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ASPECTS  
OF  
DEVELOPMENT

HELMUT BUSKE VERLAG HAMBURG

Jörg Janzen

DEVELOPMENT PROBLEMS IN SOMALI AGRICULTURE  
- AN OVERVIEW -

Introduction

The Democratic Republic of Somalia covers a surface of nearly 638.000 km<sup>2</sup>, which is about 2 1/2 times the size of the Federal Republic of Germany. But the population is only estimated to be about 5 million people. In view of an average annual per capita income of US \$ 303 and other structural features of underdevelopment, such as high surplus of births exceeding 3% per annum, a very low average life expectancy, very high infant and child mortality, combined with low productivity in the agricultural sector, Somalia is statistically among the least developed countries of the world.

On the other hand it is not right in my opinion to characterize Somalia as one of the poorest countries in the world. Somalia possesses many resources, and an intensive exploration for minerals, gas and oil has only started during the last years. Particularly in the agricultural sector <sup>I</sup> considerable land resources still lie fallow, a point which I will discuss in greater detail below. As far as the development of agriculture in Somalia is concerned answers to two principal questions must be found:

- I. Which measures must be taken in order to make better use of agricultural potential and possibilities in the present natural, demographic, socio-economic and political circumstances?
2. What measures must be taken in order to integrate the

rural population into the nationwide development process, while at the same time abolishing systematically economic inequalities and regional disparities?

Before I turn to the problems of agriculture in particular, I should like to give a brief introduction into the agricultural structure and present some government initiatives which were launched in recent years for the improvement of Somali agriculture.

Characteristics of contemporary Somali agriculture

In Somalia about 22% of the population, which according to official estimates was about 1.14 million people in 1981, are engaged in agriculture. In the same year the agricultural sector accounted for about 7 to 8 per cent of the nation's GDP and contributes in 1980 approximately 8 per cent of export earnings, mainly by exporting bananas. The livestock sector is much more important; 2.9 million nomads, or 56% of the population are stock breeders. Livestock exports have contributed between 70 and nearly 90% of total export revenues between 1977 and 1980.

The present cultivated area is small in comparison with the amount of arable land available for cultivation. From 8.150.000 ha only 700.000 ha are under cultivation. Most of this land is only good for rainfed farming. Less than 8,6% of the estimated potentially arable land is cultivated; of these 700.000 ha only 50.000 ha, or 7.1%, are irrigated (fig. 1). Somali irrigation agriculture is concentrated in the alluvial plains along the rivers Shabelle and Juba, and to a small extent in the NW-Region around Hargeysa. Even in these areas only a small part of the potentially irrigable land is used for irrigation agriculture; 9% in the Juba Valley, 25% in the NW-Region and 41% in the Shabelle

Figure 1. Potential and present cultivated areas in Somalia (1982)

