the possibilities for a regional agricultural-development project should be started and that an outline plan should be drawn up. This suggestion was supported by all sections of the Ethiopian Government at the time. In March 1966 an agreement on the investigation was concluded. It was pointed out by the Swedes that the agreement only referred to the investigation and that there was no obligation to assist with the implementation of any plan. The Ethiopian contributions to the investigation were

rather modest and were mainly limited to making information available and to helping the investigating group in making the necessary contacts. The first specialists arrived simultaneously with the signature of the agreement. The group contained about 10 members.

Project Preparations

After an introductory study of the economy of the country and the existing programs and plans for the agricultural sector, the first task of the investigating group was to select a suitable area and then to plan a development program for this area. This outline of principles was thereafter to be reviewed by the two Governments. On the basis of the comments made a detailed plan was to be submitted before a possible basis for cooperation could be decided on. The different steps in the project preparation will be followed here.

The Ethiopian Setting

Ethiopia is a highland country surrounded by deserts and traversed by the great East African depression, the Rift Valley. Both the east and the west plateaus are situated at altitudes of more than 2,000 metres above sea-level. The climate is relatively cool for a country so close to the equator. Frost occurs at night in December. The big rains come during July—September, but a smaller rainy period occurs at the beginning of the year. The rainfall and the temperature vary with the altitude. Only a few big towns exist, and about 90 per cent of the population live in rural areas. The road network is still very inadequate and radiates from the big cities of Addis Ababa and Asmara. Railways connect Addis Ababa with the harbour of Djibouti in French Somaliland and Asmara with Massawa. The most important Ethiopian port, Assab, has only a road connection. No important mineral deposits have yet been found. The country has long been isolated and fragmented, and both unification and modernization have come very late.

The Ethiopian population is estimated at about 23 million, but no census has ever been taken. There are a number of tribes speaking different languages, of which the Gallas, the Amharas and the Tigreas are the biggest. The country is divided also on religious lines between the Orthodox Christians (the state religion is Christianity) and the Moslems. A common teaching language, Amharic, has been introduced in the primary schools, but illiteracy is still very common. From the seventh grade onwards the teaching is in English.

The country is ruled by the Emperor, who has considerable power. There are no political parties. The Emperor appoints the Prime Minister, who selects his ministers. In the provinces the power of the Emperor is delegated to a Governor-General. Both the Governor-Generals and the ministers may get decisions by going directly to the Emperor, by passing the Prime Minister and the Council of Ministers. However, this procedure is less often used now, and the council and the Planning Commission have been given a more central position. The Parliament has two Chambers. The Senate is appointed by the Emperor, and the members of the House of Representatives are elected every fourth year at general elections. The turnover of members is quite considerable. Since the members do not represent any definite political party, they are elected on their personal qualifications. The position of the Parliament has been strengthened during the last few years.

Ethiopia has one of the lowest gross national products *per capita* (about 150 Ethiopian dollars; one Ethiopian dollar=40 American cents) in the world. Sixty per cent of the national product comes from the agricultural sector. Exports consist almost exclusively of agricultural produce. The budget amounts to about 600 million Ethiopian dollars, of which defence needs and the police administration take about 26 per cent and agriculture about 5 per cent. The development assistance given to Ethiopia is very small (about 3 Ethiopian dollars per person and year), with the USA, the World Bank group and Sweden as the main cooperating partners. A large share of the American contribution is channelled to defence.

Soon after the end of World War II, a secondary school with an agricultural bias was established at Ambo. Through American assistance an additional Agricultural Institute was erected at Jimma and an Agricultural College at Alemaya at the beginning of the 1950's. The establishment of these schools has resulted in a relatively good supply of staff with satisfactory theoretical training. The Agricultural College is also engaged in experimentation, but the concrete results have been insignificant, except in the last few years, and knowledge of Ethiopian farming conditions is still insufficient. The Agricultural College is a faculty of the Haile Selassie I University.

In order to satisfy the practical needs for applied research, an Institute of Agricultural Research was established in 1965, with the assistance of the UN Development Program. The Institute is organized as an independent unit within the Ministry of Agriculture. At the outset of the Chilalo project the Institute had not yet been able to start its activities.

The extension service is directly subordinate to the Ministry and employed and still employs about a hundred agents, who are placed throughout the country along the main roads. Since the experimental basis has been deficient, there has been a lack of supervision, proper means of production and credit (see below) and the program has had little effect.

Produce is marketed through traditional merchants. Cooperative development is still in its infancy; there are a number of cooperative societies, but they mainly comprise the large farmers. A government-operated grain corporation has started certain activities aimed at price stabilization, but so far the farmers have been and still are in the hands of the traditional merchants. The transport costs are high and the market orientation rather small.

The production of the seeds of new varieties is not yet organized, and the use of modern means of production, such as fertilizers, is very insignificant. An unsuccessful attempt was made to supply credit to small farmers, but now only large loans against mortgages in urban property are given.

The veterinary service comprises only about 40 veterinarians, who have the care of about 25 million cattle, besides sheep, goats, horses, donkeys, etc.

Plans for the Agricultural Sector

The first national plan för Ethiopia referred to the period 1958—62. The plan was never published and was a secret document for most of the period. It thus had hardly any impact.

The second plan was published, and was more penetrating in its analysis of the objectives. The means for their fulfilment were still vaguely described. High priority was given to the agricultural sector and to institutional reforms with respect to ownership and tenancy. The organizational and administrative preconditions for the implementation of the plan were basically non-existent, and though the objectives were partially achieved, this seems largely to have been due to other factors.

In 1966 special ministries for planning and land reform were established. This certainly strengthened the development possibilities.

The third plan for the period 1968—73 implied a big step forward, and it now plays an essential role as a basis for continued efforts. Though balanced development is recommended, the agricultural sector is given high priority for the following reasons:

1. The production of food for the rapidly increasing population. The increase of population is estimated at 2 per cent or more than 500,000 persons annually.

2. The production of raw material for industry (particularly the textile industry).

3. Agriculture is the basis for the consumption industry. Since about 90 per cent of the population has its main income from agriculture, the living standard within the sector will largely determine the demand for consumption goods.

4. *Capital accumulation.* Since the agricultural sector contributes about 60 per cent to the gross national product, the possibilities of capital accumulation here (for example, through

taxation) will determine the rate of development also within other sectors (education, road construction, etc.).

5. *Foreign exchange.* Though agriculture is today responsible for almost the total Ethiopian exports (coffee, hides, etc.), the possibilities of increasing sales abroad or of reducing imports (for example, imports of textiles and wheat) must be fully utilized.

Two main approaches for the development of Ethiopian agriculture have been indicated in the third plan.

In order to achieve a rapid result, particularly with respect to food, industrial raw material and export produce, it is suggested that available government land should be utilized for the establishment of large commercial farms. An example of this is the sugar enterprise at Wonji (pictures 1 and 2), which is a limited company with Dutch participation. Protected by an import duty, it has quickly been able to satisfy domestic demands. It is proposed that similar enterprises should be established by private or government investment and with or without foreign participation.

The other, more fundamental approach takes the traditional peasant farming into consideration. Here it was suggested that the "package method" should be used. The Chilalo Agricultural Development Unit (CADU) is an example of this method, i.e. a locally well-coordinated attack on the most important factors which are preventing development. In this connection reforms with respect to ownership and tenancy conditions are considered necessary preconditions for a rapid geographical expansion.

With the help of the CADU example, the vague methodological prescriptions in the second development plan could be made more precise and firm in the third plan.

In order to increase the resources, the package approach is first used in areas which can produce rapid and considerable results. These areas seldom coincide with overpopulated regions with low incomes and often far advanced erosion.

1. Cultivation of sugar cane at Wonji
2. Harvesting sugar cane

Concentration on such areas would require considerable resources over a long period of time and, in addition, considerable practical experience of integrated development work and has therefore been postponed until a later stage.

Selection of Area

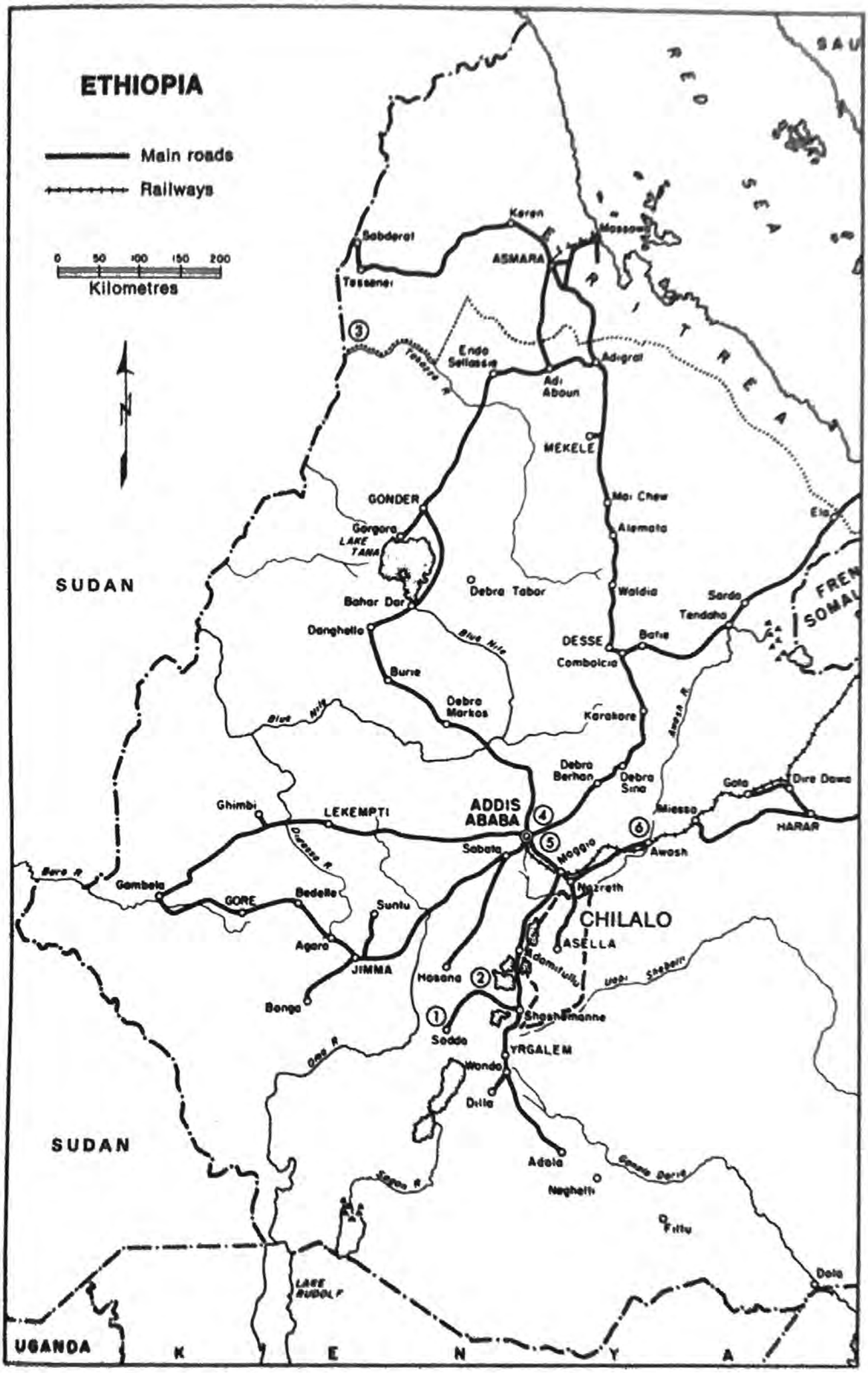
The Ethiopian Government indicated five areas on the basis of a preparatory investigation conducted with the help of the World Bank. In the choice between these areas the following main criteria were used:

1. *Natural conditions.* The possibilities of intensive production should be excellent. From the Swedish point of view the production should not be too exotic.
2. *Marketing.* It should be possible to transport inputs into the area and produce from the area to the big consumption centres.
3. *Ownership conditions.* An area mainly farmed by owners with a satisfactory acreage of land should be selected and regions dominated by big landowners with tenants should be avoided.
4. The population should be progressive-minded.
5. *Possibilities of expansion.* It should also be possible to apply the experience gained in a larger area.

On the basis of these criteria it was suggested that further investigation should be concentrated in the Chilalo district in the Arussi province. This proposal was also accepted in July 1966. The area is described below.

Natural Conditions (picture 3). The greater part of the selected area is situated on the eastern Ethiopian plateau at an altitude

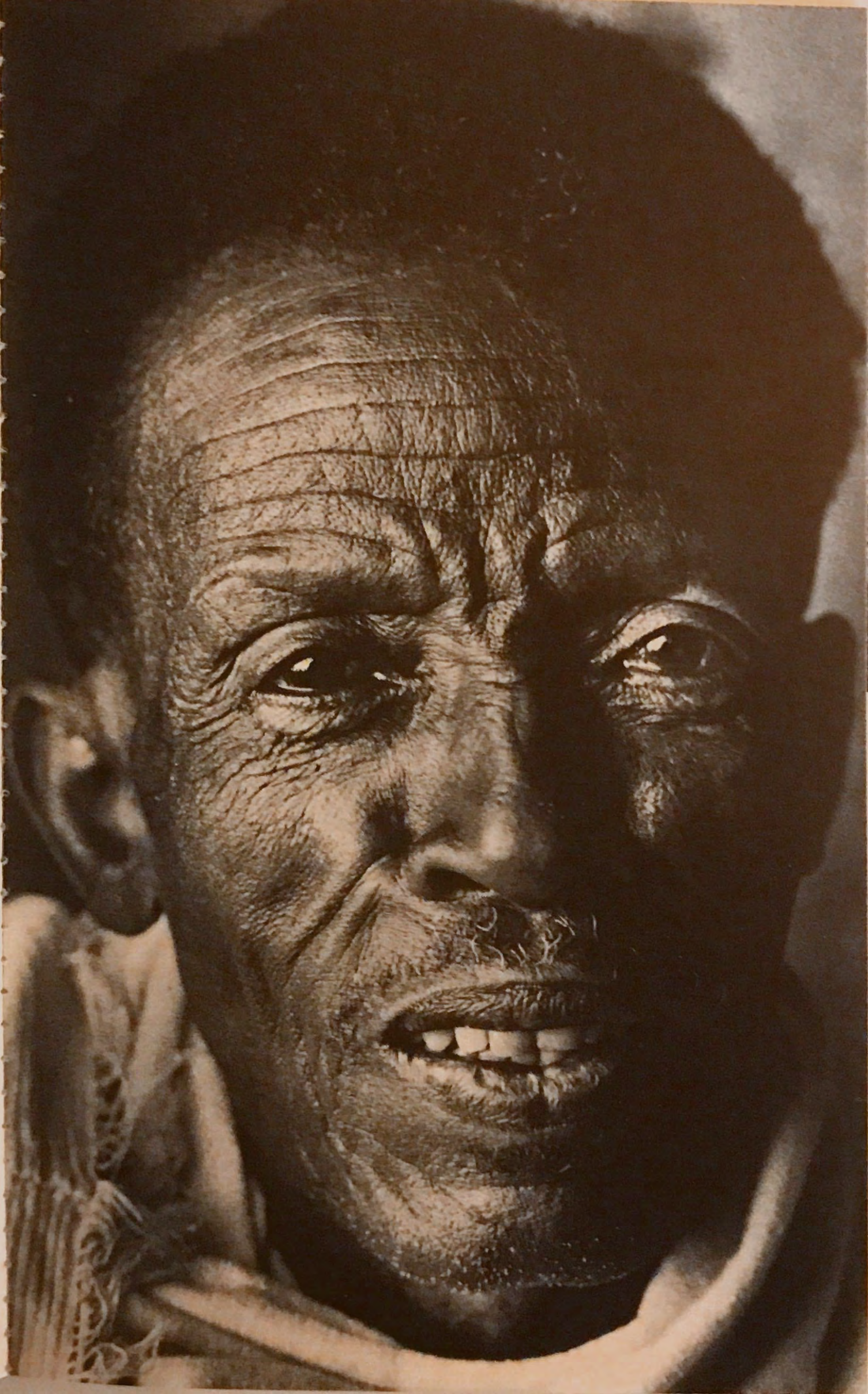
3. Ethiopia (southeastern part deleted)
   1. Wolamo Agricultural Development Unit (IBRD)
   2. Shashamanne project (USAID)
   3. Northwestern lowlands project (IBRD)
   4. Addis Ababa Dairy Development Unit (IBRD)
   5. Ada district (USAID)
   6. Awash Valley Authority


ETHIOPIA
Main roads
Railways
0 50 100 150 200
Kilometres
N
RED SEA
ERITREA
Keren
Massawa
Sabderat
ASMARA
Tessenei
Endo Selassie
Adigrat
Adi Aboun
MEKELE
GONDER
Mai Chew
Gorgora
LAKE TANA
Alemata
Debra Tabor
Waldia
Sardo
Tendaho
Bahar Dar
Dangheila
Blue Nile
DESSE
Batie
Combolcia
Burie
Debra Markos
Kombolcha
Awash R.
Debra Berhan
Debra Sina
Gota
Dire Dawa
Ghimbi
LEKEMPTI
ADDIS ABABA
Mieso
HARAR
Sabata
Awash
Nazreth
Gambela
GORE
Bedelle
Suntu
CHILALO
ASELLA
Agaro
JIMMA
Hosana
Benga
Sodda
Shashemanne
YRGALEM
Wondo
Dilla
Adola
Negheli
Fiitu
Dolo
LAKE RUDOLF
SUDAN
SUDAN
UGANDA
KENYA

of between 2,000 and 2,700 metres above sea level. It is bounded to the west by the Rift Valley (at an altitude of 1,600 metres) and to the east by a mountain range, the peaks of which reach 4,000 metres. To the north and to the south the boundaries of the Chilalo district are two major rivers. The area comprises about 10,000 square kilometres, of which about 20 per cent is cultivated land. The climate varies with the altitude. On the plateau the rainfall is between 750 and 1,500 millimetres, but decreases to about 500 millimetres in the valley. The maximum temperature is comparatively even (about 20—28°C), while the minimum temperature mostly ranges from 10 to 15°C. In December frost may occur. The length of the rainy period and the intensity of the rains may vary considerably and, of course, influence the crop production. Besides the two rivers which mark the boundaries of the Chilalo district, there is a third river, the Katar, which flows into one of the lakes in the Rift Valley. Very few wells or springs occur in the area. Drillings have shown that the groundwater level is often very deep down. Water is mainly taken from the small streams, which during the dry season means walking a considerable distance. Through the area there runs a road in north—south direction, but the southern part of it can only be utilized during the dry season. Otherwise there are only mule tracks, but some of them can, at least during the dry season, be utilized also by four-wheel-drive vehicles. The capital of the district and the province, Asella, has about 14,000 inhabitants. A number of small market villages are scattered throughout the area.