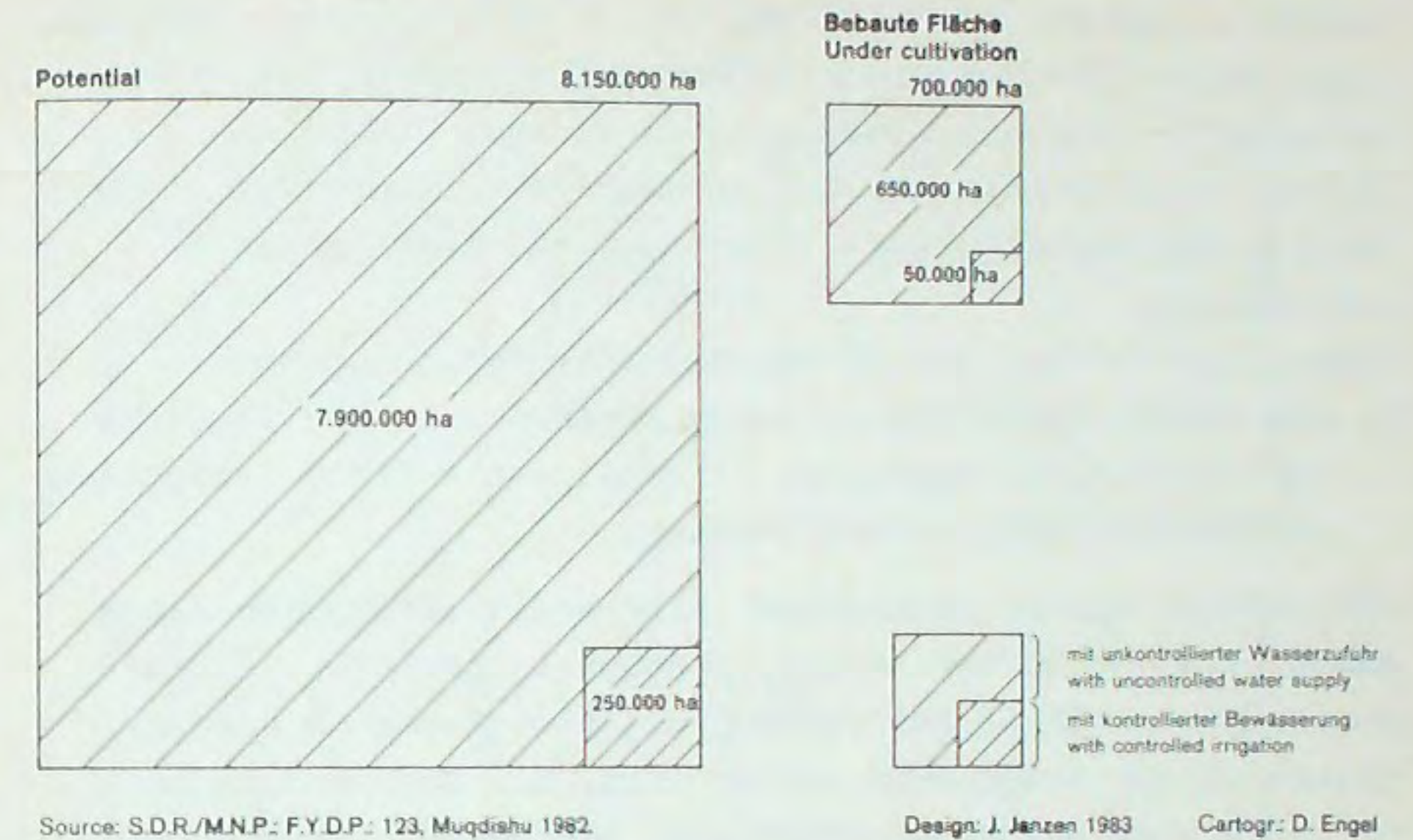
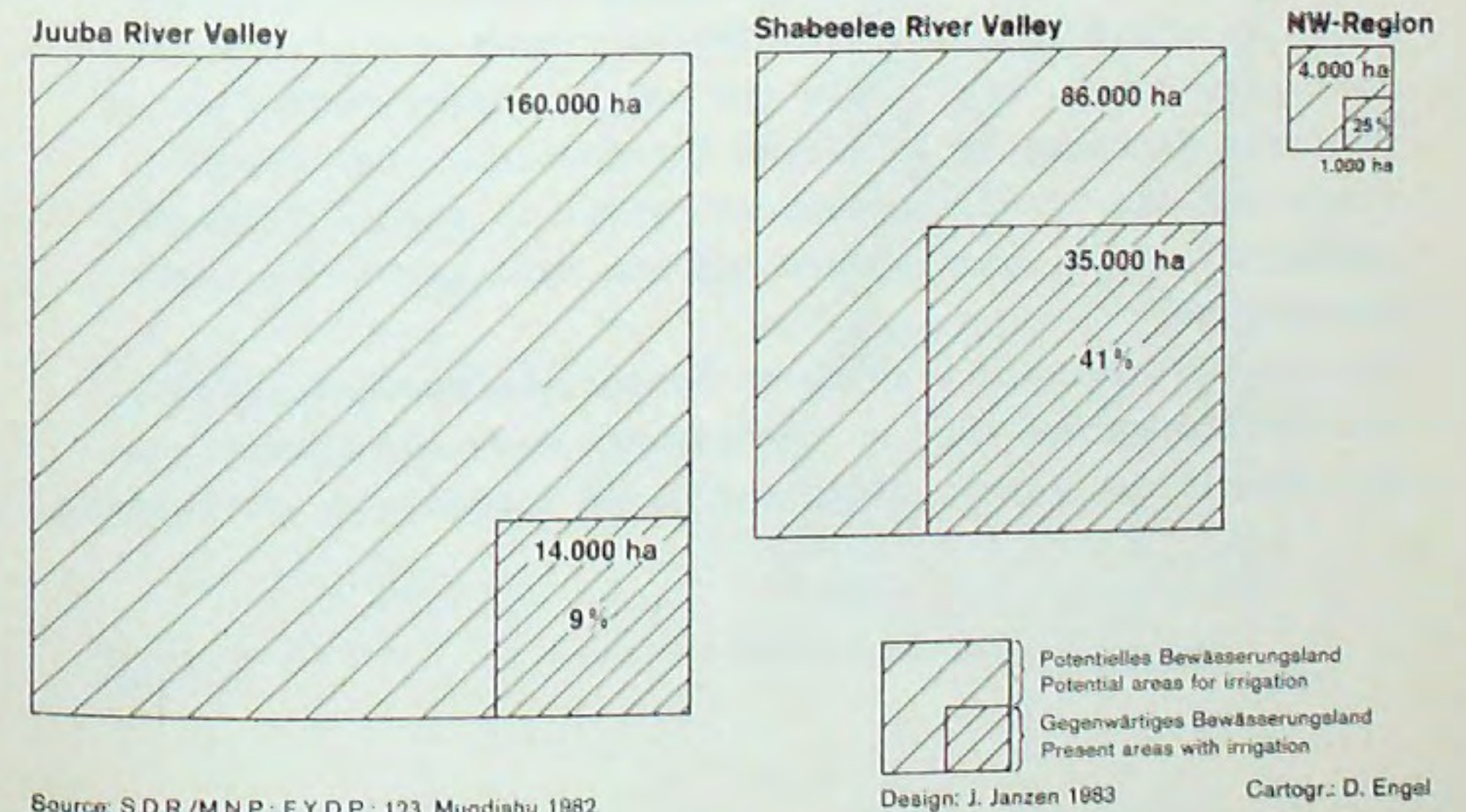