Population (pictures 4—8). The Chilalo district is inhabited by about 350,000 people (35 per square kilometre), which implies about 70,000 families. More than 95 per cent of the population derive their main income from agriculture. The original population (the Arussi Gallas) has during the last 70 years been mixed with and partly been replaced by the Shoa Gallas and Am-

4—7. A farm family



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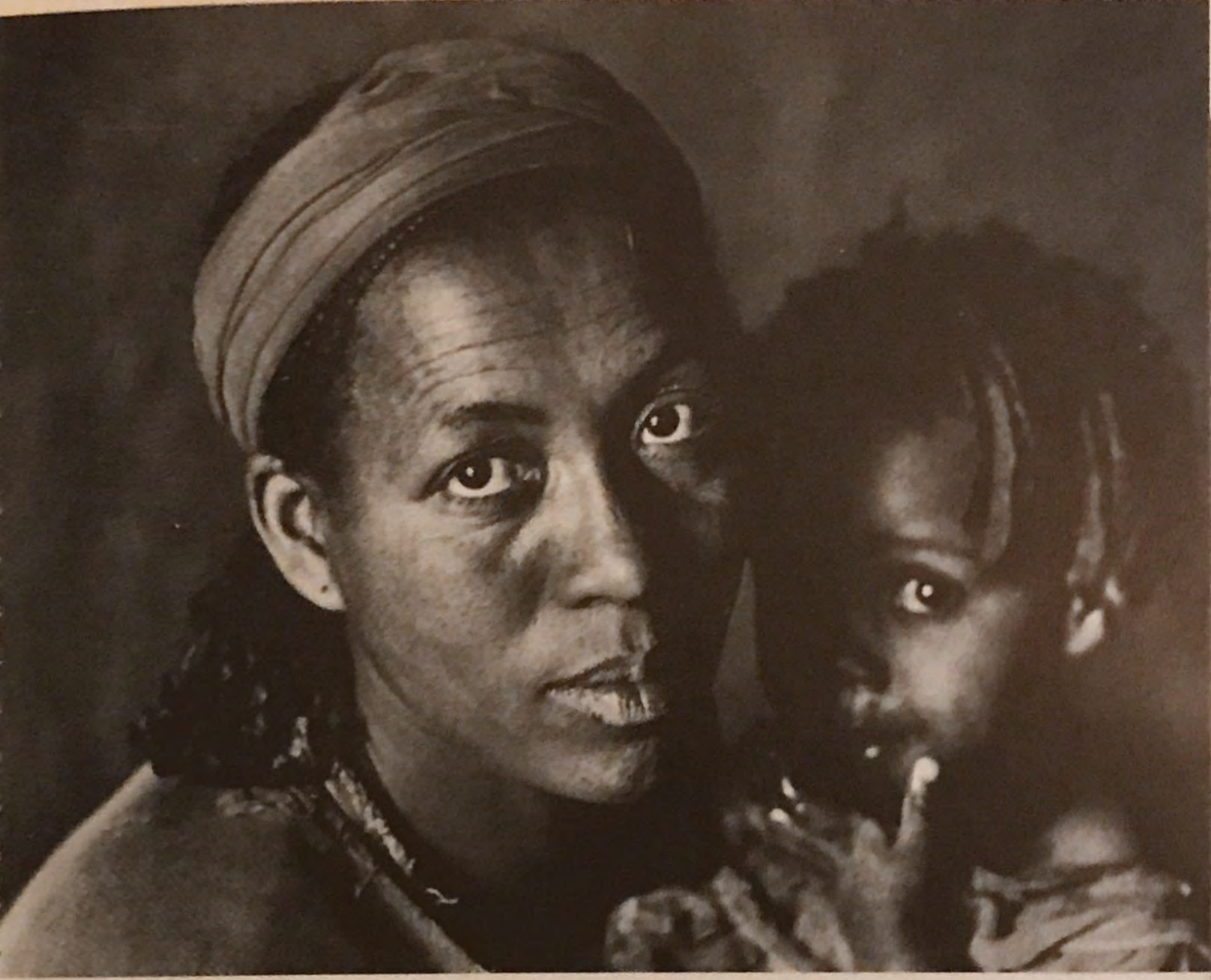

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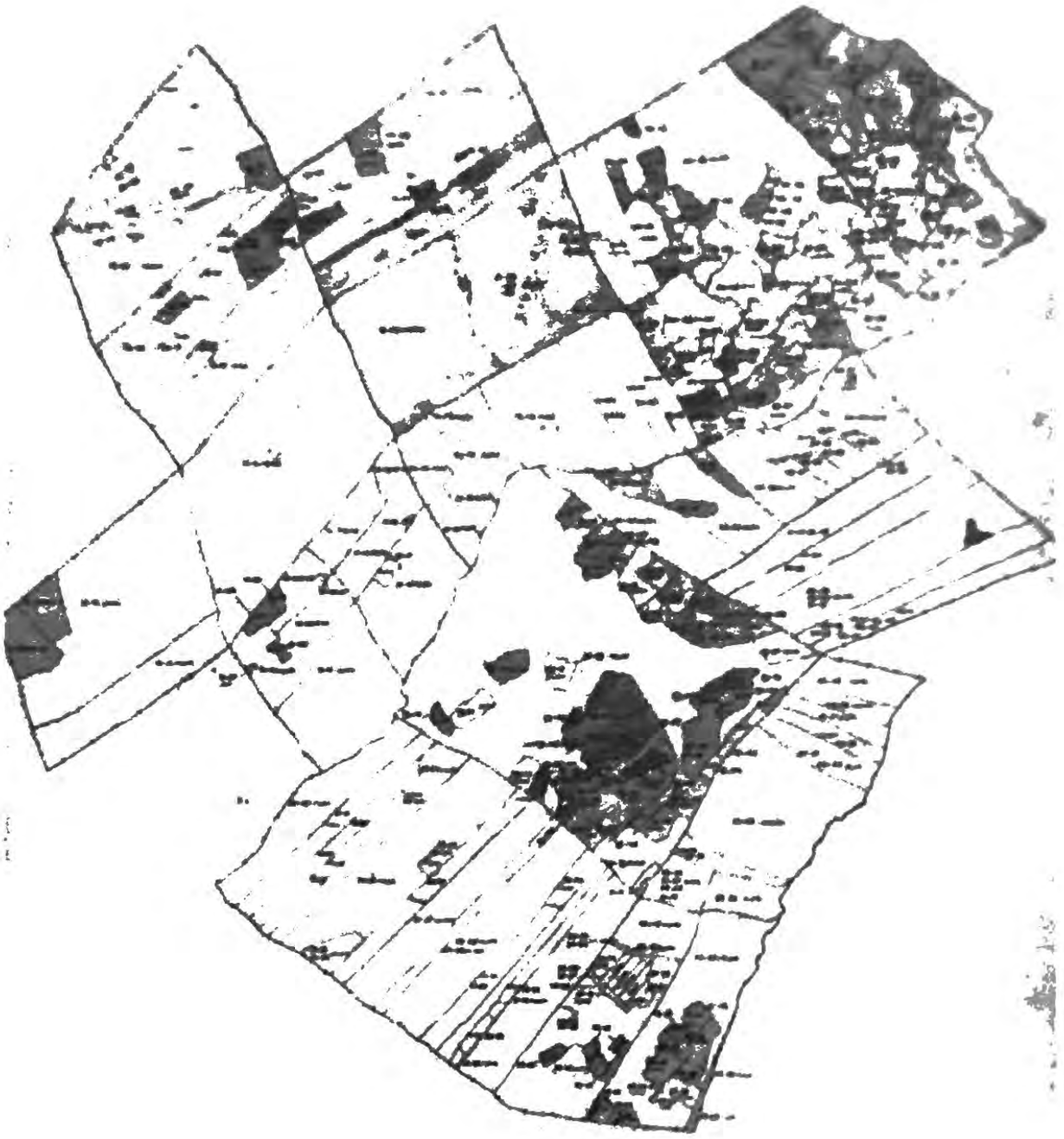
haras, with the result that the tribes are now equal in size. The two last-mentioned tribes are Orthodox Christians, while the Arussi Gallas are mostly Moslems. The different tribes seem to get along quite well nowadays. The recent mixture with other tribes seems to have given the people new impressions and a greater receptiveness to ideas from outside. The ability to read and write is still very uncommon (below 10 per cent), but it is estimated that in about every third or fourth family there is someone who is at least reasonably literate.

Ownership and Tenancy Conditions. The tax register only lists the name of the owner, the approximate area owned, the fertility of the land and the district in which the farm is situated. Usually no measurements have been made and no boundary has ever been determined. This deficiency means that about 75 per cent of all civil cases in the courts are

8. The religious life is of great importance

ownership conflicts. The average area per farm is about 14 hectares. There are comparatively few large holdings in Chilalo, and those that occur are generally farmed by the owner himself. Nevertheless about half of the farmers are tenants. The tenants have, however, considerably smaller units (3—4 hectares) and thus farm only about 20 per cent of the total cultivated area in the Chilalo district. The figures are very approximate but are derived from an investigation in the area shown in picture 9. The shaded area indicates land which is farmed by tenants. Fragmentation of the land is not yet any great problem. The position of the tenant is at present very insecure. He may be evicted at any time after the harvest and before planting. The chances of his getting reasonable compensation for durable investments are relatively small. Generally (in about 75 per cent of all tenancy agreements) one



9. Ownership and tenancy conditions in the Wajji area

Size of area 1,128.7 hectares

Number of owners 77 (six do not live in the area), farm size 14.66 hectares, biggest farm 134.62 hectares

Number of tenants 59, farm size 4.86 hectares, biggest unit 45.16 hectares

Fragmentation

Owners: 90.9 % have two fragments or less

Tenants: 61.0 % have two fragments or less

Size distribution

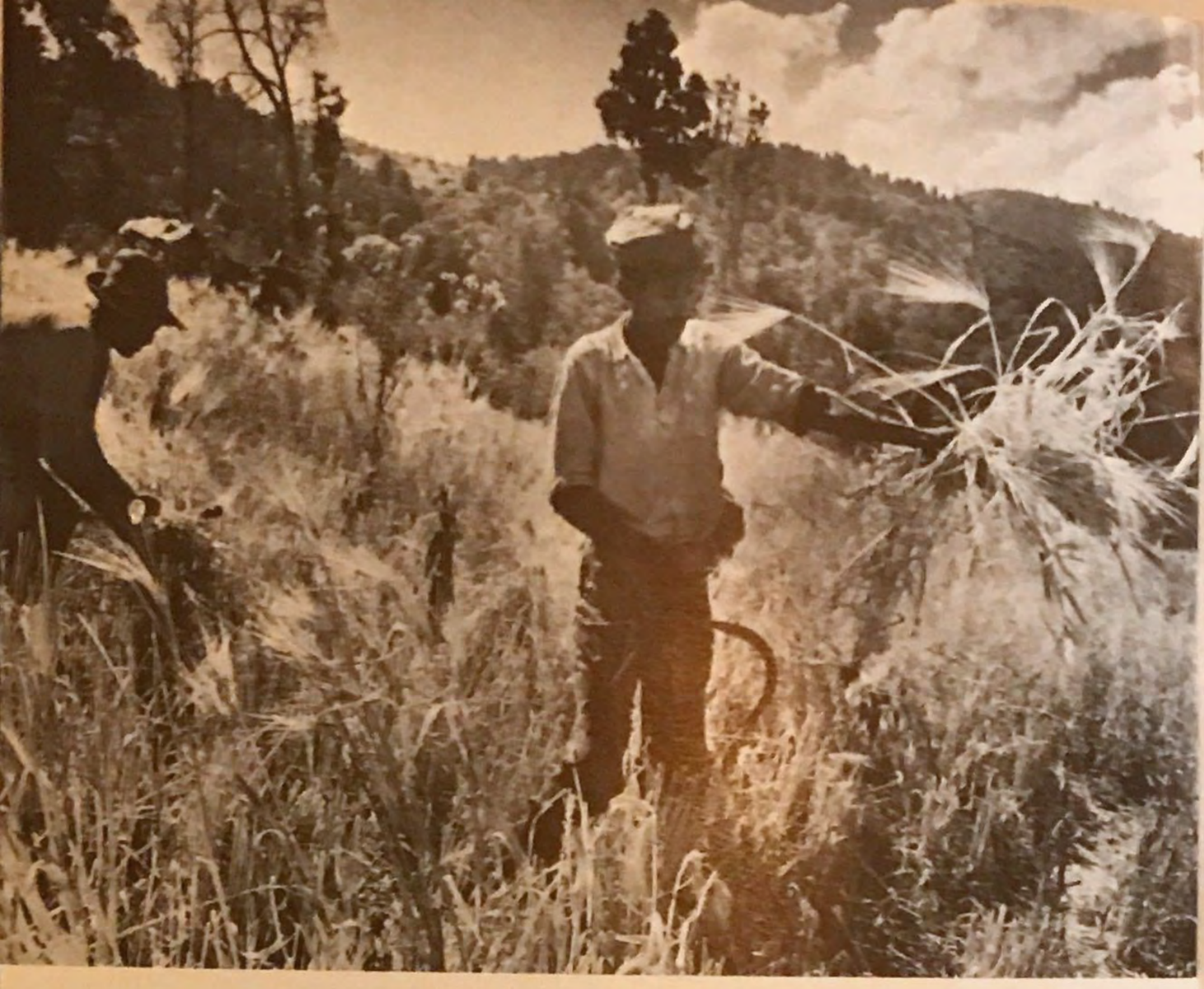
	Owners	Tenants
0– 5 hectares	35.1 %	71.2 %
5–10 hectares	28.6 %	13.5 %
10–25 hectares	22.1 %	15.3 %
More than 25 hectares	14.2 %	15.3 %

third of the harvest is paid over as rent. If the owner provides oxen and seed, the rent increases to about half of the harvest. In this sharing system the interest of the tenant in acquiring new means of production must be comparatively small, since he must pay the whole cost but can retain only a part of the increase of production. If, for instance, a tenant who pays 50 per cent as rent uses fertilizer at a cost of 40 Ethiopian dollars per hectare and gets a production increase worth 80 dollars, he just breaks even but no more.

Farming. The soils are comparatively rich in organic material and have a high clay content. There is a marked deficiency of phosphorus throughout the area. There are also drainage problems, particularly south of Asella. Erosion occurs but is not very severe. An ecological research group under the direction of Professor P. Brinck therefore found the Chilalo district suitable for intensive agricultural development.

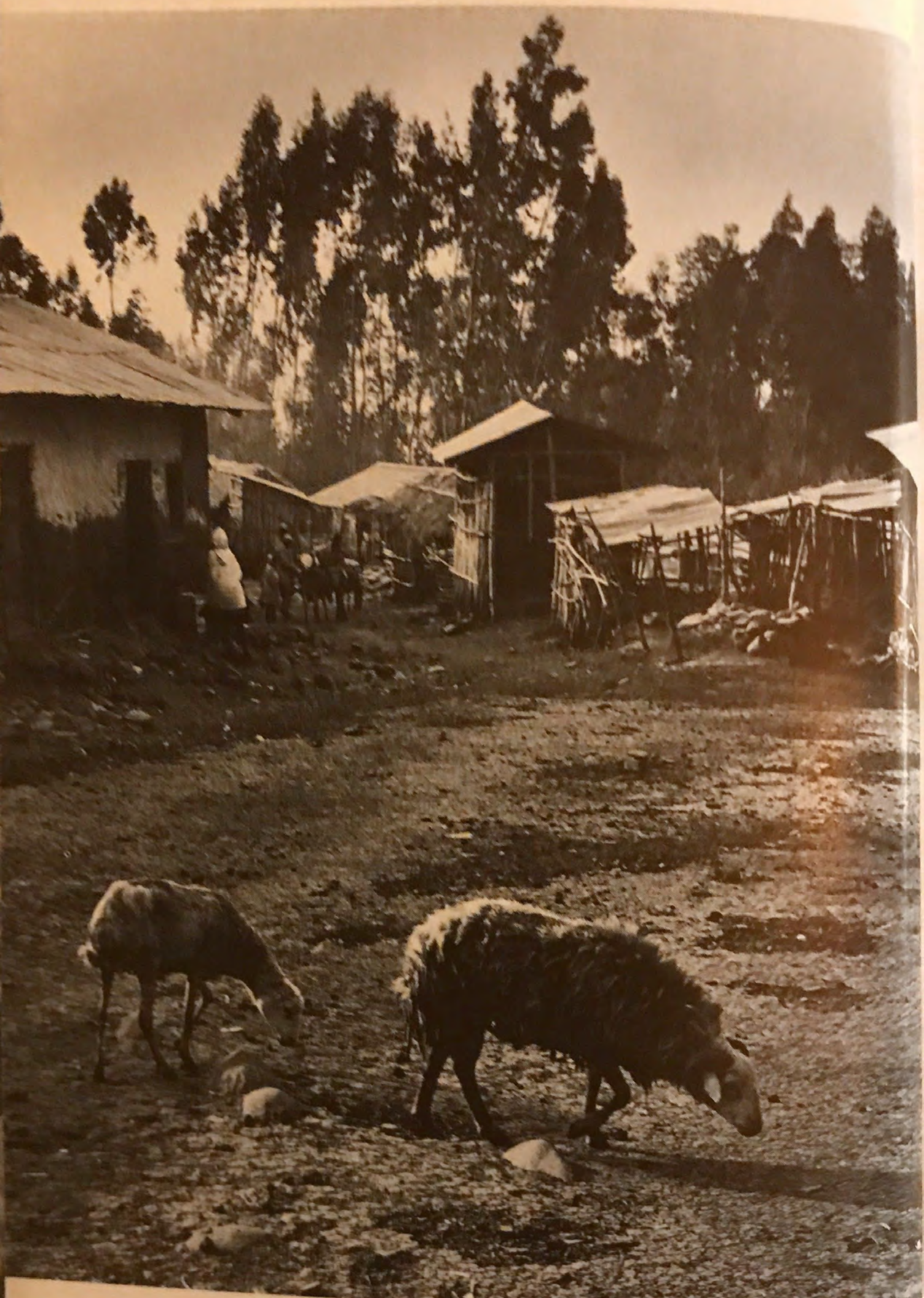
10. A wooden iron-tipped plough, the traditional means of cultivation in the area. (Photo, H. Linder.)

11. Cultivation by ox-power



14. Seed-cleaning.
(Photo, H. Linder.)

15. Storing



17. Market village

19. A farm

The main crops of the area are wheat and barley, but oil crops (flax) and pulses are also grown. Livestock are common, but the numbers are somewhat smaller with the tenants. They have cattle (for traction purposes and milk and meat production), sheep, goats and a few chickens. On the average, they have 8.5 cattle (2.7 cows), 4.4 sheep, 0.8 goats, 1.6 horses, donkeys, etc. and 1.5 hens per family.

The return from farming is very low. The yield of wheat per hectare is below 10 quintals, while barley gives a somewhat higher yield of about 15 quintals (compare Sweden, where spring wheat and barley yield 32 and 30 quintals per hectare respectively). Due to bad genetic capacity and deficient pasture, particularly during the dry season, the milk yield is only about 200 litres per lactation period.

The calving intervals are very long, the calf mortality is great and the time to reach maturity is long. Compared with

European conditions, the veterinary problems are enormous, with rinderpest, foot-and-mouth disease, brucellosis, parasites, etc. For African conditions, the situation, particularly on the plateau, is comparatively favourable, particularly due to the absence of fevers transmitted by ticks.

On the crop side the diseases are many (rust, smut and fungus). The insect attacks on the plateau are not too severe. The weed problems are, however, considerable.

The income situation is very difficult to determine in a subsistence economy of this kind. Detailed investigations are now being planned, but the value of the production may be estimated at about 800 dollars per family and year.

Taxation on the basis of an assessment made by a special committee has recently been introduced. The authorities have not yet mastered the difficulties in connection with the assessment, and the system is open to undue influences of different kinds.

20. Fire-wood collection

21 Grain being crushed

22. Kitchen utensils.

23. A meal

meal

The land is ploughed two or three times in different directions with oxen and a simple wooden plough with an iron tip (pictures 10 and 11). When grassland is broken, the turfs are sometimes collected in heaps and burned, after which the heaps are spread again. Through this procedure, minerals are released and also a better seed bed is obtained to start with. The seed is broadcast by hand and covered by ploughing the land anew. Through this procedure the seeding depth is often unsatisfactory. Fertilizer was not applied until the CADU started its activities. At that time the farmers almost exclusively used their own seed of local and often mixed varieties.

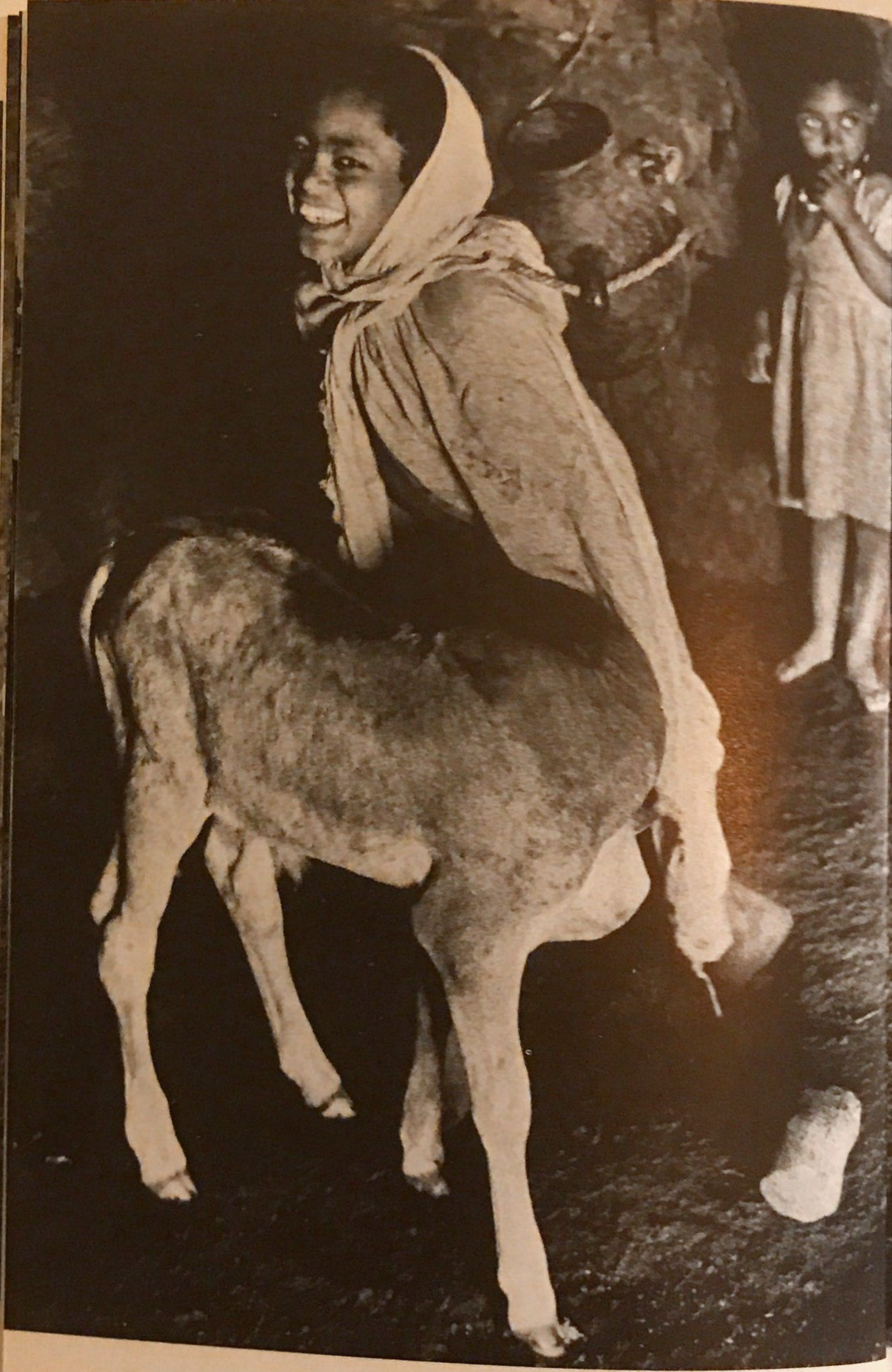
The weeding is done by hand and with varying intensity. The crop is harvested with a sickle (picture 12). The grain is spread on the ground and threshed by letting the cattle trample it (picture 13). The grain is cleaned by throwing it up in the air, so that impurities are carried away by the wind (picture 14). It is stored in home-made silos made of branches and clay and covered by a thatched roof (picture 15). These silos do not protect the grain against either insects or rodents. The part of the harvest which is marketed is transported by donkey or by the women (picture 16) to the nearest village (picture 17), where it is sold in the market (picture 18).

Particularly south of Asella, it is often difficult to maintain the fertility of the soil, and after about 3—4 years of cultivation the land is allowed to go back to pasture and remain uncultivated for as long as the size of the farm allows, i.e. usually for about 4—8 years.

There is no purposeful breeding or feeding of the animals. The children take care of the animals. During the rainy period a large number of the owners move down to the lowlands with their cattle. Sometimes pasture is rented against a fixed fee.

The farmer's family lives on its own land in a round, thatched hut (picture 19). Square houses with tin roofs are, however, becoming more popular nowadays. The women fetch firewood (picture 20) and water and prepare the food (picture 21) and cook it with simple utensils (picture 22). Usually the family eats (picture 23) a fermented, grey, pancake-like bread

24. The children are often given milk



25. Small animals are kept in the house

called *injera*, together with a sauce (*waat*), which on special occasions may contain meat but often contains only beans. The children usually get milk (picture 24), but hygiene is a difficult problem. During the night the calves, sheep, goats and chicken are kept in the house (picture 25). The women participate to some extent in the agricultural work and, together with the children, take care of the animals. The women also participate actively in the marketing of the produce.

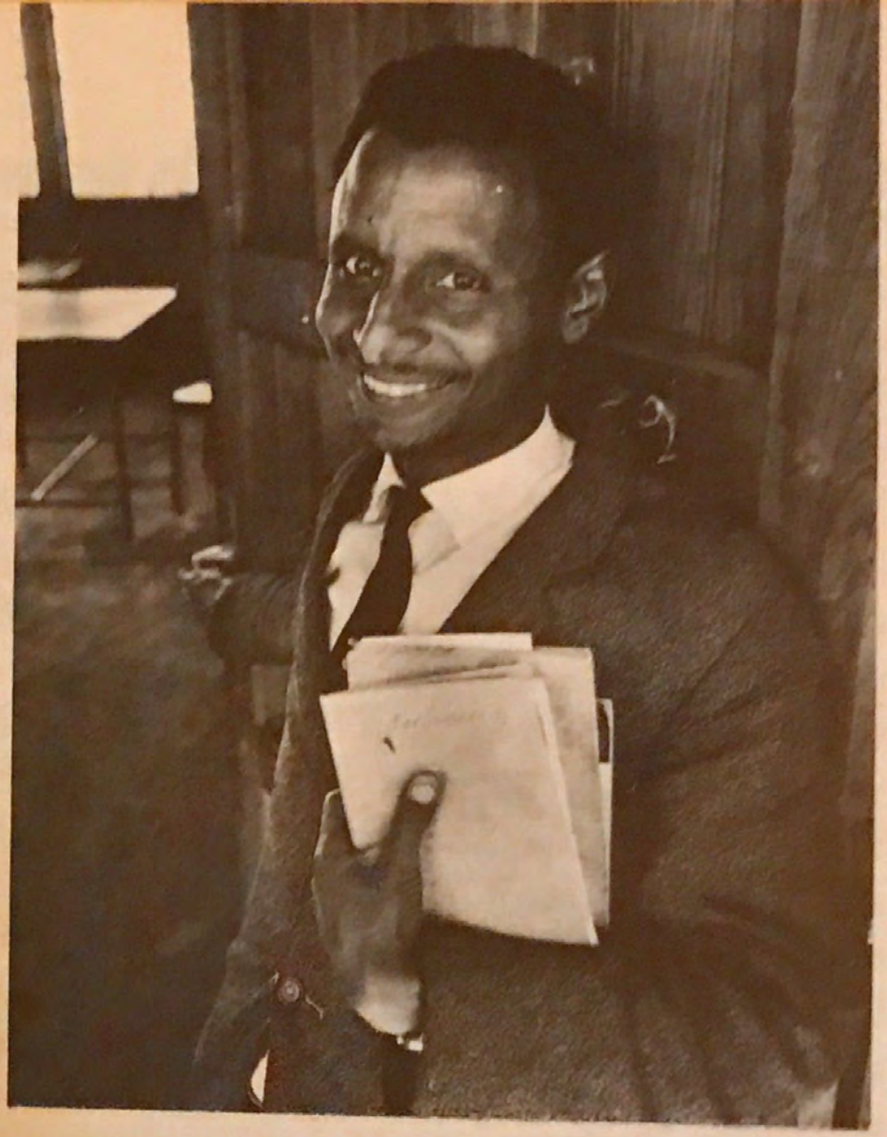
There are a large number of holidays (about 140, including Sundays). The Christians celebrate their saints' days every month, and the Moslems undertake certain pilgrimages. Simple religious groups are generally formed. These groups often give help in connection with emergencies.

Government Activities. The local administration of the province is headed by a Governor-General, who has considerable powers. He is responsible for the police, the courts and the tax collection. His tasks also involve the coordination of the local activities of the different ministries. The Arussi province is divided into three districts (*awrajas*), of which Chilalo is one. Chilalo in turn is subdivided into 10 subdistricts (*woredas*).

The educational facilities consist of a secondary school at Asella (grades 8—12) and primary schools (pictures 26 and 27) in the larger market villages. These facilities are rather limited (13 per cent of the children of school age go to school). Many of the primary schools only provide the first few grades. A large number of children leave school after the first grade.

Voluntary organizations, such as missionary societies, work in the educational field, including adult education, and also in the field of health.

The Arussi province, with over 700,000 inhabitants, has only one hospital, with 80 beds and 2 doctors. In addition, there are a number of health centres and health stations, which are partly supposed to deal with preventive medicine. The qualifications of the staff and the resources are, however, very limited and therefore the effect is often small. The child mortality is very high (22 per cent), particularly from stomach diseases and diseases of the lungs. Venereal diseases are common among



26–27. Teacher and student

the adults. Epidemics of different kinds occur fairly frequently.

At the outset of the project the Ministry of Agriculture had a number of agents in the area, but the effect of their work was small (no basis in experimentation, no supply of inputs, no credit, etc.). Vaccinations against rinderpest had been initiated.

The Ethiopian Government has a special Ministry of Community Development. Staff are also trained for this purpose. Chilalo was included in this programme from 1965. The purpose of these activities is to encourage the local population to practise self-help with the assistance of a village-level worker. Though the idea in theory is attractive, in practice there are few village-level workers who are able to give sufficient encouragement. As the direction of the activities is often doubtful, the knowledge of the different practical and economic possibilities of realizing the plans is less than adequate, and the resources are insufficient, the community-development activities have, with few exceptions, resulted in failures in Ethiopa, as in other parts of the world. This was certainly the case in Chilalo, where attention was devoted to undefined committee work, cooperative development (without knowing what the cooperation was about), adult education, etc. In order to avoid conflicts with the CADU program the community-development activities in Chilalo have therefore now ceased. The CADU is supposed to realize the important idea of helping people to help themselves.

Project Proposal

In October 1966 the investigating group put forward an outline proposal as to how the development problems in the Chilalo area should be attacked and what organization and resources would be needed for this purpose. Since the ideas in the proposal largely coincided with the program which was later realized and which is described in detail in Chapter 2, the intention here is only to describe how the proposal was handled by the two Governments.

A committee of Ethiopian officials scrutinized and rapidly

recommended approval of the proposal, which was then taken up by a ministerial committee. This committee considered the matter for a long time. It was made completely clear to them that, if the proposed principles were practised, they would yield a much better result than the present or other conceivable systems. They must also be prepared to apply them not only in the Chilalo district but as a main method for the development of peasant farming. This in turn meant that, to start with, the resources must be concentrated in a few geographical areas, which would imply certain political problems.

It was not until the end of February 1967 that the ministerial committee accepted the principles involved. This may seem like a long time to reach such a decision. In retrospect, one can, however, conclude that the time seems to have been very well employed, since afterwards they never hesitated about the principles but to the best of their ability tried to apply them also outside the Chilalo district.

On the Swedish side an expert committee was appointed, consisting of Professors Gårdlund, Hjelm and K. E. Knutsson, who examined the proposal, together with the staff of SIDA. After a mainly favourable review from these experts, great attention was devoted to the definition of the smallest conceivable but still effective project that could be designed. Since the new package method was untested in Ethiopia, it was decided, in other words, to try to start on the smallest possible scale. The financial situation at the time also limited the SIDA budget, and it was for a long time doubtful whether the project could be implemented at all, even in its minimum form. At this time a certain scepticism appeared in the Ministry of Foreign Affairs with regard to the desirability of having Ethiopia as one of the main recipient countries for Swedish assistance. This scepticism was expressed as hesitation about a further increase of the assistance to be given to Ethiopia. Also on the Swedish side the position was therefore not clarified until the end of February.

The investigating group had in the meantime started certain experiments with the intention of finding agricultural innovations. It also tried to broaden and deepen its knowledge of

the area in question. In March the group received instructions for the detailed planning after contacts between the two Governments. This plan was presented in June and contained a work program, staff requirements and job descriptions, a building program with sketches and equipment lists and an operating budget for an introductory three-year period. It was scrutinized by both parties without further complications.

The Agreement

A Government agreement was signed on 8 September 1967 for the period September 1967 to July 1970. It was later extended to December 1970. By this agreement the Chilalo Agricultural Development Unit (CADU) was created as an independent unit within the Ethiopian Ministry of Agriculture. The investigating group was dissolved and its members were transferred to CADU. The objectives, the plan of operation and the supporting measures which were to be undertaken by the Ethiopian Government were defined. These matters are presented in Chapter 2. The present section contains only a few comments on the design of the agreement.

For the first time with respect to Swedish assistance, an attempt was made in the CADU agreement to integrate the assistance into the administration of the receiving country from the beginning. Earlier projects had been directed by a board, on which Sweden was represented. This had often meant that the interest of the receiving country in the activities had been comparatively lukewarm and that the main responsibility for the conduct of the project had been put on Sweden. This in itself very undesirable state of affairs had in turn often involved difficulties, as regarded the take-over of the project.

Under the CADU agreement, the Ethiopian Ministry of Agriculture is entrusted with the conduct of the project, in accordance with the plan of operation. SIDA only participates in the approval of a detailed work plan and budget once a year and assists, when requested, as regards recruitment and procurement.

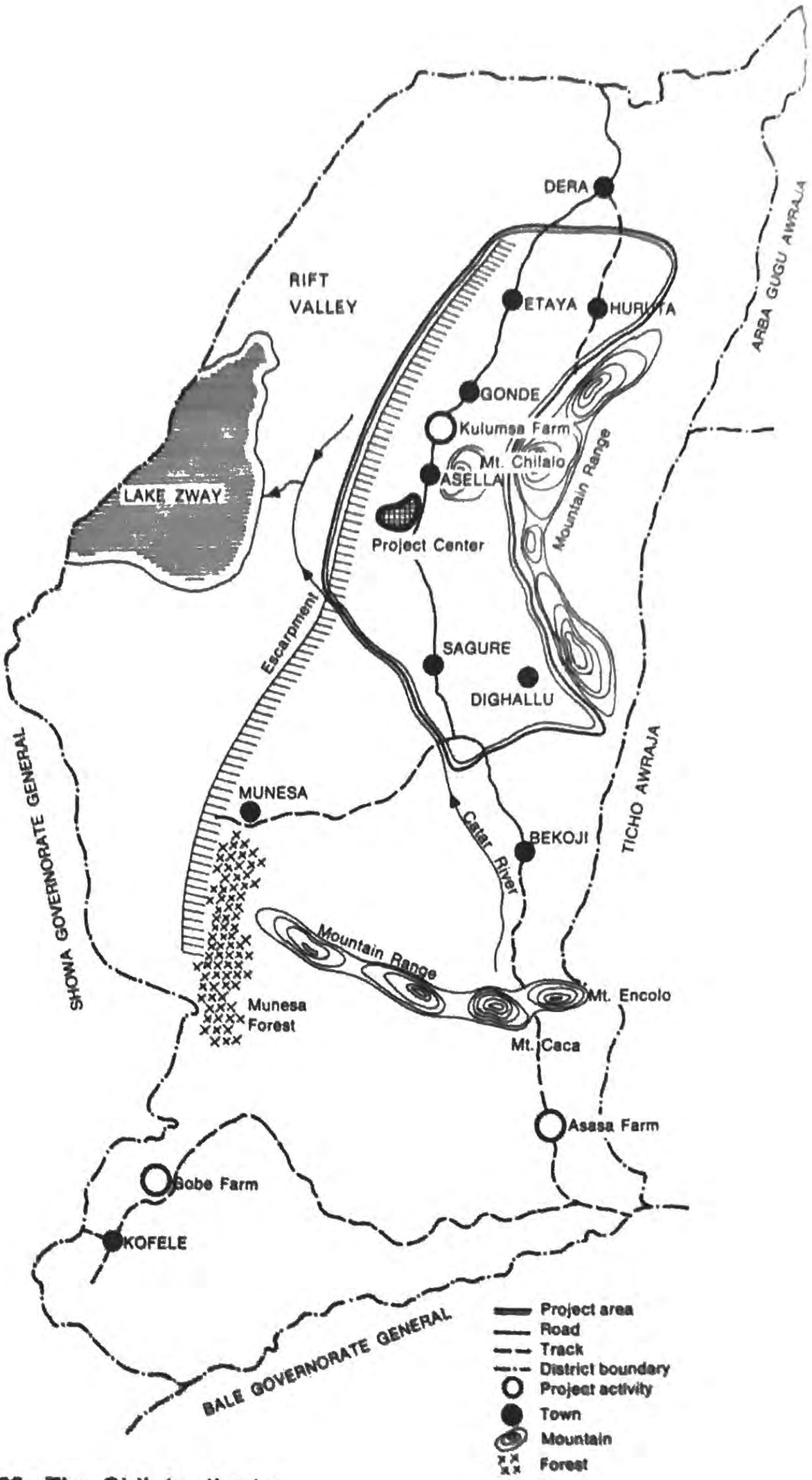
The results achieved by this method will, of course, depend

on the capacity of the receiving administration but should in any circumstances be a step in the right direction.

The project funds are deposited in a special account, which can only be operated by the project directorate. The deposits are made twice a year. The Swedish contribution is released when the Ethiopian share has been paid.

Sweden pays the full cost of the Swedish staff and also the cost of further investigations and scholarships, while Ethiopia pays for the land and defrays the salaries of the Ethiopian high- and middle-level personnel. Sweden pays 67 per cent of other investment and operating costs.

An independent firm is appointed by the two Governments to be responsible for the auditing.



28. The Chilalo district

2. The Chilalo Agricultural Development Unit (CADU) 1967—70

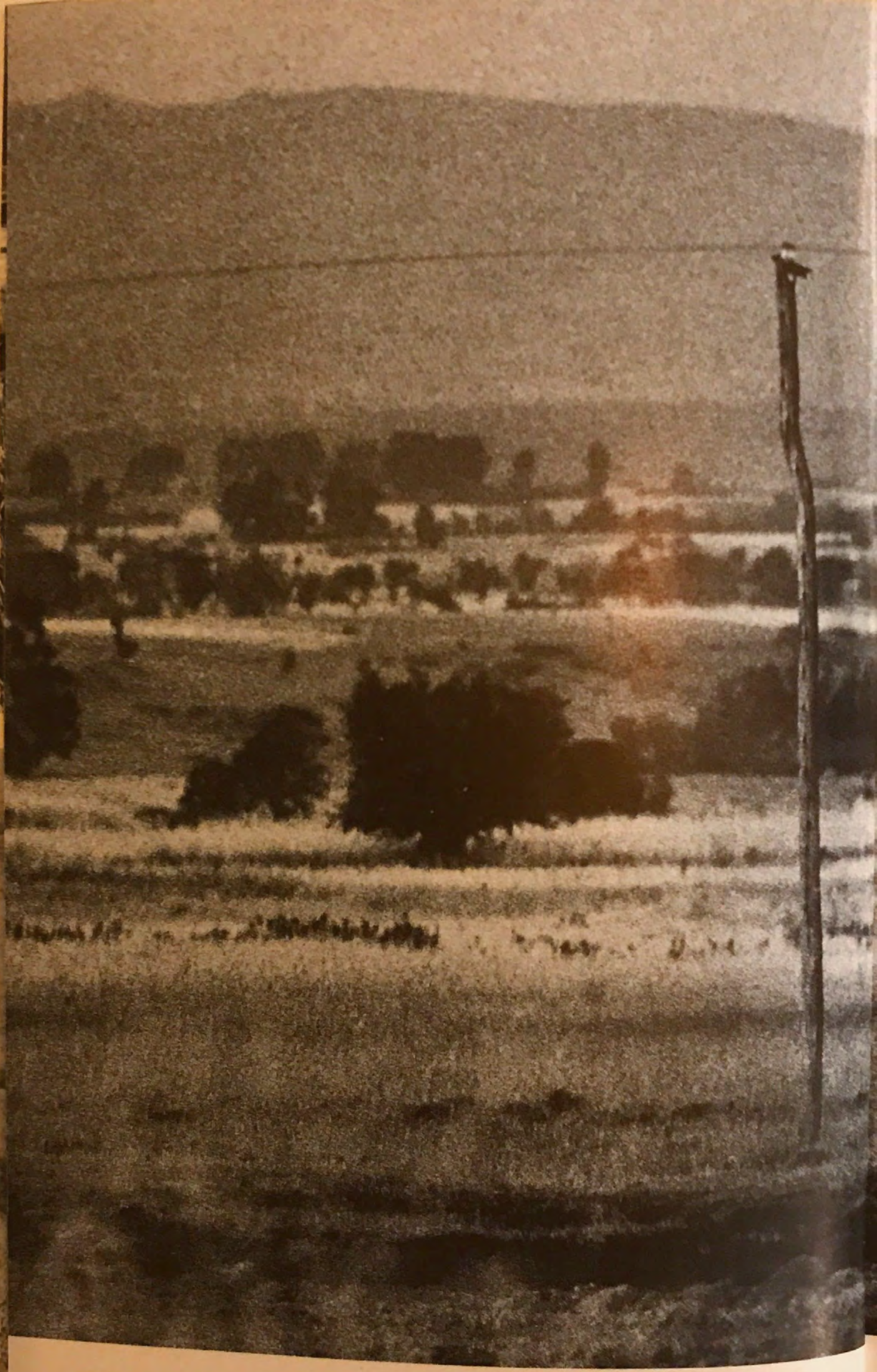
In this chapter there follows a description of the project activities and the results which have been achieved against the background of the established objectives. The organization is described and a summary of the benefits and costs is given. The Ethiopian undertakings in the form of supporting measures are described and finally the result of an impartial project evaluation is presented.