Figure 2. Potential and present cultivated areas under controlled irrigation according to agricultural regions (1982)



Valley (fig. 2). The bulk of the rainfed agricultural land lies in the interriverine zone where the average yearly rainfall reaches about 600 mm, and in the Hargeysa - Borama area, which receives about 500 mm precipitation per annum. But also in the more arid parts of central and north-eastern Somalia one can find an increasing number of plots for rainfed farming, very often near the settlements of semi-nomads.

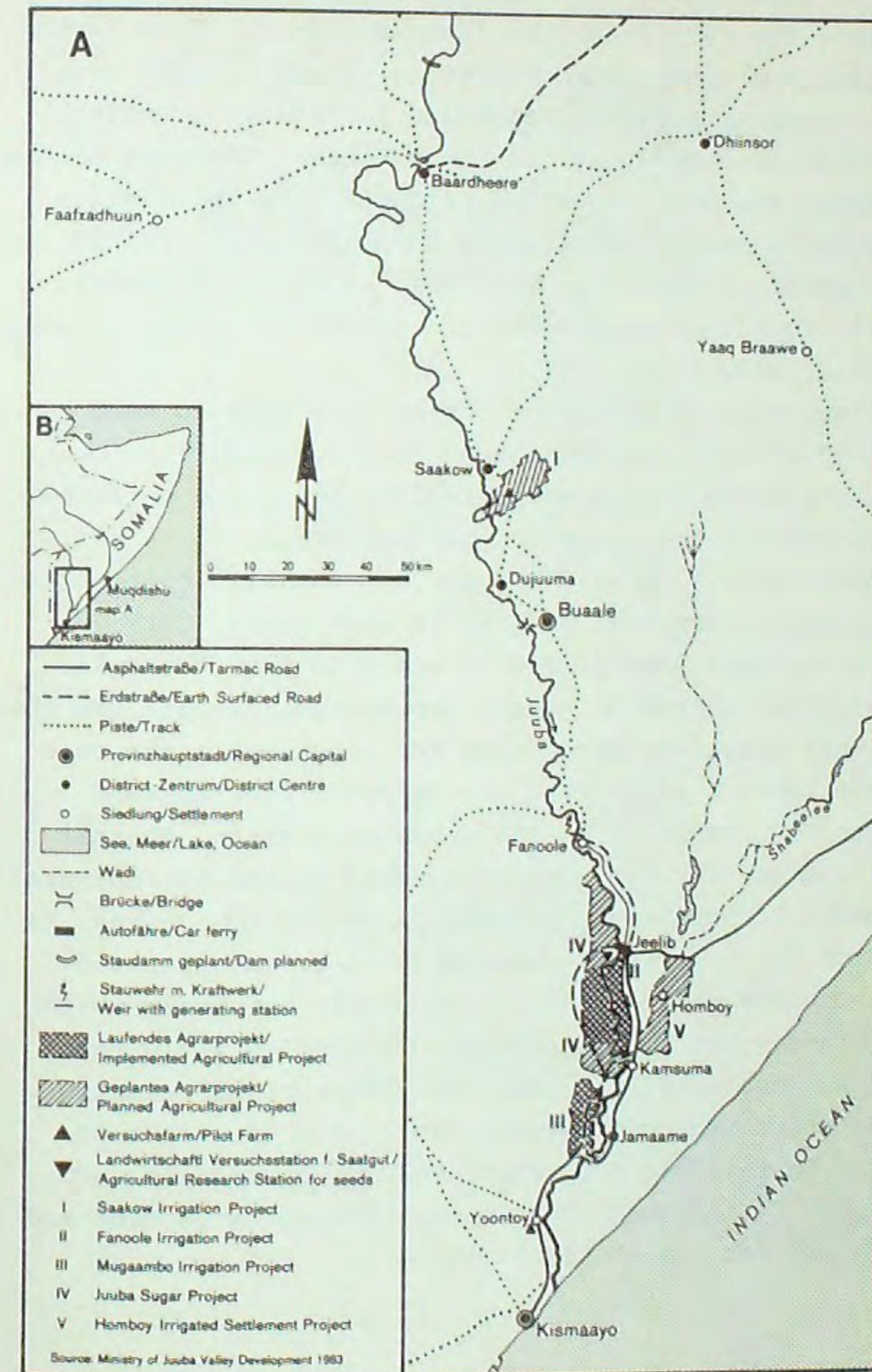
Somali agriculture can be divided into two subsectors:

1. the modern subsector of large scale irrigation farming;
2. the traditional subsector of small scale flood irrigation agriculture and rainfed farming.

The modern, highly mechanized large scale irrigation farms stretch along the two rivers of Shabelle and Juba. A high proportion of these new large irrigation farms is concentrated in the lower Juba Valley (fig. 3). The production of these plantations provides part of the necessary food for the urban population and is oriented towards the world market. The major crops on these modern irrigation farms are bananas, sugarcane, rice, cotton, grapefruits and, in smaller quantities, other fruits and vegetables. While the largest number of the banana plantations were founded during the Italian colonial period, other large agricultural projects have been established only recently or are still in the planning stage. The big farms are either privately owned, especially the banana farms, or represent projects financed by different international development funds and the Somali government. There is also a limited number of state farms, owned and run exclusively by the government.

The second subsector, which is by far the most important, is rainfed agriculture of the farmers and semi-nomads and the simple but rather efficient flood irrigation agriculture

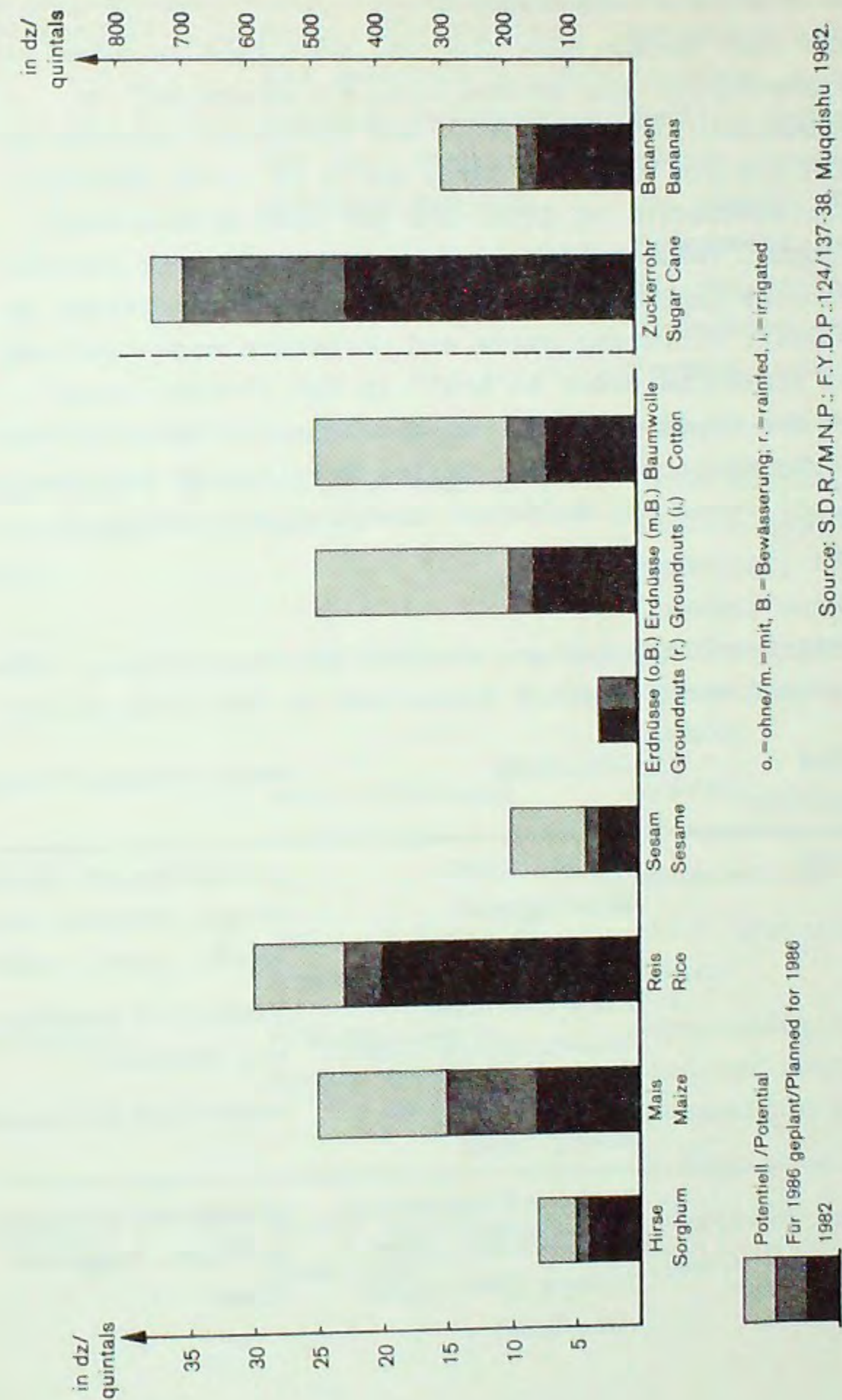
Figure 3. Large scale agricultural irrigation projects in the Juba Valley (1983)