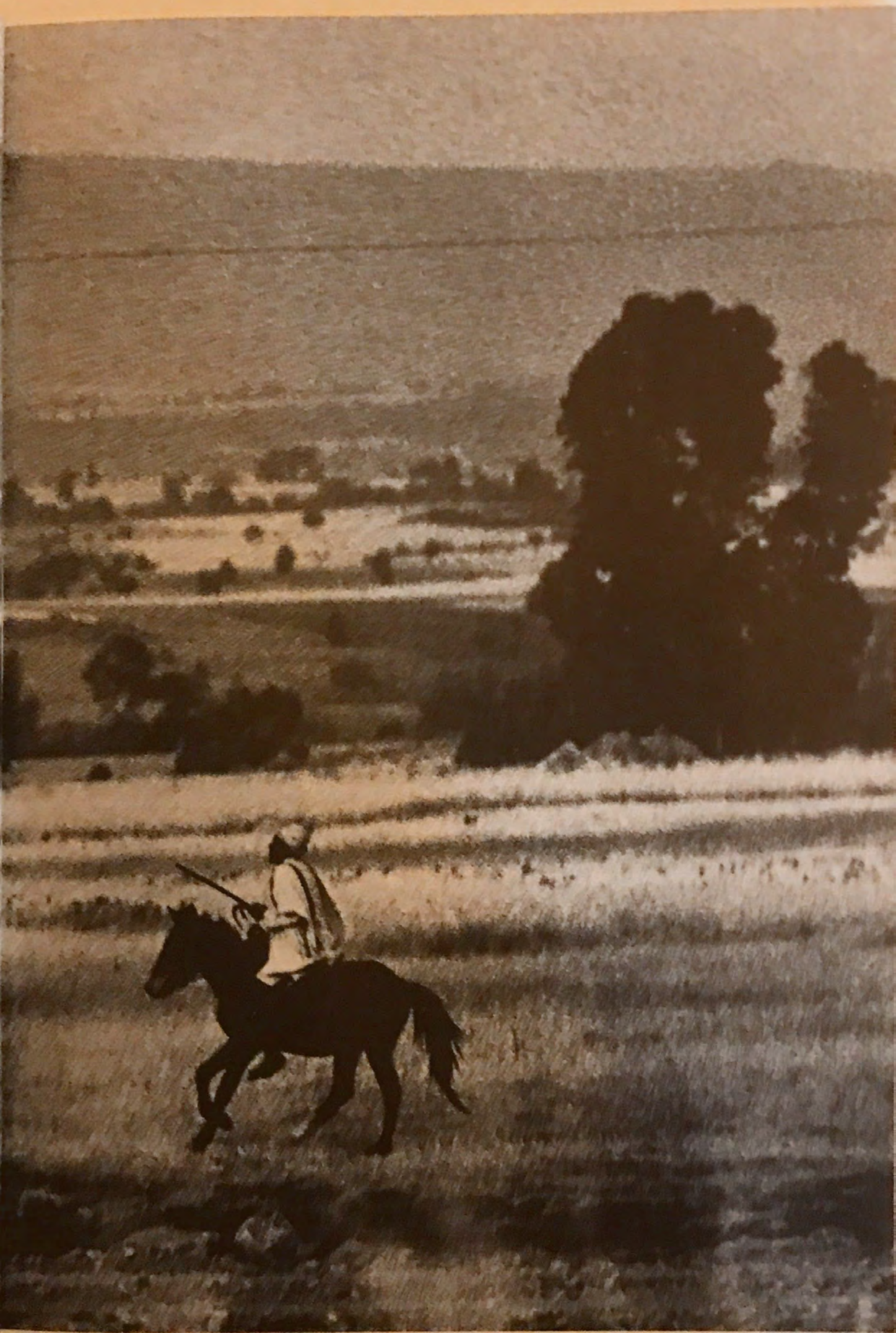
The Goals

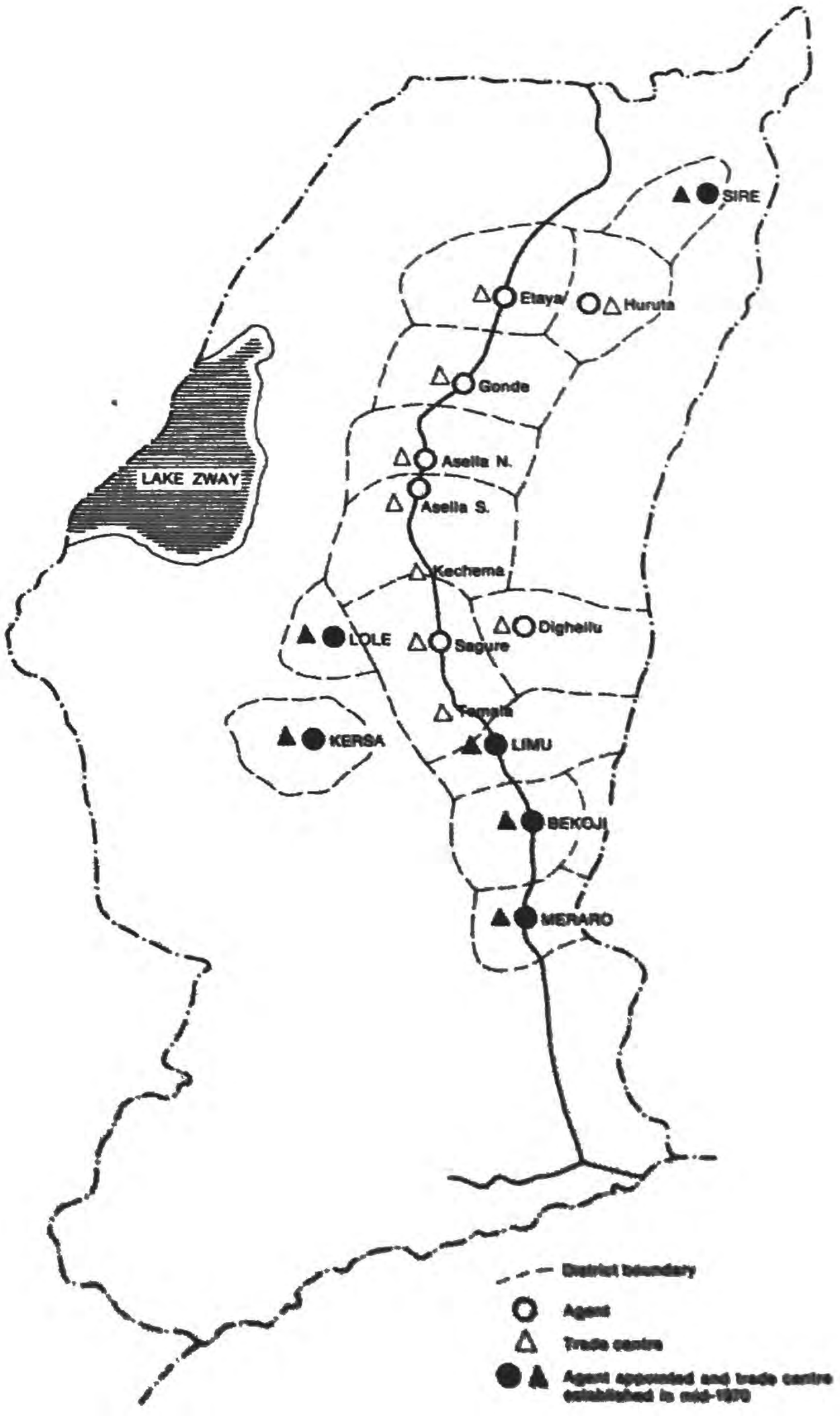
The main goals during the first agreement period can be summarized, without any order of priority, in the following four points.

1. To bring about economic and social development in the project area.
2. To give the local population an increased awareness of and responsibility for the development work.
3. To verify methods of agricultural development.
4. To train staff.

The economic objectives have only partly been quantified, but certain expectations were mentioned in connection with the detailed planning of the project (see the section on Costs and Benefits). The activities are to be directed mainly to the farmers in the lower income brackets. This fact is regarded as the essential social element in the objectives. The economic development is otherwise given priority at this stage, in order to increase the resources. The social development can to a certain extent be expected to follow automatically on the economic progress, but it may also be the subject of further activities in a later phase. Certain programs with respect to education and health were already incorporated during the first period (see below).







33. Trade centres and extension districts

The Project Area

The efforts during the first period were limited to the central part of the Chilalo district (picture 28), which has about 120,000 inhabitants and comprises about 2,500 square kilometres. The area north of Asella (pictures 29 and 30) is to a large extent continuously cultivated. In the southern part the main emphasis is on animal production and permanent pastures (pictures 31 and 32). The cultivation which takes place here is often not continuous in one place but is interrupted by a pasture period. Drainage difficulties are common in this area.

Activities

This section describes the activities through which it is hoped to achieve the main objectives (see the section on The Goals), the internal relations between the activities, the results and the problems experienced.

Economic and Social Development

Economic Incentives. A necessary precondition for an increase of the production is obviously that the produce can be sold at a fair price (as compared with the cost of production).

The project area is best suited for the growing of cereals and for milk production (southern part). Barley is mainly used for the farmer's own consumption, whereas most of the wheat is sold. There were no possibilities of selling milk at the outset of the project, except in the form of home-made ghee at a very low price. Wheat is bought by the traditional merchants. The farmers, who have no other outlets and lack information about the prices in the large consumption centres, are in the hands of these merchants. It has been shown that the merchants often cheat in the weighing by a matter of about 10—15 per cent. It was therefore decided to try to establish at least a competitive element in relation to the traditional wheat merchants, in order to assure the farmers of an attractive and fair

34–35. Milk collection

price. On the animal side, improved milk production seemed to offer the best possibilities, in view of the big demand and the favourable natural conditions. Milk collection was therefore organized. Both the grain trade and the milk collection are conducted from a number of trade centres, which cover the project area (picture 33).

1. Milk collection (pictures 34 and 35)

Milk is collected daily from six trade centres. Only the morning milk is accepted, after testing for sourness and possible foreign ingredients. The farmers are offered 25 cents per litre. The milk is transferred to Addis Ababa, where it is sold at 35 cents per litre. In 1967—8 4,400 litres were collected (one trade centre) and in 1968—9 146,000 litres (1—5 centres). The position during the last year is shown below (six centres).

1969	Litres	No. of milk suppliers	1970	Litres	No. of milk suppliers
July	41,341	521	January	8,098	125
August	38,170	445	February	8,918	127
September	26,311	421	March	22,631	318
October	28,281	408	April	34,973	433
November	18,743	298	May	38,517	455
December	11,960	187	June	33,183	472
			Total 1969—70	311,126	

As the table shows, the seasonal variation in the milk collection is enormous. This is partly due to the pasture situation and to the fact that the cattle are moved to the lowlands. It is now of great importance to introduce supplementary feeding during the dry season. The attempt to improve the capacity of the animals has not yet left the experimental stage (see below) and is not expected to influence the milk collection until 1972. Since the project requires a collection of at least 1,400 litres per day to cover its costs, the break-even point has only been

reached during the peak months. A geographical extension of the collection is now being planned.

2. Grain trade (picture 36)

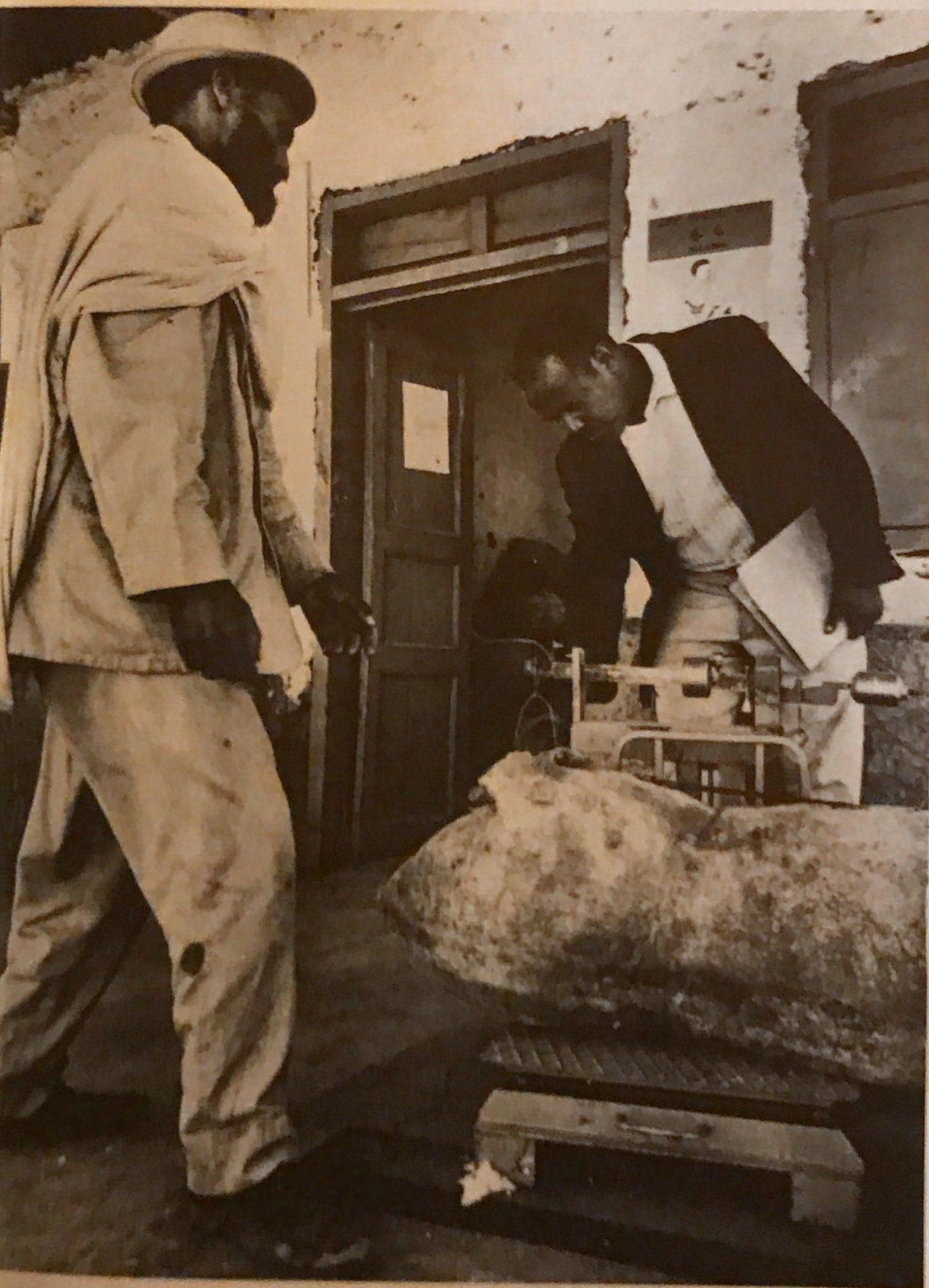
The achievements in wheat marketing are as follows (excluding seed):

	Tons	Average price, dollars per quintal	Average price in the open market, dollars per quintal
1967—8	24.5	18.94	—
1968—9	317	21.44	20.00
1969—70	631	23.90	23.22

The influence of the project is difficult to determine, since one of the objectives is to influence the market prices through the competition that CADU has introduced. The extent to which this has succeeded is not known. Full cost coverage under normal conditions has not yet been secured, since the mark-ups have been calculated on the basis of a volume of about 1,000 tons. Through speculative storage and the abnormally large price increases during 1970, however, a satisfactory result was obtained during that year.

The Extension Service and Its Targets. When it is possible to sell the produce at an attractive price, it is hoped that the farmers will be interested in increasing their production. However, the farmers hardly expect any innovations in the agricultural technique. Farming has been conducted in roughly the same manner for many generations. The farmer does not look for new means of production and he is furthermore handicapped by the fact that he cannot read. One has therefore to actively show him what possibilities can be offered, preferably on his own land and with his own help.

For this purpose CADU uses the "model farmer" approach. One assembles the farmers who live in an area of about 800



36. Grain is often delivered in hides

hectares administered by an elected leader and asks them to elect five candidates as "model farmers". From these five CADU selects one who can be regarded as a representative for the area. On his land demonstrations are given with the help of an agent (picture 37), who, when fully established, will be responsible for an area with 15—20 model farmers. The agent also arranges field days at the farm of the model farmer for the neighbours (usually about 100 families). In the neighbourhood of the market village where the agent is stationed, he has a larger demonstration field (picture 38). The market visitors are invited to visit this field on different occasions during the growing season. This activity also helps to give the agent practical experience.

	No. of agents	No. of model farmers
June 1968	6	42
June 1969	7	84
June 1970	10 (+11 assistants)	115

The demonstrations have so far been concentrated on crop production, while the activities with respect to tools and implements, animal production and forestry are still in an experimental stage. The main emphasis in the demonstrations has been placed on the introduction of higher-yielding wheat varieties and on the use of fertilizers. In addition, CADU has started to introduce hybrid maize and to show the advantage of row planting for beans and maize. Another important demonstration is concerned with improved weed control.

The demonstrations have yielded the following results:

	1968	1969
Local wheat variety, unfertilized, kilograms/hectare	1,140	1,190
Introduced wheat variety, fertilized, kilograms/hectare	1,770	2,290

37—38. Extension agent


CADU
EXTENSION OFFICE

On the basis of the demonstration results, the agents try to encourage the farmers to acquire the new means of production and assist them in the compilation of credit applications for this purpose. They obviously also instruct them in the use of the new supplies. In all, 850 farmers had in June 1969 decided to utilize better wheat varieties or fertilizer or both. In June 1970 the corresponding figure was 4,667. By objective crop-sampling, it was possible in 1969 to determine the effect of the innovations out in the farmers' fields.

	North of Asella, quintals per hectare	No. of observations	South of Asella, quintals per hectare	No. of observations
Local, unfertilized wheat	12.9	73	10.3	40
Introduced wheat variety with fertilization	20.9	17	17.8	28
Difference	8.0	—	7.5	—

The net return per hectare at prevailing prices amounted to about 125 dollars after deduction of the additional costs of fertilizer and seed. CADU is anxious not to contribute to a worsening of the income distribution. The extension service is therefore concentrated on the smaller farms. This does not prevent the larger farmers from taking part in the new development, if they get into touch with CADU on their own initiative. It is difficult to find means of reaching the tenants, who with the present design of the contract have little interest in introducing new technology. In spite of the fact that half of the farmers are tenants, only 15 per cent of those who during 1969 introduced better varieties and/or fertilization came from this group. During 1970 a new form of lease, which should give the tenants better security and force the landowner to contribute to the costs of the new supplies, was therefore promoted. In order to get credit from CADU, a landowner must sign such improved leases with all his tenants. In view of the considerable yield increase that has resulted from the

introduction of better varieties and fertilization, one can show that a transfer to this lease agreement is to the advantage of both parties. The new form was also given a fairly good reception and no less than 1,293 new leases were signed. Together with the 532 already acceptable lease agreements, this implies that no less than 39 per cent of the farmers who accepted new techniques in 1970 came from the tenant category.

The new model lease is derived from draft legislation which has now been submitted to the Parliament (see the section on Supporting Measures), and the promulgation of this law should further increase the tenants' possibilities of benefiting from the development work. In particular, the law will help to secure adherence to the regulations. Though it would be possible to achieve considerable economic development with the 80 per cent of the acreage which is utilized by the landowners, it is hoped, through the actions described above and through the legislation being promulgated, to avoid leaving half of the population behind in the process.

The promotion of new techniques, however, will make it more attractive for the landowners to put more of their land under cultivation and to evict the tenants. This has also happened to a certain extent in the project area. The tenants are then converted into farm labourers or are forced to seek a new lease in some other area, which may be difficult if this tendency increases. Unless one is prepared to stop the economic development, to confiscate large farms or to restrict the owner's right to farm his own land—measures which are all politically impossible—one has small chances of preventing the eviction of tenants. Effective taxation and import restrictions on tractors might make large-scale farming less attractive, and these measures are being discussed. CADU has also started to investigate the possibilities of utilizing government land for the settlement of families who have been evicted. Other employment opportunities should also be noted and utilized in this connection.

Sale of Inputs. The demonstration of new means of production

is meaningless unless the supplies in question are accessible to the farmers. The trade centres (picture 33), which are described in the section on Economic Incentives, are therefore utilized also for the sale of seed (picture 39) and fertilizers. At a later stage, of course, also other supplies and services will be available. The following quantities have been sold to the farmers:

	Seed (tons)		Fertilizer (tons) (mainly diammonium phosphate 18 % N, 46 % P_2O_5)
	Improved wheat varieties	Hybrid maize	
1968	141	—	4
1969	639	—	350
1970	824	3.5	1,650

Since fertilizer must be imported and ordered a long time in advance, this implies considerable forecasting problems. During 1969 the demand for fertilizer was overestimated, which meant that also large farmers had to be encouraged to buy from stock on credit. Nevertheless about 150 tons remained unsold. For 1970 the demand was estimated on the basis of a survey of 600 farmers, who were asked about their plans. The study indicated a demand of about 4,500 tons. As experience had shown that a considerable number of the farmers do not realize their plans, the quantity was lowered to 1,650 tons. In spite of firm rationing in favour of the smaller farmers, this quantity proved to be insufficient.

The supply of seed has so far been limited by the multiplication process. Both in 1969 and in 1970 larger quantities could have been sold.