agriculture found in the shallow depressions in the vicinity of the two rivers. In the Juba Valley these favourable areas for agriculture based on flood irrigation are called 'desheks'. The farmers of the flood-irrigation zone in the flood plains of the rivers cultivate mainly sesame, maize, in some areas groundnuts, beans and in smaller quantities other kinds of vegetables. In the Bardheera district onions and tobacco are very important products. The cultivation of sorghum is nearly exclusively limited to the rainfed farming areas on higher ground. Despite very low yields, maize and sometimes sesame and groundnuts can also be found on rainfed land.

The average size of the farms varies from area to area according to soil conditions and water availability. Unfortunately there are no reliable data available on farm-sizes in rainfed or irrigation farming areas. It is estimated that about 5 ha with sorghum are annually cultivated by the average farm family. Only in some areas, farm cooperatives have been formed in order to give the small-holders better access to modern agricultural inputs. In the traditional subsector production for subsistence purposes dominates. Only a small part of the production is sold either to the nomads or to the urban population. Another part of the harvest has also to be sold to the Agricultural Development Corporation (ADC) for fixed but low prices. As production in the traditional subsector is mainly based on unproductive methods and in the modern subsector there are still many unsolved problems, the average yield per hectare is generally very low. The yields of all plants could be increased considerably. Increases of yields of 30% would be possible for maize, sesame, groundnuts and cotton, 50% for sorghum and bananas, 60% for sugarcane and even 67% for rice production (fig. 4).

Figure 4. Yields per hectare of major crops



Source: S.D.R./M.N.P.: F.Y.D.P.:124/137-38. Muqdishu 1982.

Design: J. Janzen 1983 Cartogr.: D. Engel

Past and present government measures for rural development and their effects on agriculture

During the last decade many programs have been launched in order to ameliorate the agricultural structure and to raise production. A basic social and technical infrastructure which did not exist in large parts of rural Somalia before the Revolution of 1969, has now been established. Without doubt, these achievements are an important contribution towards improving economic and living conditions in rural Somalia. Different state and parastate organizations have been formed in order to build up the institutional framework for rapid agricultural development. Table I, compiled in the Ministry of Juba Valley Development for the Juba Region, shows the different institutions and their functions.

Table I. List of Institutions serving the Agriculture, Livestock and Fisheries Subsectors in the Juba Valley

Ministerial Responsibility	Institution	Main Responsibility
Agriculture	1. Agricultural Development Corporation (ADC)	marketing of sorghum, maize, cotton, oil-seeds, rice, seeds
	2. Farm Machinery Organization (ONAT)	hiring of mechanical services
	3. National Banana Board (NBB)	marketing of bananas
	4. Dept. of Agricultural Cooperatives (since 1981 independent)	promotion of agricultural cooperatives

Ministerial Responsibility	Institution	Main Responsibility
Agriculture	5. Dept. of Production and Extension / Agricultural Extension and Farm Management Training Project	extension service, training, seed production and certification, credit, input supply, farm management, monitoring and evaluation, plant protection and locust control, research
Livestock, Forestry and Range	6. Dept. of Animal Health	Serum and Vaccine Institute Mogadishu; Veterinary Laboratory Kismayu; veterinary field service; meat inspection; tsetse control
	7. Dept. of Animal Production	breeding and selection of animals; artificial insemination
	8. Dept. of Planning, Training and Research	staff training, research
autonomous	9. National Range Agency (NRA)	development of rangeland and environment; research; training
Finance	10. Somali Development Bank (SDB)	investment and development loans