Credit (picture 40). In view of the lack of cash and in the absence of loan facilities at a reasonable rate of interest (the local rate is about 100 per cent), it is impossible to sell

39. Se


CADU-SEED

the new supplies unless credit is offered. Since there is no proper land register and since a large part of the credit must be directed to the tenants, one cannot ask for traditional security in real estate. It is thus of the utmost importance to ensure that the borrower will be in a better financial position when the repayments are to be made.

CADU has therefore designed a system by which the farmer, with the assistance of the agent, hands in a loan application, which is supported by a simple farm plan and which accepts the need of the recommended new means of production. If the application is approved, the farmer obtains the requested supplies against a certain cash payment. For the rest of the cost he signs a loan agreement for nine months, i.e. until the harvest is completed.

In the future, longer-term loans will be available for durable investments. The borrower is obliged to sell his wheat through CADU, which is thereby enabled to deduct the repayment.

If repayment is not forthcoming, the farmer is excluded from obtaining loans in the future. Interest at 12 per cent is charged. In order to finance its credit activities, CADU has taken up a loan in the Development Bank and pays 8 per cent interest. The credit activities have reached the following magnitudes:

	No. of borrowers	Credit amount, Ethiopian dollars	Repayment as a percentage	
			of the number of borrowers	of the credit+ interest
1968—69	188	14,544	99.5	97.4
1969—70	919	151,941	85.4	83.7
1970—71	4,667	489,903	—	—

The grain trade, the milk collection and the sale of supplies are open to all farmers, in order to increase the volume and thereby lower the cost per unit. The credit activities and the extension service, however, are reserved for small farmers

40. Agent assisting with loan application

41. Soil analysis

42. Experimental field. (Photo, H. Linder.)

(owners with less than 25 hectares, tenants with less than 40 hectares). The larger farmers normally have access to other loan facilities. During 1969—70 an exception was made, however, in order to sell a considerable stock of fertilizer. Since the larger farmers were later excluded from receiving further credits, their rate of repayment has been bad and has influenced the figures above. About 20 court cases will therefore probably be necessary. The repayment figures are expected to reach about 95 per cent within one year from the due date as a result of the present efforts to extract repayments.

Experimentation. The purpose of the experimentation activities is to obtain a continuous flow of well-tested methods and means as a basis for the extension work. In the first place, the intention is to take results from existing research institutions in Ethiopia and to test them in the environment in which CADU is working. Research results from other parts of the world, which may conceivably be of interest for the Chilalo area, have also been tested. For instance, rewarding collaboration has been initiated with agricultural research establishments in Kenya. CADU must furthermore attack problems of great importance for the Chilalo area which have not been paid any great attention at other places.

In spite of a considerable improvement during the last few years, the experimental work carried out in Ethiopia has so far little to show. CADU has therefore been forced to organize comprehensive activity and also participates actively in the national research cooperation. The experimental sections are expected to present each year a summary of the innovations that are to be disseminated among the farmers and also participate in the training of the extension agents in the application of this new technique.

1. Crop production (pictures 41 and 42)

On the basis of surveys of meteorological conditions, soils and present cultivation methods, the crop-production experiments are expected to determine the crops that can profitably be

cultivated, the varieties that should be used and the optimal growing conditions with respect to planting time, seed rate, fertilization and drainage in the different parts of the project area. Protection against weeds, diseases and insects is another essential field of work. Among the new crops which have been found promising, maize and certain oil crops, for example, rape, seem to be the most interesting. Extensive testing of new varieties of wheat and barley has been conducted, and particularly the new wheat varieties from Mexico have shown very promising results. Fertilization, particularly with phosphorus, has produced considerable increases in yields. Weeding by hand and by chemical means has also brought about a considerable increase of production.

In view of the activities on the animal side, a great number of fodder crops and methods of improving the pasture situation have also been tested. Particularly fodder-beets can be expected to show good results.

2. Implements

With a few exceptions, it is not profitable at this stage to introduce the tractor. The wages are too low (1 to 1.25 Ethiopian dollars per day). Higher yields, extensive utilization and thereby lower cost per hour, more rapidly executed work and more pleasant working conditions might justify the mechanization of the largest units. For the majority of the farmers, however, the size of the farm, the resources available and the lack of alternative employment opportunities prevent mechanization. From the national point of view, it is uneconomic to substitute foreign exchange in the form of imported tractors for plentiful labour, while creating social problems, as regards the employment of the labour force that is evicted.

The joint use of machinery might make mechanization more attractive also for the smaller farms. The problems with regard to the maintenance of the machines and the short period of

43. Broadcasting seed and fertilizer
44. Making a wheel-barrow
45. Covering the seed

utilization set technical limits to these possibilities. In situations in which the work is better executed and/or in which the labour force has an increased marginal value through the intensification of the cultivation or in some other way, such a service might be profitable. It is, however, mainly the medium-sized units which can utilize the services, since the costs for the smaller farms would be too high.

In connection with its own mechanized seed production, CADU has also offered its services to neighbouring farms, both in order to utilize the machines better and in order to investigate the possibilities of the joint use of machinery. The demand from the medium-sized farms has been very great, particularly with respect to ploughing and threshing. On account of its increased seed production, CADU has now ceased to offer services of this nature.

Since these services are mainly extended to the bigger units and the risk of eviction of tenants is great, it is hardly in line with CADU's objectives or with the overall economic goals of Ethiopian society to increase the machinery service. Certain special tasks, like weed control and drainage, which are aimed at increased production rather than the substitution of labour, may, however, become of interest in the future.

The main emphasis must, however, be placed on the development of the present ox-powered implements and the tools (pictures 43—45). It would probably not be necessary to introduce the horse, since experience shows that it is possible to go directly from ox-power to tractor-power when development has reached a sufficiently advanced stage.

The guiding principle in the improvement of the present implements has been that the local artisans shall be able to manufacture or at least maintain the new products. Even though one is prepared to give these artisans certain supplementary training (some courses have already been conducted) and credit to procure some simple tools, it is still necessary to have very simple and sturdy designs. Since the resources of the small farms are so meagre, it is also necessary to develop tools that are cheap.

Three main fields of work are at present being emphasised.

(*a*) *Soil preparation.* The possibilities of improving the present plough are being investigated. A harrow for the preparation of the seed bed and for covering the seed has now been constructed and was tested on a large number of farms during the growing season of 1970. This should be one of the most important measures in the field of soil preparation, since the present technique—covering with a plough—means that the seed is being set too deeply and thereby emerges badly. A simple bag for broadcasting seed and fertilizer and a hand hoe have also been designed.

(*b*) *Harvest, threshing, cleaning and storing.* The harvest is at present being reaped with the sickle. The scythe has been tested, but it produces a longer straw, which in turn means threshing difficulties. It is furthermore comparatively difficult to handle and to maintain. Various simple threshers from different parts of the world have been tested but without finding any that is worth further investigation. Certain expectations are, however, attached to a newly acquired Indian thresher. Improved cleaning is of great importance, particularly as regards removing the weed seeds from the seed produced on the farm. Present storing techniques lead to comparatively small losses on the plateau. A simple improvement, which gives protection against rodents and which makes it possible to store greater quantities, has been elaborated. Protection against insects in the lowlands is being tested.

(*c*) *Transport.* In connection with the increased market dependence and the large quantities of produce involved, an improvement of the present mule transport becomes necessary. Both a wheel-barrow and an ox-drawn cart are at present being tested with a number of farmers and have proved to be very popular.

3. Livestock

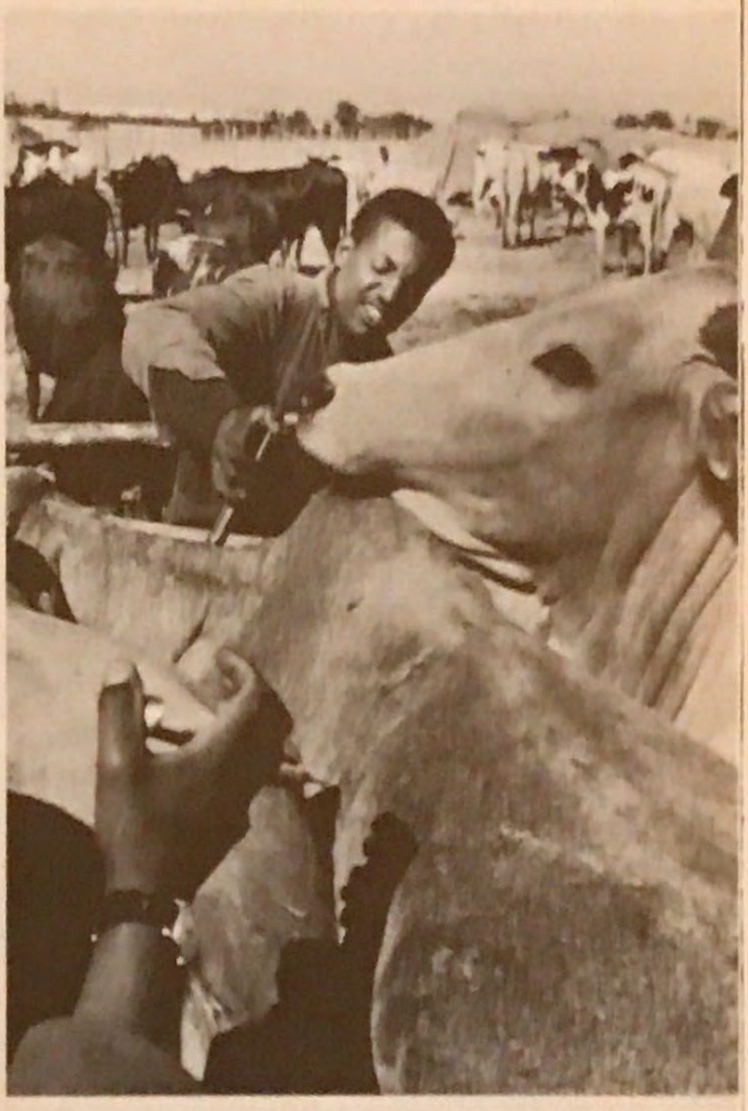
The experimentation on the animal side has concentrated on the development of milk production. In view of the extremely low lactation of the indigenous cattle and since it has proved unprofitable to improve the feeding of these cattle (with the

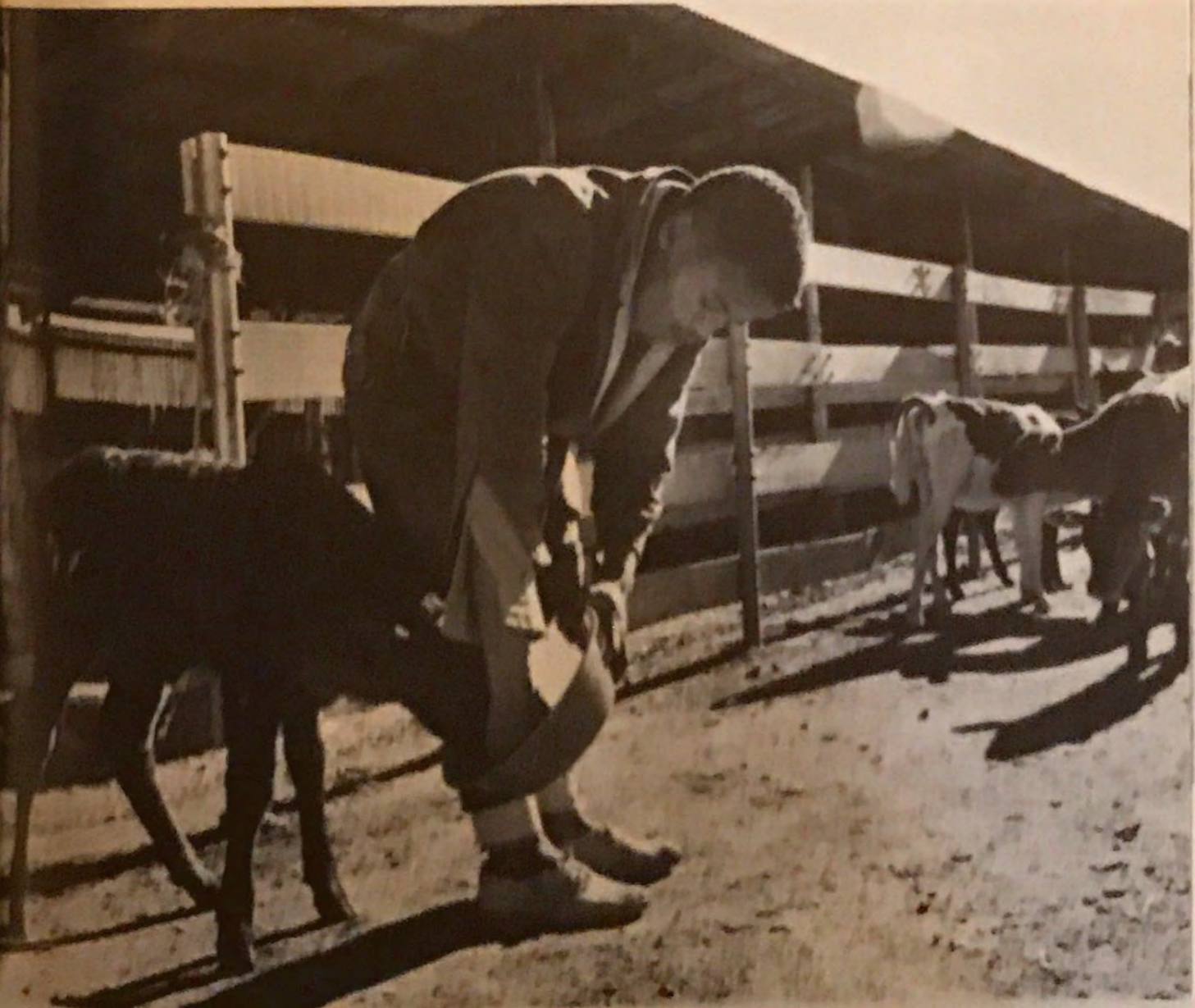
exception of concentrates as a replacement for pasture during the dry season), it has become necessary to emphasize the cross-breeding with higher-yielding breeds. Already in the first generation one gets an annual production of about 1,500 litres (compared with the present yield of 200 litres). The cross-bred cattle require, however, completely different feeding and care. It has therefore been decided to introduce these cattle in the following manner.

CADU produces cross-bred cows, which are demonstrated to the farmers. Courses in the management of the cattle are given. Thereafter CADU leases one or two cows to interested farmers. If they prove to be able to follow the instructions, artificial insemination is started on the indigenous cattle on the farm. If the farmer is not able to master the problems, the cross-bred animal is returned to CADU and placed with another farmer.

The experimentation is therefore mainly concerned with trying to determine suitable feeding of the cross-bred cattle and the lactating cows and methods for their management and housing. Since the local cows, which are to be subject to artificial insemination, often show insufficient heat, it is also of importance to improve their nutritional status. An important factor at a later stage will be to try to determine a suitable cross-breeding level. Are we to stop at 50 per cent exotic blood or are we to continue the genetic improvement with the lactation possibilities that this implies but also with the increased disease risks? In order to discover the problems that the farmers will face in connection with the acceptance of cross-bred cattle and in order to find optimal solutions for these problems, we are carefully following about 10 farmers who have received such cattle (picture 48). Since it takes a long time (at least 36 months) to produce cross-bred cattle, the distribution will not be on any great scale until the budget year 1971—2. The farmers' interest is, however, already encouragingly great.

46. Cross-bred cow at model farm
47. Vaccination against rinderpest
48. Feeding cross-bred calves





Simultaneously with the above-mentioned activities, it will be necessary to get the disease situation under control. CADU has therefore assumed responsibility for the veterinary activities within the project area. The main emphasis is at present being placed on preventive measures (picture 47) against the most common diseases. During 1969—70 the following number of vaccinations were conducted:

Rinderpest	83,633
Anthrax	7,023
Contagious pleuropneumonia	6,802
Other diseases	1,554
Total	99,012

The veterinary section is also responsible for the curative care of the cattle owned by the project, for artificial insemination and for milk hygiene. A careful survey of the cattle diseases is planned. Simultaneously with the increase in the number of cross-bred cattle, it is necessary also to develop the curative care. Foot-and-mouth disease, parasites and brucellosis seem to involve the biggest problems, alongside the above-mentioned diseases.

4. Forestry

Though soil erosion is not very common, it still occurs on steep slopes and in the ravines created by the rivers (picture 49). Since the manure is often used as firewood (picture 50), there is also a risk of depletion of the soil. By planting trees on the slopes, one can both protect them against erosion and give the farmer a supply of firewood and timber for construction.

At the end of the rainy season a very strong, dry and cool wind blows, which makes the grain shrivel. It is thus also of great importance to test the wind protection arrangements. CADU is therefore conducting experimental activity to determine suitable species at different altitudes above sea level and

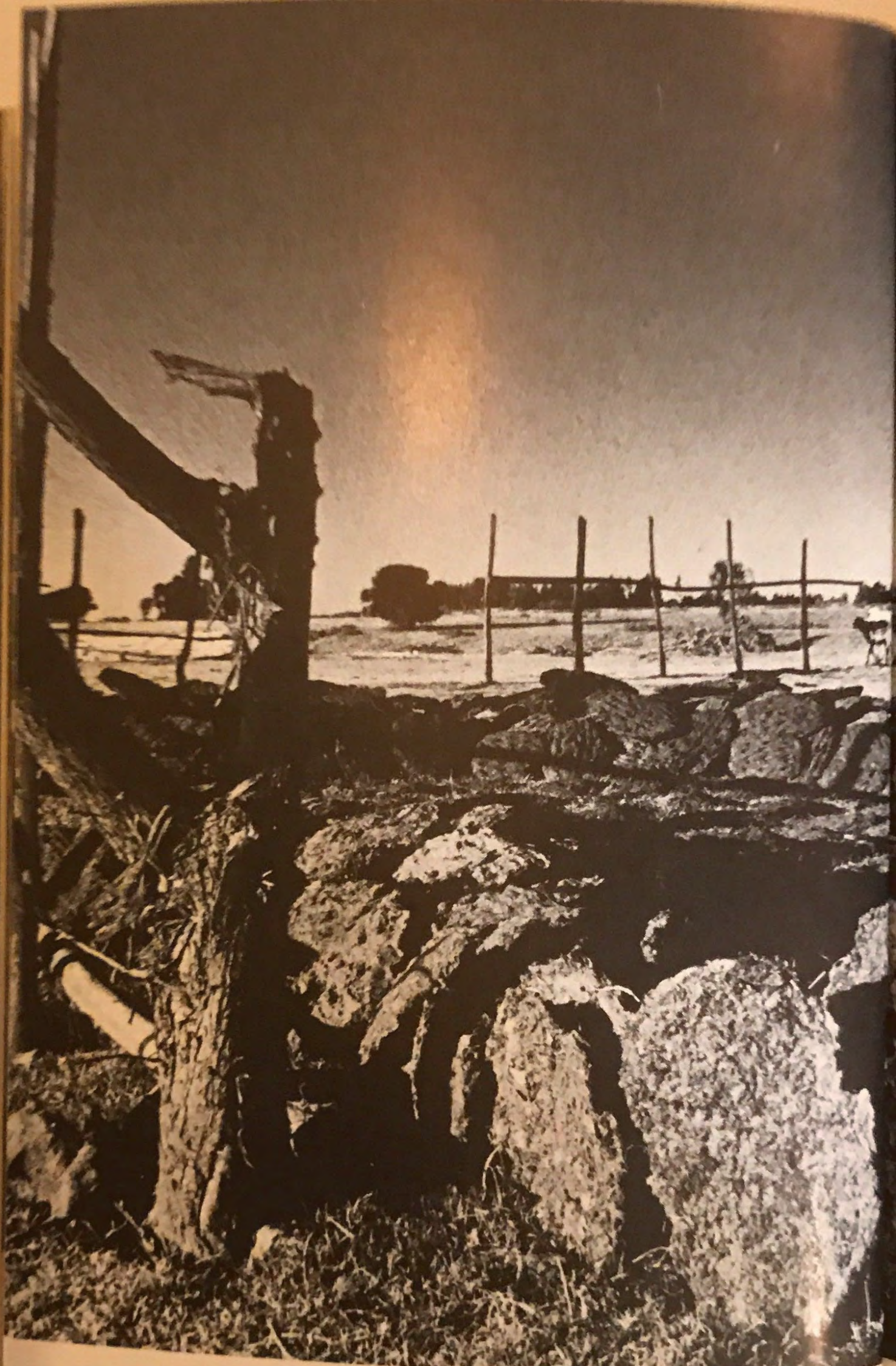
49. Erosion in the ravines

suitable planting and nursery methods. A nursery is operated by the project and a large number of trial plantations have been started.