Ministerial Responsibility	Institution	Main Responsibility
Finance	II. Commercial and Savings Bank	short-term credit
	I2. National Trading Corporation (ENC)	marketing of sugar, edible oils, tea, wheat, coffee, pasta products
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Industry	I3. Kismayu Meat Factory	meat
	I4. Tannery Kismayu	hides and skin processing
	I5. Fish Freezing Kismayu	fish
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Bureau of the Somali Revolutionary Socialist Party	I6. Crash Programme Agency	agricultural production, training
	I7. Settlement Development Agency (SDA)	settlement of drought and war refugees

Source: Ministry of Juba Valley Development, Mogadishu 1983

During the Five Year Development Plan (FYDP 1974 - 1978) 29.1% (I.282 million SoSh) of total investment funds were allocated to agriculture, while the figure in the Three Year Development Plan (TYDP 1979 - 1981) was 23%. Despite considerable efforts to increase food production, none of the three main objectives for agriculture during these periods:

1. to reach self-sufficiency in food production by the end of 1981;

2. to increase agricultural incomes;
3. to raise agricultural exports

could be attained. An exception are the banana-producers, who seem to benefit from the devaluation of the Somali shilling on the Arabian and Italian markets. There is also some progress in diversifying the agricultural sector by establishing new grapefruit plantations. An important step forward in order to be able to decrease sugar imports is the opening of the Juba Sugar Complex.

#### Major problems of present agriculture in Somalia

This short overview of the main characteristics of Somali agriculture and the measures taken by the Somali government in order to improve agricultural production has already pointed to many problems facing agricultural development in Somalia. Of the manifold problems I should like to discuss only the most important.

The principal causes hindering agricultural development in both, irrigation and rainfed farming, are physical-geographical factors, and, in particular, problems resulting from the present socio-economic and political conditions.

#### Physical-geographical factors

1. Low and irregular rainfall resulting often in low yields and even in complete harvest failures. Mainly rainfed based agriculture suffers extremely from the uncertain amount of available precipitation.
2. On the other hand it happens rather often that heavy rainfall in the regions on the upper courses of the Juba and Shabelle leads to uncontrolled flooding of the river flood plains, resulting in enormous destruction of fields, irrigation channels, harvests, settlements etc. Only barrages, like the planned Badhera dam or weirs with link

canals to huge water storage facilities, like those near Jowhar, can help to avoid such destruction. With such storage facilities controlled flooding of the desheks and better possibilities for the irrigation in the large agricultural projects would be possible.

3. A high rate of evaporation supports the accumulation of minerals in the soil and causes severe salinity problems on agricultural land. Salinity is aggravated by bad drainage facilities in some of the large irrigation projects, e.g. in the Jowhar Sugar Complex.
4. Soil erosion by wind and water, mainly in areas of rain-fed agriculture, leads to great losses of fertile soil. Particularly in the drier central, northern and north-eastern parts of Somalia, soil erosion is more obvious than in the south, resulting from the destruction of the vegetation cover by overgrazing, from cutting bushes and trees for enclosures, and from digging a network of small ditches for the collection of additional sheet-flood water for fields and cisterns (berkeeds).
5. Plant diseases, insects and especially birds cause heavy harvest losses, particularly in grain production. New methods of bird-control should be introduced.
6. High losses of grain to pests and vine-mildew, also result from inadequate storage facilities, both, the underground pits of the farmers and the large storage buildings of the ADC. Other kinds of storage systems should be introduced.

#### Socio-economic and political factors

1. The fact that according to pastoral tradition stock-keeping has a much higher prestige than farming, makes it very difficult to convince nomads to settle as farmers or to become labourers on the large irrigation farms.
2. The enormous lack of manpower is one of the key problems.

The relatively low prestige of farming amongst the nomadic population, together with the high migration of manpower attracted by high wages and favourable working conditions in Mogadishu and the oil-producing Arabian countries, is another reason for the enormous lack of skilled and unskilled male farm labourers and managerial staff, needed in the large irrigation projects of the Juba and Shabelle Valleys. An increasing tendency that women and children replace the male labourers can be observed. In the nomadic agricultural settlements of Kurtunwarey and Sablaale only a small percentage of men are present. In the irrigation projects of the lower Juba region the largest part of the labourforce is recruited of the nomadic settlements. These jobs give the women more independence from their husbands, a fact which is disliked by the majority of men and causes a lot of problems within the families.

3. The lack of sufficient social and technical infrastructure and non-agricultural possibilities of income in the rural areas of Somalia support the emigration process from the peasant-nomadic living space.
4. The majority of the Somali farmers possess only a small farm and produce at a very low level of productivity and have nearly no cash income. Since their yields are very small they predominantly produce for themselves. Therefore their contribution to food supply for the urban population is low and the government is obliged to import large quantities of basic food.
5. The large number of state and parastate institutions involved in development planning in the rural areas is a disadvantage because there is a lack of cooperation and coordination. This fact leads to delays in implementation of projects and involves high costs for administration.
6. Over-ambitious targets and delays in delivery of equip-



ment, spare parts and agricultural inputs seriously affected plan implementation. A very severe problem is the supply of spare parts for the Russian machinery, because all economic relations with the Soviet Union have broken off since their expulsion from Somalia.

7. The development measures launched by the government benefited particularly the large-scale irrigation projects. The small farmers did not benefit from these projects, on the contrary they even lost part of their labour-force to these big farms.
8. Last but not least, the availability of basic data on the physical environment and the socio-economic conditions is the most important pre-requisite for a reasonable development planning. These data are incomplete or non-existent for large parts of the country.

#### Conclusions and some proposals for future development in rural Somalia

After this brief and rough overview of the structure and problems of Somali agriculture I should like to try to give an answer to the two questions that I presented at the beginning by making some proposals for future development.

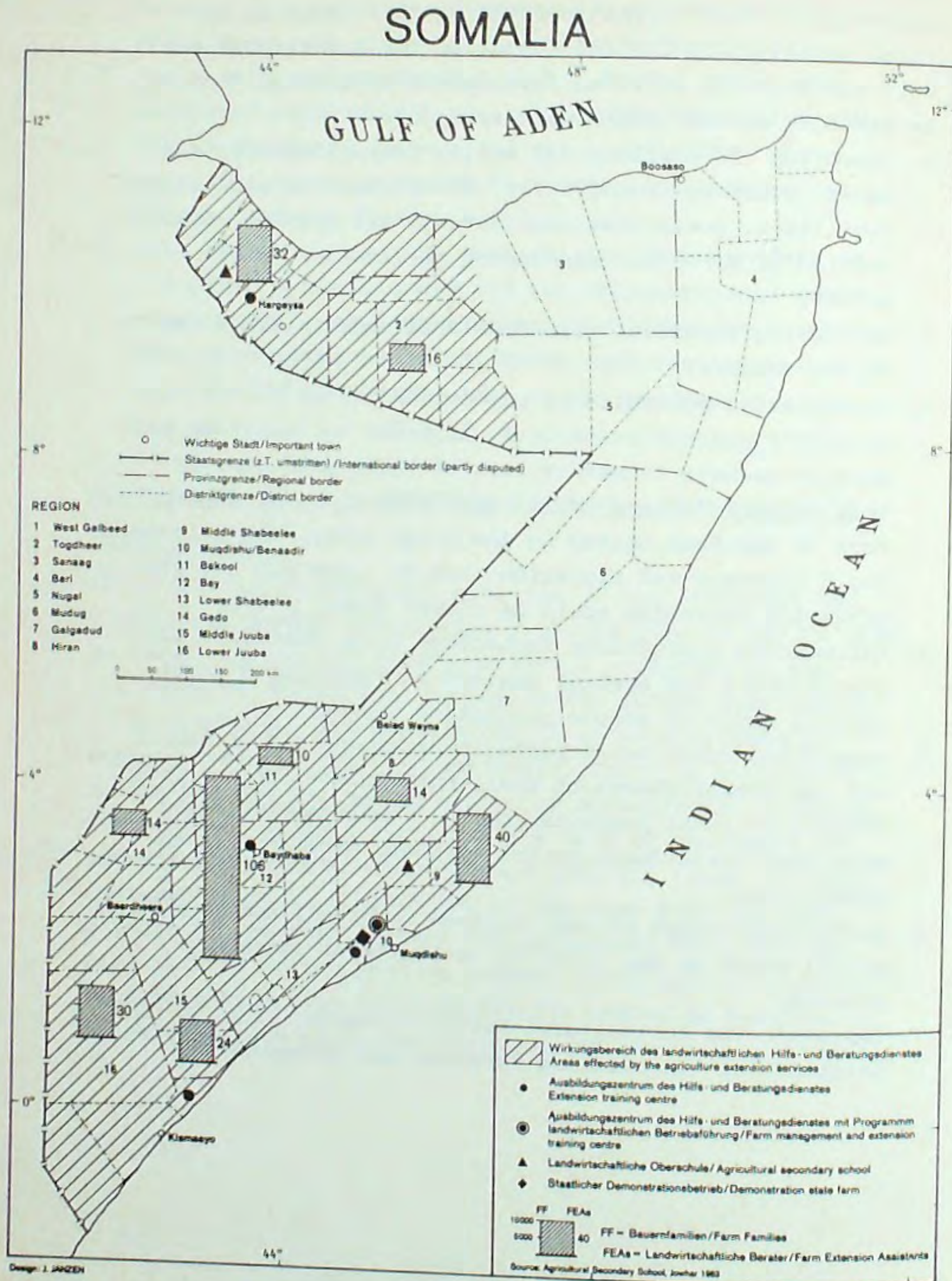
We have seen that Somalia has to solve a variety of problems before attaining self-sufficiency in basic food production and increasing export of agricultural products. Furthermore, it is a fact that the bulk of the money for investments in agriculture flowed into the large new agricultural irrigation projects. At the same time the agriculture of the smallholders was neglected. They work the largest part of the land at present under cultivation and produce most of the basic foodstuffs needed in Somalia. A prime objective of future agricultural development should