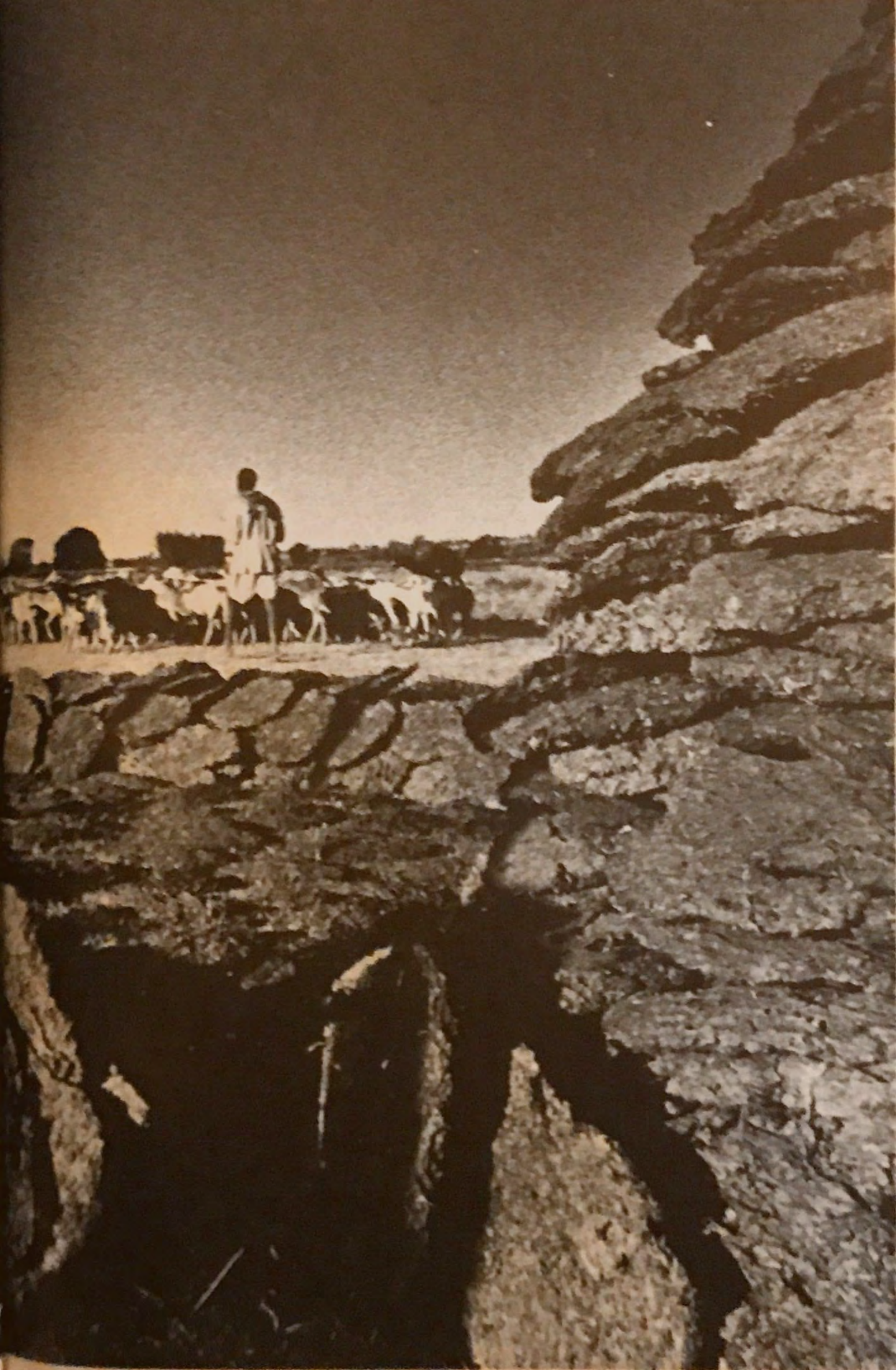
In the lowlands the acacia trees are rapidly being cut down, partly to make room for increased cultivation and partly also for the production of charcoal. This has led to considerable wind erosion. By developing certain possibilities of making cheaper charcoal from eucalyptus, the project hopes to be able to help to diminish the cutting of timber in the lowlands.

Production of Inputs. At present certain means of production cannot be bought but have to be produced by the project. This particularly refers to the seed of the new wheat varieties and the cross-bred cattle.

For the production of cross-bred cattle (picture 51) and for trials in the field of animal production, CADU was given at the beginning an area of 250 hectares on the southern outskirts of Asella. The number of cross-bred cattle needed soon proved to be much larger than could be produced on this



50. Manure is used as firewood



farm, and by a modification of the Government agreement CADU was given the opportunity to operate two further farms, Gobe and Asasa, of 2,800 and 2,500 hectares respectively (picture 28). Gobe is used for the production of cross-bred cattle, while Asasa will be divided in order to give some 250—300 tenants from Gobe their own farms. The remaining part of Asasa (about 600 hectares) will be used for seed production. At Gobe and at Asella there were in June 1970 the following numbers of animals:

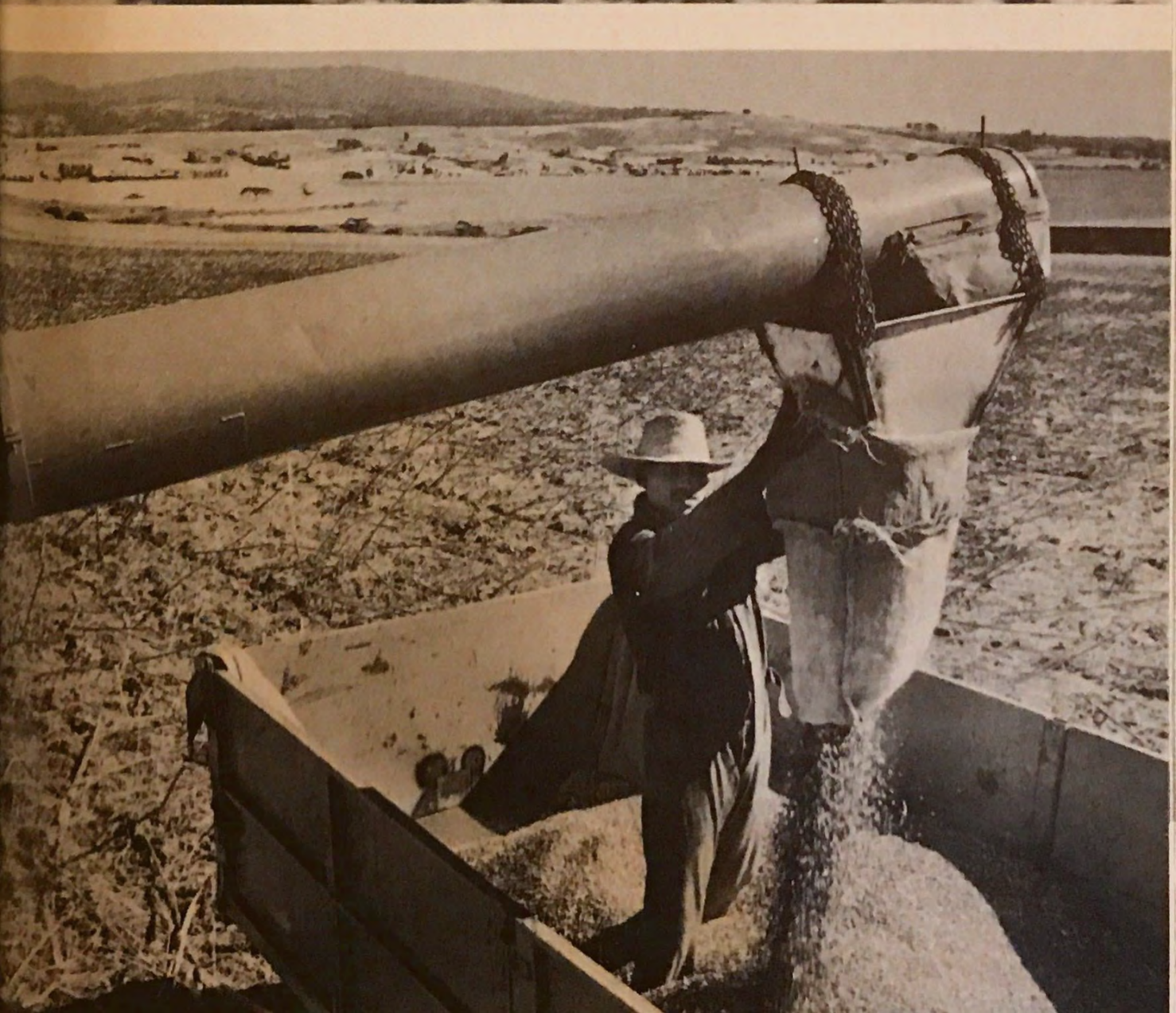
	Asella	Gobe
Local cows and heifers	215	1 017
Cows and heifers in calf after insemination by high-yielding bulls	49	201
Cross-bred cows and heifers	46	—
Cross-bred bulls	9	—
Cross-bred calves, male	48	104
Cross-bred calves, female	51	80

The first stages of the multiplication of the new wheat varieties take place on the Kulumsa farm (pictures 28 and 52), which has 425 hectares of cultivated land. This farm is situated 10 kilometres north of Asella and is also used for the experimental activities in the field of crop production and implements. For the final stage of the multiplication, private contract growers have so far been used. In 1969 the following quantities were produced:

Kulumsa	420 tons
Contract growers	652 tons

For the contract growings, larger mechanized units must be utilized. However, these farmers have not taken care of the growing particularly well. This fact, together with the rapidly increasing demand, has led to the expansion of the project's own seed production with the 600 hectares at Asasa.

51. Inseminated local cows
52. Seed being harvested



The second main goal of CADU's activities was to try to make the population assume increased responsibility for the development work. In other words, the intention is to promote the community-development principle of helping people to help themselves.

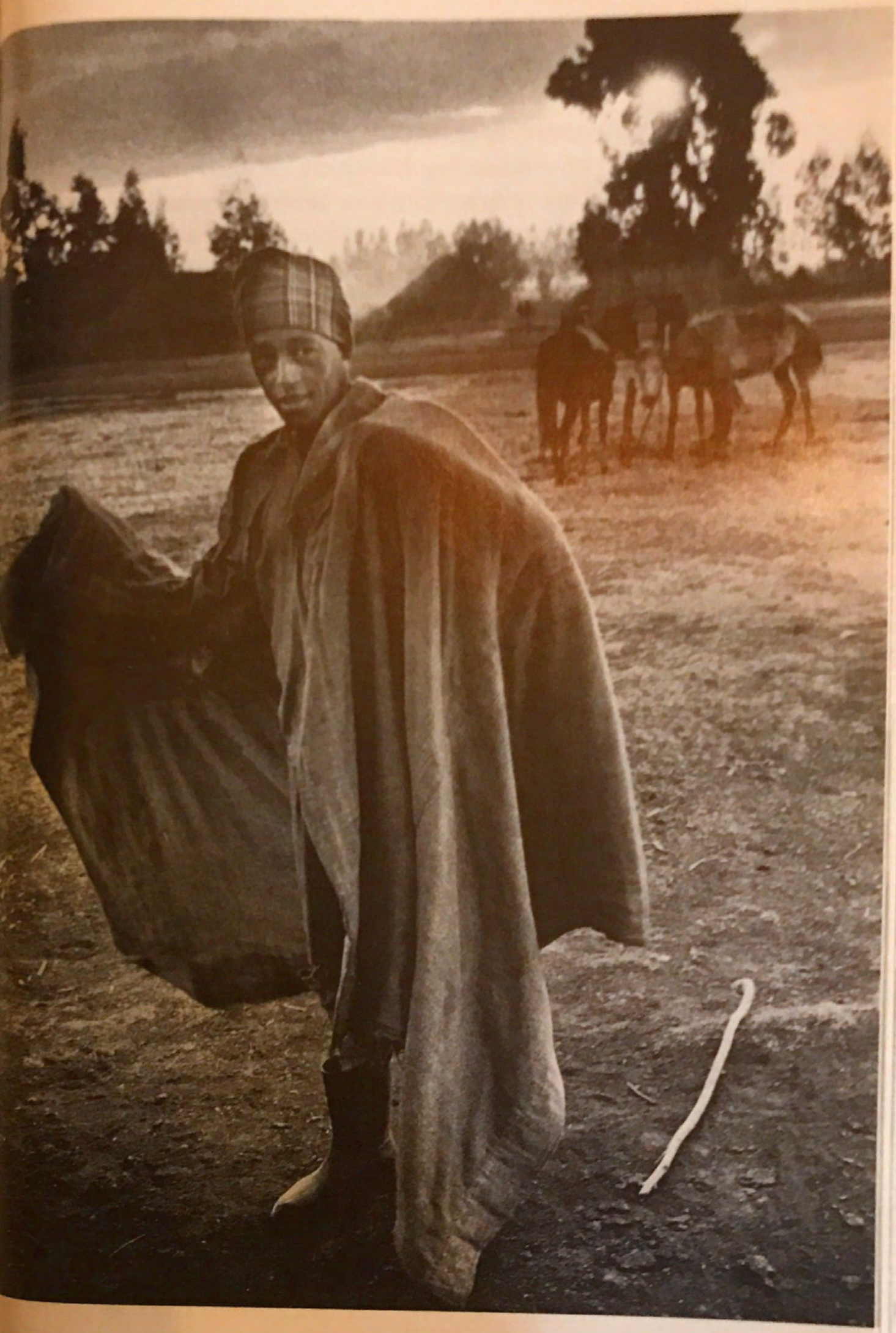
The point of departure for all development work must, of course, be the assumption that the population *wishes* to improve its own position and/or the society it lives in, in other words, that it has unsatisfied needs. The inhabitants of the Chilalo district have clearly shown that they have such a wish.

CADU's help means mainly that possibilities of increasing the resources are made available. If it is desired to avoid stagnation, inefficiency and corruption, it is, however, necessary to stimulate self-help, both in connection with the production process and with respect to the utilization of the new resources and an active participation in political questions. This important development has so far not advanced particularly far.

In order to encourage the farmers to assume increasing responsibilities, one has to gain the confidence of the people, and that is best accomplished by showing the intentions behind the project in the daily activities. It is just as important to be able to show the contents and advantages of cooperation as to demonstrate the possibilities of improved crop yields. Not until the farmer realizes the need of new means of production and the possibilities of improved marketing is the time ripe for cooperative development. To discuss the emphasis of the development work before the farmer has realized the possibilities of development is equally meaningless.

The project has now reached a stage at which the need and the possibilities of self-help have been demonstrated, and during the next agreement period this part of CADU's activities must enter into a very active phase. The activities so far are described below.

53. A model farmer



Experimentation and extension service in almost all [illegible] have been made the responsibility of society, since [illegible] largest farms are too small to tackle such tasks. The farmers have, however, often taken active interest in the planning of these activities. The beginning of such a development has also been started in the Chilalo district with the elected model farmers (picture 53).

The responsibility for marketing produce, the sale of inputs and the granting of credit, however, is generally given to private enterprises. In the Scandinavian countries we have had very positive experience of solving these problems through cooperation between the farmers. Many developing countries have also tried actively to promote such solutions, but have often met with considerable difficulties. CADU's intention is nevertheless to try to convert its present sale, purchase and credit activities into a cooperative form. Since, firstly, no cooperative experience is available and, secondly, the difficulties in other places have been shown to be formidable and, finally, the majority of the inhabitants of the project area are illiterate, there is good reason to approach this problem with the utmost care. We are therefore working according to the following plan.

The suppliers or the customers at a certain trade centre are assembled on a number of occasions and are given information about cooperative ideas, illustrated by the CADU activities. They then elect certain trustees, who are given a further insight into cooperation and the daily management of a primary society. They are then asked to participate in all the CADU decisions with respect to their own trade centre. When the time is ripe, they take over the responsibility and a primary society is officially registered. CADU then remains in an advisory position.

In a later phase the farmers are also expected to handle the society's functions. During the past year this system has been tried at two places and has now reached the stage at which the elected trustees participate in the CADU decisions. It is very important to start primary societies that function well, not least so that they can take the responsibility for granting

credit to the farmers. The present system of individual loan applications becomes unmanageable when the size of the operation increases.

A special program is directed to the women (picture 55). The intention is to try to train instructors (compare the model farmers) who will be able to act as models and assistants to the women in the neighbourhood. The program includes a summary of the extension work, which is directed to the men but with an emphasis on the aspects of the agricultural production which are normally handled by women. The possibilities of utilizing the higher income for better food, clothes and living conditions are given particular attention.

The project management also intends to promote an improved water supply system (see below) and to work for an extension of the educational system. These improvements are expected to be realized by contributions from the inhabitants. A separate adult-literacy project, which is supported by UNESCO, has taken Chilalo as one of its main regions. CADU contributes material for the reading exercises, in order to make the teaching more functional.

Besides trying to transfer more of the responsibility for the production increase, the marketing and the resource utilization to the farmers, CADU also hopes to be able to encourage an interest in the general development effort. The first step in this direction is to try to enlist the participation of the local population in the planning of the project program. A first attempt, with a development committee for the whole of the Chilalo district, consisting of representatives of both farmers and the local administration, failed. Nowadays we assemble the model farmers and the elected trustees (*golmasas*) in each extension district in a committee, in which we have so far informed them about the CADU goals and the successes and difficulties of the programme and discussed the design of the credit activities and the necessity of enlisting the tenants through the new lease agreements. Our experiences have been positive.

Collaboration with the local administration (picture 54) has not proceeded without friction. On account of its bureaucratic,

54. Governor of a sub-district

authoritarian structure and sometimes corrupt character, the local administration is often mistrusted by the farmers, and close collaboration would have implied certain risks to the project. Attempts to inform the local administration about the activities of the project and to interest them in it have met with a rather cool reception. Thanks to the intervention, of the Governor-General, the administration has given its support in the cases in which CADU has requested such support. A more positive spirit in the collaboration would, however, be of great value for further progress. A more development-oriented and unselfish spirit must thus be promoted. The new District Governor for Chilalo also works energetically in this direction. Draft legislation on local self-administration, which will be of great importance in this connection, is at present before the Parliament.

In order to prepare for the last-mentioned reform, to promote interest in social questions and to prevent officials and landowners from utilizing their positions for private purposes, CADU is trying to inform the people about both the existing laws and new laws. It has a special section for this purpose, for disseminating information about the project, preparing campaigns of different kinds and producing information material.

Development Methods

Since CADU is the first project of its kind, it is, of course, important to collect and record our experiences, in order to make them available for future activities. Before the start of the project, attempts were made to assemble both Ethiopian and international experience, in order to find as good a point of departure as possible. The initial hypotheses must, however, be tested. As the development progresses, it will probably also be necessary to adapt the methodology. For this purpose CADU carries on its own evaluation and publication activities (picture 56).

The evaluation work is undertaken on three levels. The first purpose is to collect data which illustrate the benefits and costs of the project. Here it is possible during the introductory stage to use simple benefit calculations compiled from the sale of inputs and yield estimation (picture 57). When the inputs become available through the production of the farmers themselves (for example, seed) or through other channels, it will be necessary to try to measure the income changes directly.

The essential project activities, such as the extension and credit programs and the sales and purchase activities etc., must be analysed carefully, in order to be able to determine how they should be conducted in an optimal manner. A number of previous measurements were therefore made and follow-up measurements have now been started.

The third level comprises an efficiency check of all the activities.

Training

The purpose of this activity is to ensure that Ethiopian personnel become available. It is, of course, important to replace the expensive expatriate staff as soon as possible. At a later stage it is hoped to be able to use Ethiopian staff for newly started projects. This is judged to be very essential by the Ethiopian Planning Commission and the Ministry of Agriculture.