therefore be to give special attention to the smallholders.

In order to ameliorate the economic and living conditions especially of the majority of the small farmers in the rural areas of Somalia and stimulate self-confidence and self-sufficiency, existing development initiatives should be extended and new measures introduced:

- I. Improving the physical and social infrastructure (e.g. construction of roads, wells, water channels and storage facilities, power stations, schools and clinics, introduction of a mobile jeep-doctor service for remote areas);
2. increasing financial resources available as small credits to the farmers;
3. assimilating agricultural production prices to the country's average price level in order to stimulate subsistent farmers to market part of their products. By this measure farmers could contribute a higher percentage of the food needed in the urban areas, their income would increase and migration towards towns and the oil-producing countries could be slowed down;
4. introducing appropriate technology (e.g. windmills to supply water and energy) instead of complicated machinery in order to reduce production costs;
5. supporting rural handicrafts in workshops and at home and the establishment of small enterprises for the processing of local products for the Somali market would have positive effects on the economic situation in the rural areas.
6. increasing output of well-trained technical and managerial staff on the level of agricultural secondary schools.
7. improving the Agricultural Extension Agency (fig. 5) by intensifying the existing services and extending the

Figure 5. Distribution and facilities of the Agricultural Extension Services (1983)



material assistance and education programmes to the more remote areas for the benefit of the smallholders and semi-nomads (e.g. the introduction of better production techniques, seeds, irrigation and drainage systems, credit facilities, the reasonable use of artificial fertilizers and pesticides, and the establishment of small-scale training facilities;

8. ameliorating the maintenance of farm machinery by employing more and better qualified mechanics and supplying more spare parts;
9. providing water facilities for the farmers and especially for the semi-nomadic population at a greater distance from their settlements according to their traditional migration pattern in order to prevent overgrazing at the outskirts of the settlements;
- IO. stopping any kind of organized sedentarization of nomads in agricultural projects. The disappointing results of Kurtunwarey, Sablaale and Djujuma should be a warning. Instead of settling nomads, sufficient facilities (water, education, health, etc.) should be provided to the pastoralists according to their traditional spatial pattern of migration;
- II. for agricultural development to advance successfully much basic research in all fields has to be done. Research not only in natural sciences but also in social sciences, like economic and social geography, sociology, ethnology/anthropology, etc. are an important pre-condition for the creation of a solid data basis for future development planning, the prevention of severe planning mistakes and the maintenance of the fragile ecological balance of the environment, typical for large parts of Somalia.
- I2. nation-wide development programmes in rural Somalia should be planned and implemented according to the real needs of the majority of the rural population. Large-

scale agricultural projects should not play the main role. And in areas where such large projects are being established, like in the Juba Valley, development planning should be done in close cooperation with the local farmers and nomads in order to prevent future conflicts between them on the one side and the new settlers and government officials on the other.

For the period of the present FYDP (1982 - 1986) considerable funds have been designated for the improvement of crop production (723.4 million SoSh) and irrigation schemes (4036 million SoSh), i.e. 4.4% or 24.8% respectively of the total development budget.

It remains to be hoped that at least a significant part of this money will be employed within the framework of the proposals and that by this a better integration of the smallholders and semi-nomads within the nation-wide process of development may be attained, for the benefit of the rural population and the Somali economy.

#### FOOTNOTES

- <sup>I</sup> In this article the livestock sector is neglected and the term 'agriculture' is used in the sense of crop production under rainfed and irrigated conditions. The paper is based on two periods of research work in Somalia in spring 1982 and 1983. The statistical data are taken from the reports listed below.

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