With an obvious risk of generalization, one could say that the staff has proved to have acceptable theoretical knowledge but often lacked practical experience. The main educational activity is thus on-the-job training, which has very often also proved to yield good results. In addition, it has been necessary to train staff of categories which are at present not being trained in Ethiopia, particularly agents for the extension service and also foremen for the trade centres of the project. Agents are being trained elsewhere, but the teaching has been too theoretical and comprehensive for the needs of CADU and therefore these agents are both expensive and unsuitable for living and working out in the remote rural areas. The project has instead started a nine-month agricultural course (pictures

56. CADU publications

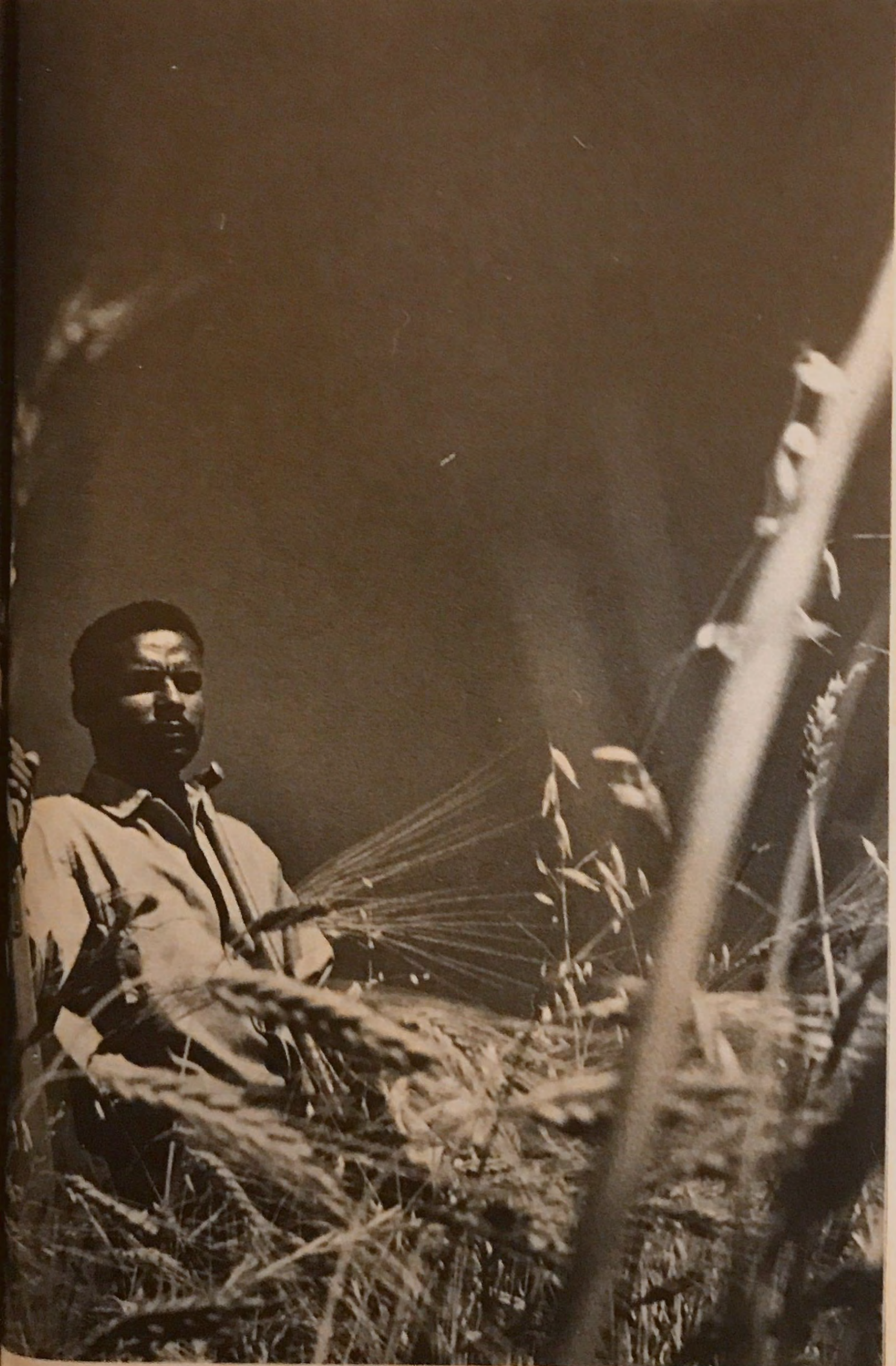
58 and 59) for students with 9—10 years of basic education. The training contains a practical element (half the time), in which the students manage a 20-hectare farm in the vicinity of the school. Twelve agents have so far been trained. At the same school there is also a 2-month course for trade-centre foremen. In the near future we shall also start the training of instructors for the womens' program. Shorter courses are given for established agents and trade centre foremen.

The project has not yet achieved such a degree of stability that we can provide staff for other projects. Certain courses for staff from such projects are, however, being planned.

Further Studies

Within the framework of the government agreement, it is possible to undertake studies aimed at broadening or intensifying the project activities.

57. Crop-sampling



From the beginning, studies on health, water development and the utilization of the Munessa Forest (one of the few remaining natural forests) were included in the agreement.

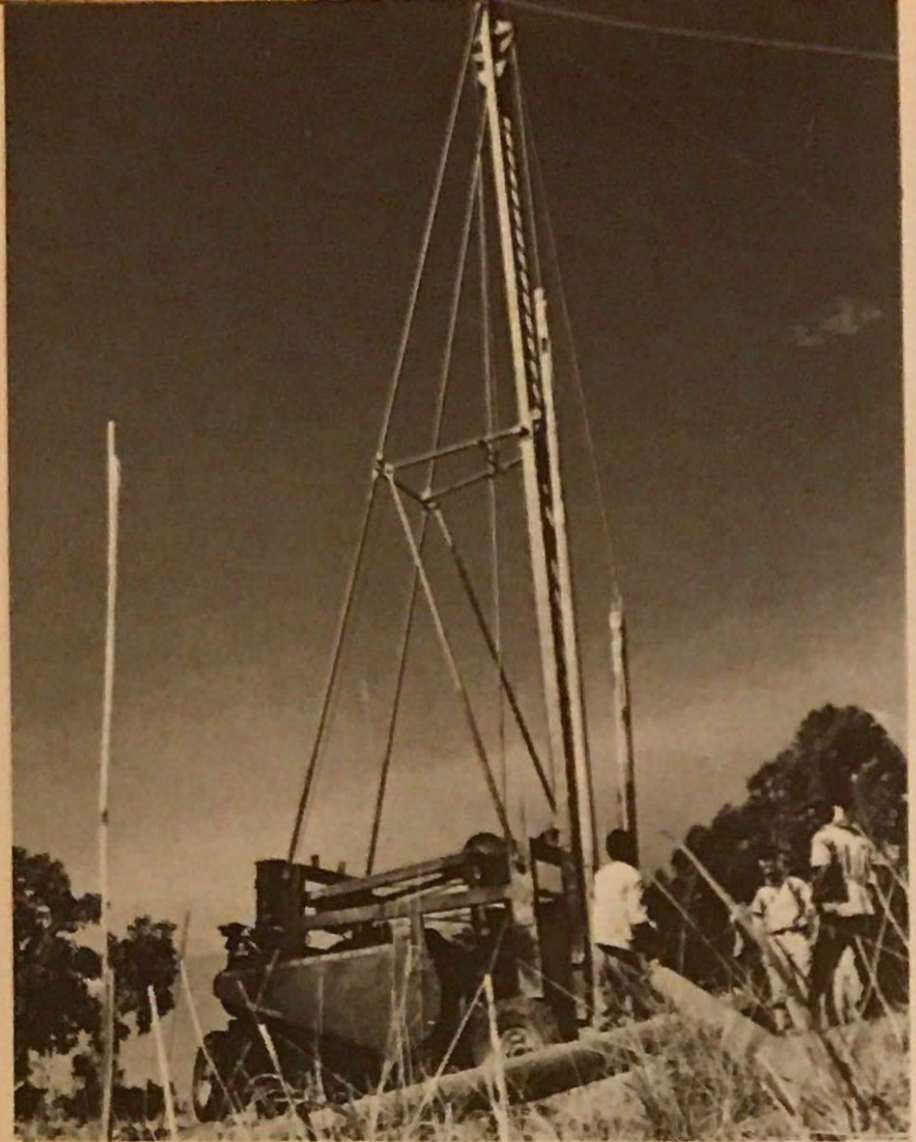
The purpose of the health activities of the project (picture 61) was to establish to what extent the health and nutritional situation was limiting the economic growth and, if this was the case, how the situation could be corrected. In addition, it was desired to get an idea of the population growth and the possibility of experimenting with family-planning. Close collaboration with the Ethiopian Nutrition Institute was started. On the basis of the experience gained, it is suggested that the provincial health service should be strengthened, in order to make it possible to utilize the existing facilities better, and that further emphasis should be placed on the mother and child care (including nutritional teaching and family planning).

An improvement of the water resources for both the people and the cattle is probably high on the inhabitants' own priority list. The water-resources situation is, of course, also of crucial importance for the improvement of the health of both the people and the livestock. With respect to the livestock, good access to water is one of the basic preconditions for increased milk production. A comprehensive survey of both surface and ground-water resources (picture 60) and of the possibilities of constructing dams has therefore been carried out and has resulted in a master plan for water development. This plan is supposed to be financed by the inhabitants, but long-term loans will be available. The project will help to organize the activities and will also make available detailed plans and the required technical services.

Through a special project, which has been supported by Sweden and which has been implemented by CADU, the water-supply problems of the town of Asella have been solved in connection with the construction of the project centre.

The investigations of the Munessa Forest (picture 62) have been aimed at determining the present timber resources, the ownership conditions, the possibilities of protecting the forest

Practical work at the agricultural school
The agricultural school



60. Survey of ground-water level

61. From the health centre at Sagure

62. Cutting in the Munessa Forest

63. Mule track

from being cut down and the best way of utilizing it. Since the existing stock of timber is comparatively small, since the government owns less land than was assumed, since the private owners are hard to identify and are not interested in forestry and since a large part of the forest is on slopes which are too steep for exploitation, it seems to be unprofitable to utilize the forest for commercial purposes. Instead, attempts should be made to start plantations on government land which is less suitable for agriculture.

A special study of the increased production of cross-bred cattle was conducted and resulted in a change in the project agreement, by which the Gobe and Asasa farms were added to the activities. An investigation of the possibilities of producing a protein extract for the manufacture of children's food at the Nutrition Institute yielded a negative result.

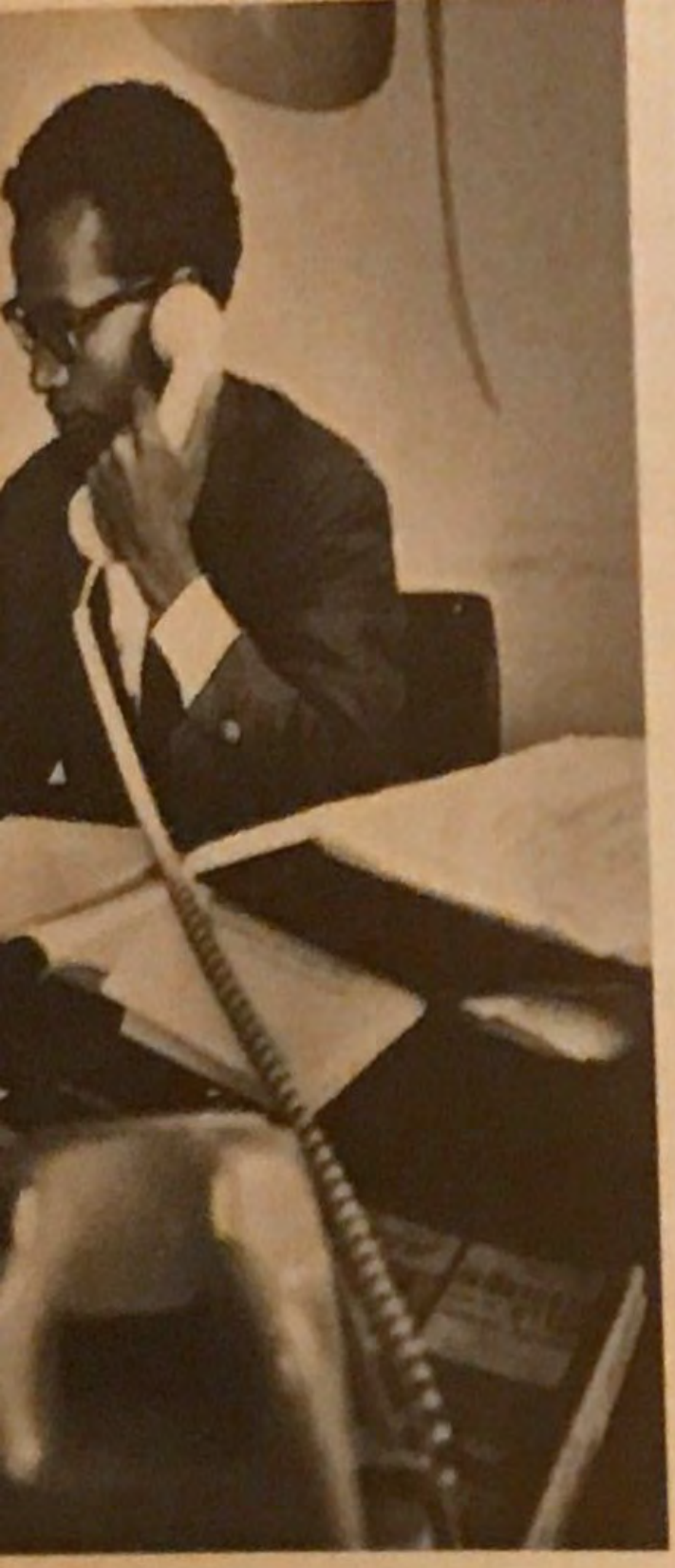
In order to provide the farmers with advice, services and means of production and to facilitate the marketing of produce, a development of the road network is of the utmost importance. An investigation on local roads (picture 63) has resulted in a proposal to build five stretches of road totalling 150 kilometres. It has been suggested that the technical standard should be the simplest that will allow transport by four-wheel-drive vehicles under all weather conditions.

Organization and Administration

The responsibility for the different activities is entrusted to the different sections (see the organizational chart on page 95) within the framework of an established work schedule and budget. Related activities are coordinated by a department head, who is also a member of the directorate, which meets every fortnight. At the expiration of the first government agreement, the project management was handed over to Paulos Abraham (picture 65), who had then served as assistant executive director for two years. Information and discussion meetings with all the staff are held irregularly, whenever they are desirable.

The Minister of Agriculture is responsible for the activities

64. The CADU organizational chart



but has at his side a ministerial committee consisting of the Ministers of Finance, Planning, and Land Reform, a representative of the Prime Minister's office and the Governor-General of Arussi (picture 66). When necessary, other members can be co-opted.

The committee prepares matters which require the decision of the Government, approves the management of the activities and discusses possible coordination problems.

The daily contacts with the project are handled by the Assistant Minister of Agriculture, Tesfa Bushen, who has given his full and very able support to the activities.

The executive sections of CADU are assisted by certain service functions. The administrative section is responsible for the cashier's office, accounting, procurement and staff management. Personnel are recruited in collaboration with the project management and the section in which the newly recruited staff-member is to serve. All staff are employed on contract with three months' notice of termination. At the end of each budget year, the performance of all staff is reviewed on the basis of certain criteria. The salary increment is determined by the performance. This form of employment has proved to be of the greatest importance for the effectiveness of the work in this initial phase.

The project has sections for the maintenance of buildings and machines (picture 67) and for the board and lodging of staff and students.

The construction of project facilities caused considerable problems. In order to start the activities, it was important that the buildings required should be erected as soon as possible. Consultants were appointed before a formal agreement was entered into. Complete documents were available in January 1968. Tenders were requested, but they were few in number and were considerably above the cost estimates. A contract was therefore signed with the firm which made the lowest bid

65. The new executive director, Paulos Abraham
66. Sahlu Defay, the Governor-General of Arussi
67. Workshop for the maintenance of machines and buildings

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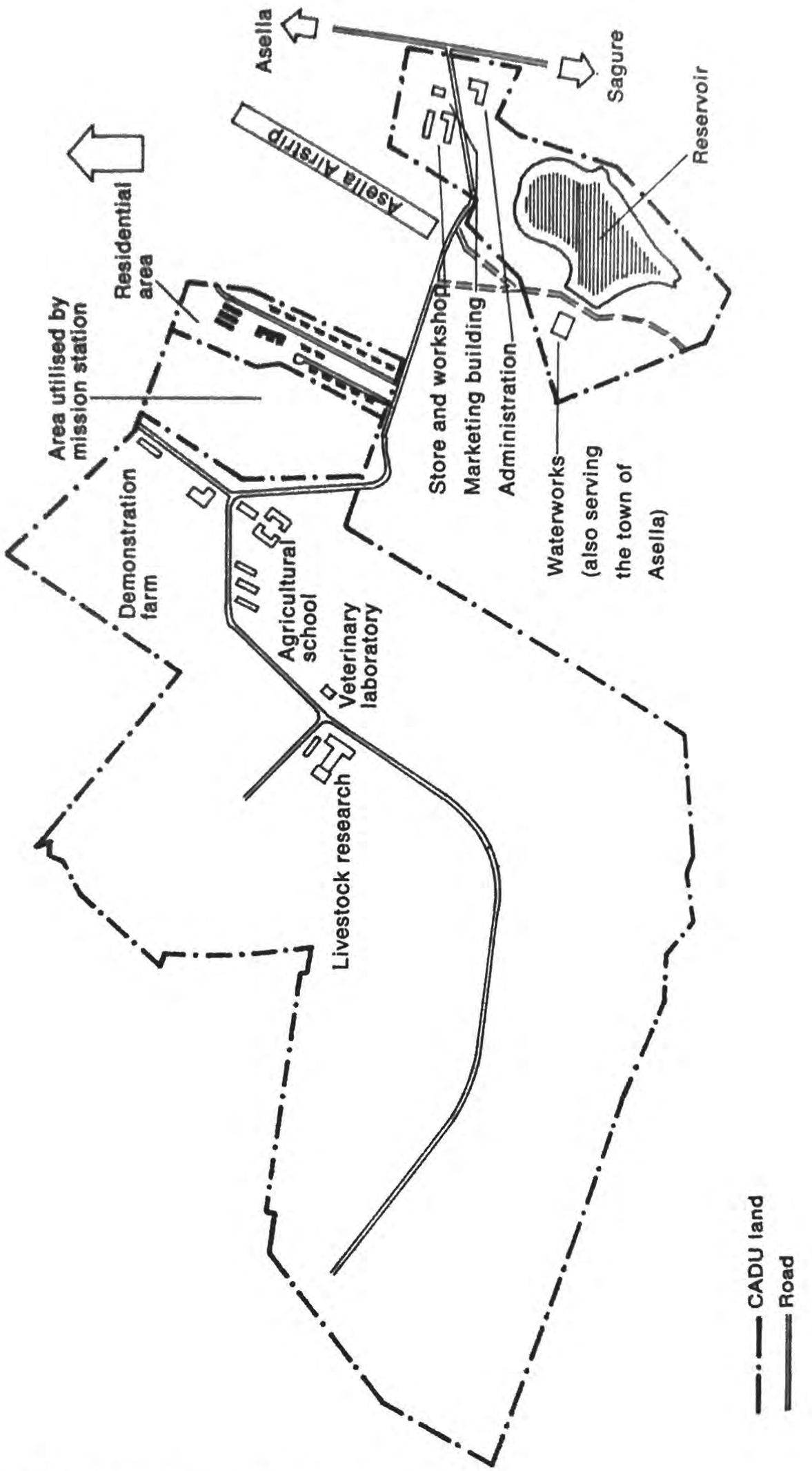

68. Layout of project centre at Asella

with respect to roads, water and sewerage, using a ceiling arrangement, which involved a bonus if the ceiling (equal to the cost estimates) was not reached and a reduction of the profit if the ceiling was exceeded. All other construction was conducted by the project itself with hired managers.

Particularly with respect to the roads and the reservoir, the bid documents were found to be deficient and the cost estimates wrong, and therefore it became necessary to allocate additional funds. In connection with construction by the project itself, it turned out to be very difficult to recruit and supervise staff for such a considerable activity so far away from Addis

		Eth. $ 1,000	Eth. $ per square metre
Buildings			
Administration		92	206
Workshop and store		132	—
Marketing building		63	247
Cafeteria and staff-training (club-house)		169	220
Guest houses (18 rooms with showers)		130	197
Staff houses (20)		817	209
Agricultural school with boarding facilities (18 rooms) and cafeteria		203	—
Office for extension service		52	230
Livestock farm and veterinary laboratory		117	—
Trade centres (3 new and 5 remodelled)		4	—
Kulumsa farm (remodelling)		58	—
Laboratory for crop experiments		58	230
Health centre at Sagure		67	—
Miscellaneous		112	—
	Sub-total	2,074	—
Roads		738	—
Reservoir and plant		1,163	—
Water and sewerage system		426	—
Miscellaneous		227	—
	Sub-total	2,554	—
Management of construction		300	—
	Total	4,928	—

Ababa and with an enterprise the life of which was calculated as only 18 months. Ensuring proper deliveries and checking the stock also turned out to be extremely difficult. Nevertheless the construction was carried out according to the plans and, in spite of certain cost increases in relation to the consultant's estimates, we still managed to keep the total cost considerably below the bids that had been obtained. An independent evaluation of the construction work also arrived at the same conclusion. The design of the project centre is illustrated in picture 68. Regarding the building program see table on page 99.

Benefits and Costs

The costs during the period September 1967 to July 1970 were as follows.

		Eth. $ 1,000	Per cent
Swedish staff (January 1970, 32 persons, of whom 4 are volunteers)		3,209	23.2
Ethiopian high- and middle-level staff (January 1970, 45 persons)		668	4.8
Other locally employed staff (January 1970, 304 persons)		831	6.0
Other operating costs	4,573		
Revenue	./. 3,312	1,261	9.1
Investment in buildings etc. (incl. Gobe and consultants)		5,945	42.9
Investment in equipment and cattle		1,480	10.7
Investment in land		458	3.3
	Total	13,852	100.0

A functional breakdown of the operating costs (excluding housing in Addis Ababa and consultants) for the period 1967—70 yields the result shown in the table on the following page.

The economic benefits to the Chilalo inhabitants from the project activities were calculated at the outset of the project on the basis of assumptions as to the effect of the innovations which the experimentation was expected to produce and as to

	Eth. $ 1,000	Per cent
Sales and purchasing activities	254	4.6
Extension and other services to the farmers	909	16.6
Experimentation (incl. evaluation and further studies)	2,467	44.9
Production of inputs	629	11.5
Training	183	3.3
Administration (incl. maintenance and accommodation at Asella)	1,048	19.1
Total	5,490	100.0

the speed with which the farmers could be imagined to accept this new technique. The basis for estimating both these factors was very weak and the forecast was mainly derived from international experience.

The calculations for the first four years and for the thirteenth year are shown below (1967 only comprises four months). The actual return (after deduction of the increased cost of production) during the first period is also given. These estimates are based on the sale of inputs and their yield-increasing effect, plus the price increases which the CADU milk collections have made possible. The calculations do not include the effect of the vaccination of cattle or recommendations concerning better soil preparation, row planting, weeding, etc. Nor do they include the effect of inputs which have been derived from other sources than CADU. When, for instance, a new wheat variety is released, the farmers are obviously free to use their own seed and to sell to their neighbours the following year.

In order to get a more comprehensive measurement of the project benefits, it is therefore of great importance to get direct calculations of the income changes. To measure these with any degree of statistical significance, however, involves very considerable difficulties, which the project has not yet been able to cope with. (See table on the next page.)

About one-fifth of the farmers in the project area had thus accepted new techniques by the middle of 1970, three years

Year	Benefits expected at the start of the project		Benefits achieved	
	No. of participants	Eth. $	No. of participants	Eth. $
1967	—	9,200	—	—
1968	120	45,000	190	1,500
1969	525	109,000	850	58,000
1970	1,375	481,000	4,667	754,000
1979	44,000	17,000,000	—	Approx. 1,500,000
				—

after the start of the project.

As can be seen, it was a long time before the development started, but the acceleration has been considerably more rapid than was expected. Since the total cost development almost completely coincides with the expectations, we may cherish a certain optimism about the feasibility of the project, even though a definite evaluation is not yet possible. In spite of the fact that the costs are much greater than the benefits so far, we expect that the latter will increase rapidly and lead to an internal rate of return of 18 per cent. After three years of work it seems as if we might even entertain somewhat higher expectation. It must also be remembered that training and development of methods are included on the cost side, while it has not been possible to quantify the return that these activities may yield outside the Chilalo district. During the initial period investments were also made whose durations are considerably longer and which cannot be utilized fully until the project has been expanded to comprise the whole of the Chilalo district.

Supporting Measures

The government agreement contains a number of measures which are to be taken by the Ethiopian Government and which are meant to promote the development within the project area. It is in this field that one finds the greatest delays during the initial period.

Owing to the priority which the Ministry of Education has given to the project area and the effective work of the Ethiopian school-building unit, the expansion of primary education seems to have proceeded in a satisfactory manner.

The undertaking of the Ethiopian Government to make funds available for the credit activities of CADU has been more than fulfilled. In 1970 CADU was able to borrow not less than Eth. $ 400,000, as against the Eth. $ 80,000 mentioned in the agreement.

With respect to the improvement of the road situation, Eth. $ 1.5 million have been placed at the disposal of the project, but they have not yet been utilized, since we wished to await a further study of the road requirements (see above the section on Further Studies) and a decision about the main road southwards from Asella. This latter was supposed to be incorporated in the fourth highway loan from the World Bank and SIDA. All roads of this secondary type were, however, selected for further studies. The feasibility study was not available until the summer of 1970, and therefore the construction has been considerably delayed.

As supporting measures, the Ethiopian Government also undertook to submit to Parliament a proposal about a cadastral survey and land registration and a new tenancy law. New legislation was also drafted with admirable speed but was only taken up by the Government, after a long delay, in March 1970. In spite of intensive work, the administration did not succeed in putting the bill into such a shape that it could be submitted before the end of the parliamentary session. However, we have been informed that the contents of the draft legislation have been accepted by the Government and that the bill will be submitted when the Parliament reconvenes in November. In this situation Sweden has agreed to prolong the present agreement by six months.

With respect to the legislation on local self-government, two parts have been passed by the Parliament. Consideration of the third part, the taxation powers of the local bodies, has been deferred by Parliament.

In order to get an impartial evaluation of the project, the Ethiopian Ministry of Agriculture and SIDA appointed a special study group. The members appointed by Sweden were Professors Torsten Gårdlund and René Dumont, while Ethiopia appointed Tekalegn Gedamu, the head of the Development Bank, and Professor B. Milosavljevic, the Yugoslav economist, who was working in the Planning Commission. The group conducted field studies for two weeks during the fall of 1969. In its joint report the group emphasizes that it is too early to make any definite statement about the feasibility of the project. They are, however, very positive both to the project approach and its returns so far.

The importance of a rapid geographical expansion of the extension activities on the basis of the experience gained and the experimental results, in order to increase the benefits of the project, is emphasized. For this purpose, an extension of the road network is also thought to be of great importance.

The group underlines the importance of public participation and increased responsibility for the farmers. The necessity of reaching the tenants is also pointed out.

With respect to the objectives, the group considers that the development of new methods, the circulation of information about the methods and the training of staff for other projects must be given great emphasis.

The CADU organization seems to have functioned well, according to the report. The management of the project has had sufficient independence for effective administration. The administrative contacts have, however, not functioned well on the local level. When the preliminary evaluation report was submitted, there had been only one meeting of the development committee, at which the local participants had been said to have hesitated to express any opinions in front of the government officials who were present.

The contacts with different experimental and research institutions, both inside and outside Ethiopia, seem to have been of considerable importance, while the more general contacts

with the central administration seem to have yielded meagre returns, it is said. The members of the group declare that they have received a good impression of the administration of most of the activities.

Deficiencies within the administration refer to the recruitment of both Swedish and Ethiopian personnel. In September 1969 there were no replacements for 11 of the 65 staff members who had left or were on the verge of leaving the project on the expiration of their contracts. In view of the recruitment difficulties, it is suggested that non-Ethiopian staff should also be recruited outside Sweden.

The report is also critical of the arrangements for accommodating the project staff at Asella. The 20 houses which were planned are now ready but are quite insufficient in number. This means, among other things, that 10 of the patriate staff are forced to live in Addis Ababa 175 kilometres from the project centre and during the weekdays have to be accommodated in guest rooms. The lack of leisure-time arrangements for the staff is also mentioned, and the staff medical care is considered to be unsatisfactory, but it was noted that improvements are under way.

The initiative in making a systematic evaluation within the project is praised, but it is pointed out that the evaluation should not only embrace the cost in relation to changes in the farmers' incomes but should also consider such factors as health improvement, reading ability, etc., i.e. factors which represent all sectors of the social change.

It is concluded that the activities concerning transport, construction and maintenance seem to have been carried out effectively. It is mentioned that the plan for the extension of the roads, which is an Ethiopian undertaking and which must be considered to be a precondition for the success of the CADU project, has not yet been fulfilled.

The crop-production department, according to the report, has carried out its work by scientific methods. Valuable work has been done at the experimental farm at Kulumsa, where the most striking success has come in the cultivation of fodder-beet and high-yielding hybrid maize.

With respect to the tractor-hire service, the group indicates that an increased use of tractors would possibly increase the yields but that it may not be feasible at this stage. The employment opportunities will be diminished when the landowners expand their own farming operations by mechanization, after previously having leased their land to several tenants.

The lack of farm implements is emphasized as a serious bottle-neck in agricultural development. Above all, there is a lack of ox-drawn transport equipment, but harrows and cleaners are also lacking. Good work has been carried out by the section for the testing and adoption of implements. However, the work started comparatively late, according to the report.

As regards the forestry section, it is now time to start experimentation with new tree species which will not only increase the economic rewards but also produce employment opportunities. In this connection, mulberry trees are particularly mentioned. These should be able to provide a basis for a silk industry, which in turn could produce much-needed export incomes.

Very successful work seems to have been done by the marketing section, particularly as concerns the collection and selling of milk. In August 1969 the market in Addis Ababa was supplied with 1,400 litres of milk daily from the district. Before the project started, no such deliveries were made.

The activities in the department of animal production should be continued as before. The activities are aimed at a higher milk yield through cross-breeding with better breeds. For the future, the project management ought also to consider the production of improved oxen and horses, through which improved transport facilities could be provided. Sheep and chickens are recommended for higher altitudes.

The department for extension and education has correct objectives and uses good working methods, the group concludes. The department has sections for agriculture, cooperation, the womens' program and information and a fifth section for running a special agricultural school.

With the exception of a delay in starting the agricultural

school, the work is far advanced, the report says. The idea of the "package program" is highly commended. It has resulted in increased income for almost all the farmers who have participated in the first stage of the activities, emphasizing improved varieties, the application of fertilizers and improved marketing.

In the personal comments, which the members of the group have given individually, each on his own area of competence, they all consider CADU a very successful project. Professor Dumont emphasizes, among other things, that the system which involves the tenants paying rent in relation to the production must be abandoned. The present system should be transformed into one with a fixed rent, in order to make it possible for the farmers to venture to put their resources into the effective fertilization of the soil, for instance.

Professor Gårdlund asks for closer collaboration with the local administration and local groups. So far this deficiency has not involved any negative effects on the project, he points out, but it may become very dangerous at a later stage. Ato Tekalegn suggests that one of the reasons for the deficient collaboration at the local level may be that insufficient efforts were made during the project preparation to inform the local administration for the region.

Living Conditions at Asella

Asella (pictures 69—73) has about 14,000 inhabitants and is the site of both the provincial and the district administrations. The High Court of Arussi, the police headquarters and the Church administration are also situated here. The town has furthermore the only hospital and secondary school in the province. No real industry exists, but a number of artisans of different kinds have established themselves at Asella. The main occupation, however, is trade, which consists in the purchasing of agricultural produce and the sale of consumption goods. The entertainment in the town consists of a great number of bars (about 400), where coffee, soft drinks and hard liquor, including home-made beer, aquavitae and honey wine,

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69. Asella

70–72. Two bar-girls, a butcher and a clerk at Asella

73. There are many bars at Asella

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73

are served. The bar service is sometimes connected with prostitution. A new hotel has recently been opened. The housing standard is rather low and only a few houses of western standard are to be found. Electricity is supplied by diesel generators and the first mains-distribution system for water is being constructed by CADU. Sewerage does not exist.

In view of the difficulties of obtaining land and in order to reduce the costs of roads, water and sewerage, the CADU construction of offices, houses and other buildings was concentrated in the southern outskirts of the town. The supply of acceptable houses is of great importance for the recruitment of trained Ethiopian personnel and a necessity in catering for the expatriate staff. Since the local market has very little to offer, it is necessary to supplement the housing facilities, but, as the first agreement period was of an experimental character, the construction was limited to 20 villas (picture 75), five with two bedrooms, 10 with three bedrooms and five with four bedrooms, plus a number of single rooms.

During the project preparation and during the first part of the implementation period, before the houses hade been constructed, the staff were accommodated during the week in a very simple barrack and returned to their families in Addis Ababa at the weekends. In spite of the considerable strains that this involved, the difficulties were taken in a spirit of good humour. Fifteen Swedish staff members, mainly bachelors, still have their permanent housing in Addis Ababa but can now be offered a single room with a shower during the week at Asella. Sixteen of the villas are occupied by expatriates, while four are utilized by Ethiopian staff. The largest families are offered the more spacious houses. A further extension of the accommodation now has high priority. The emphasis will probably be placed on smaller apartment-type accommodation, since most of the staff have proved to be bachelors or to have small families.

The club-house (picture 76) contains a cafeteria, living accommodation, sauna bath, laundry facility, staff store and a Swedish school and facilities for staff-training. The staff has also constructed a tennis court, built a stable and operates

a nursery school.

Recreation facilities are available at a guest house in Addis Ababa, where overnight accommodation can be offered at a low price. There are swimming pools at places 60 kilometres (picture 77) and 100 kilometres (picture 78) away in the lowlands, where the weather is often sunny and warm. Many are interested in the magnificent Ethiopian outdoors and make excursions in different directions during the holidays. Camping on the shores of the lakes in the lowlands has become popular and the project has its own camping ground at Lake Scialla (picture 79).

The contacts between the Swedish staff and the farm population are necessarily very limited. The main hindrance is, of course, the language. Though courses in Amharic are arranged, it is hardly possible to acquire more than a very superficial knowledge in the course of the ordinary work. With a two-year contract period it is not possible to set aside 6—9 months for language studies. Furthermore, since a large number of the farmers do not speak Amharic, the studies would have to comprise also Gallinya. Direct contacts with the farmers are thus handled by the Ethiopian personnel.

All the personnel are directly responsible for their tasks. There are no advisers. The foremost task of the foreign staff is, however, to try to transfer their experience to their Ethiopian colleagues and thereby to eliminate the need for continued foreign participation. It is of the utmost importance that satisfactory and trustful cooperation should be established. The staff seem to have succeeded quite well in this. Since both groups have the difficulty of communicating with each other in a second language (English), one may note that there is a certain separation during leisure time. Though this does not influence the work, it seems to be important to try to overcome this difficulty and to work for greater integration. The newly formed staff club should be able to work in this direction.

3. Other Ag...

From the national point of view the efforts in the Chilalo district are, of course, only the beginning. The integrated approach implied by the package method is intended to become one of the main methods for developing the traditional farming. It is therefore important to utilize the experience gained. To some extent CADU has also stimulated similar projects elsewhere. At the beginning of 1970 a similar project, the Wotamo Agricultural Development Unit (WADU), was started with assistance from the World Bank. For two other areas (northwestern lowlands and Shashamanne) an agreement has been signed or is about to be signed with the World Bank and USA respectively. The planning has reached an advanced stage for the Addis Ababa Dairy Development Unit (ADDU), promoting milk production around Addis Ababa and the Ada district, while preparations have been started for a number of other projects. A large irrigation project is under development in the Awash valley but was started long before CADU (This project has been marked on picture 3.)

In connection with an organizational study of the Ministry of Agriculture, it has been suggested that the present extension service should be concentrated in areas where experimental results are available or applicable and that it should be supplemented with the supply of inputs and credit. Through the better utilization of the available resources and through its modest character (also implying concentration on certain products), it should be possible, with these minimum projects, to cover rapidly a larger part of the country. These projects could at a later stage be made more comprehensive. This approach has also been recommended in the latest World Bank review of the economy of Ethiopia.

The organizational study furthermore suggests that a sepa-

rate department within the Ministry of Agriculture should be responsible for the coordination and supervision of and service to the more comprehensive projects of the CADU type and for the implementation of the minimum projects. Sweden has been asked to assist with the detailed planning of this department and to provide staff for some of the posts in it. The intention is that the new department shall be functioning on the new lines already during the growing season of 1971.

4. Cooperation with Sweden

In connection with the enlargement of the Swedish assistance in the field of agriculture, it was important to try to develop the staff resources. Admissions to the Agricultural College and the diploma courses in agriculture were therefore increased. Since the training in tropical agriculture abroad proved to be unsuitable as a continuation of the Swedish degree in agriculture and not well adapted to the modern development-assistance requirements, courses on this subject at various levels were started at the Agricultural College at Uppsala. Through the availability of minor research tasks, the students were also able to carry out an investigation for a higher degree in connection with different assistance projects (particularly CADU). It was also hoped that these tasks would stimulate interest in taking on engagements abroad. Through service in developing countries, a group of people with experience of such work is gradually being created and it is hoped that members of this group will be willing to go out again.

During the past agreement period, the recruitment has been shown to involve considerable difficulties. Advertisements have often not yielded any result and a personal appeal has been necessary. In order to create opportunities for such contacts, the recruitment of agriculturally trained personnel was transferred to the Agricultural College, with a good result. The establishment of channels for recruitment outside Sweden should improve the situation further.

Cooperation with the projects in determining salaries and flexibility and increased understanding of the value of an often unique experience and the need of continuity would also lead to considerable progress being made.

The personnel administration of SIDA should be given larger resources and greater freedom of action, in order to

avoid the present delays and rigidity.

Owing to the short employment periods which are characteristic of development-assistance work, maintaining the continuity of the activities has proved to be a common difficulty. In order to avoid this and in order to get specialist aid and help with the recruitment, the project has signed contracts with a number of Swedish consultants. The Agricultural College, the Swedish Association for Cattle-breeding and Artificial Insemination, Professor Wenner in Stockholm (water program) and Professor Wickström in Gothenburg (evaluation, distribution problems) have been of great service to the project. As regards the Agricultural College, the cooperation has also meant that the teachers have had an opportunity to gain practical experience, which has proved useful in the training in tropical agriculture. The Swedish Association for Cattle-breeding and Artificial Insemination, which also has close contacts with the developments in its field in Kenya, has also been able to transfer experience from that country.

Since SIDA can only to a very limited extent directly employ specialists, it is desirable to expand the collaboration with institutions and persons who can provide such services. This concerns the continuous contact with agricultural progress in the main receiving countries, the preparation of projects, the evaluation of projects (not only the Swedish ones), and the transfer of experience to projects supported by Sweden in different countries. In this connection attempts should also be made to employ the staff returning from assignments abroad, to utilize their experience and to retain their interest in the problems in question.

5. The Future

When CADU was started, Ethiopia was one of the [illegible] receivers of Swedish assistance. Since then, a growing [illegible] of public opinion in Sweden has wanted to concentrate [illegible] assistance in countries whose governments share the [illegible] socialist ideals. In other words, shall we continue in Ethi[illegible]? The activities supported by Sweden are directed [illegible] creating better living conditions for the section of the [illegible] tion which is at present in the worst position, viz. the farmers. A better economic position will be accompanied by opportunities for education and the broadening of views. Also in the field of education Sweden has given substantial help. Irrespective of what the future holds for Ethiopia, this kind of assistance must help to create a better basis for further progress.

Experience has also shown that through suitable agreements one can create working conditions which allow of very essential contributions being made. A revolution of the agricultural techniques and the living conditions of the rural population seem to be within reach. In connection with the assistance, one can demand institutional reforms (for example, tenancy legislation) and thereby support the progressive forces within Ethiopian society.

My conclusion is therefore that it has taken a very long time to establish the trust that Sweden enjoys today in Ethiopia. Through the utilization of goodwill and the opportunities for future assistance, it should be possible to work for reforms which will be of crucial importance for the further agricultural development. A realistic assessment of the possibilities must be made before such demands are put forward. This is also the line which Sweden tried to follow, when the signing of a new CADU agreement was linked with the submission of new tenancy legislation to Parliament. It is important that we

should stand firm on this line of approach and, if the conditions are fulfilled, that we should carry out the plans and be prepared to utilize the experience gained by giving increased support also to secure progress on the national scale. Without continuity and follow-up, the effect of any assistance work will be very limited.

The plans for the new agreement imply that the objectives are basically unchanged. In connection with the economic and social development, it has, however, now clearly been stated that both the participation of the population, the income distribution and the employment effects shall be taken into consideration. When the incomes are improved, it is also important that the people of the Chilalo district should contribute financial resources to the further development work in other areas. So far, Ethiopian society has poured its resources into Chilalo. It is now necessary for Chilalo to export resources to other parts of the country through an effective system of taxation. The project area is expected gradually to expand to the remaining parts of the Chilalo district.

The activities are basically unchanged. The construction of roads and the provision of water supplies have been added and the veterinary activities are to be intensified in connection with the distribution of cross-bred cattle. The CADU health activities have been separated and transferred to the provincial health service, which, it is intended, shall receive some Swedish assistance through a parallel agreement. The forestry activities will be more limited. The experimentation is broadened somewhat. The internal organization has been reviewed and the commercial activities have been separated to form more independent units, in order to facilitate the transfer to a cooperative kind of organization.

The development of the agricultural techniques is expected both to create a need of and opportunities for agro-industrial projects. These opportunities, together with the increased emphasis on the employment effects, have meant that the identification and studies of such opportunities must be given further emphasis.

Among the supporting measures which the Ethiopian

Government has been asked for, it should be particularly noted that the new tenancy legislation is supposed to be implemented in the project area within two years from the signing of the agreement. An improvement of the local administration is also initiated.

The costs of the five-year period that the new agreement is expected to cover have been calculated as about 30 million Ethiopian dollars, of which Sweden will pay two-thirds.

Just before the Swedish edition of this book was published, a new CADU agreement was signed in Addis Ababa. The agreement covers the period 1 January 1971 to 7 July 1975. The two governments have agreed, under certain conditions, from the Swedish side particularly the question about tenancy reforms, to cooperate in the completion of the second phase of a 13-year development program.