Settlement patterns and rural development: a human geographical study of the Kaonde, Kasempa District, Zambia

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CHAPTER 5

FARMERS' SETTLEMENT SCHEMES AND AGRICULTURAL COMMERCIALISATION

'Bakila mwandalo, kechi bakila jiwi ne'
You can step over a log, but not over a word
(Don't ignore good advice, listen when you are rebuked.)

5.1. SOUTHEAST KASEMPA: A DEVELOPMENT ZONE

5.1. General

This chapter is concerned with two farmers' settlement schemes which were set up in the southeast of Kasempa in the 1970's. A contribution to the rural development of the district through the relocating on a voluntary basis of small family units at these agricultural projects was and still is intended. The primary purpose is to turn subsistence farmers into sedentary small-scale commercial farmers.

Before evaluating these projects, a few general remarks will be made about farmers' settlement schemes in Africa. Overview studies have been made on farmers' settlement schemes and agricultural commercialisation south of the Sahara (a.o. Chambers 1969; Knight 1976; Hinderink 1979). Settlement schemes were seen as a method of advancing rural development in a quick tempo by national governments. Improvement of farming methods by farmers already for the market producing as well as transforming subsistence farmers into small commercial farmers were the objectives of various schemes. In these projects spatial rearrangement of farm plots or resettlement of population go together with government investments, supervision, and intensive agricultural guidance. It was often assumed that large-scale and capital intensive projects would advance the commercial-
isation of farmers at a rapid tempo and would be a stimulus to the surrounding area by functioning as an example. The opposite, though, was often the case and the limitations of settlement schemes as a development technique have been shown as well as the very limited diffusion which spreads from these projects onto the surrounding region (Berry 1976; Pogge 1977; Siddle 1971; Schultz 1976).

Other studies note a resulting spatial inequality within a region, which is created by giving attention to a specific scheme only, and note the lack of coordination between various projects and schemes in a region (Hinderink 1973). This does not mean, though, that all settlement projects are doomed to failure. There are certainly examples of large projects that are still on-going, and with relative success, such as Garira in the Sudan and Masa in Kenya (Chamberlin 1969, 1973). But in particular, smaller projects appear most viable in cases where settling individual farming families is primary, accompanied by a large degree of freedom with regard to farming activities. As Chambers (1976) says: 'The most independent and active settlers are generally found where there is least scheme'.

It can be suggested that setting prerequisites is more important than strict planning and regulations.

Moreover, the development dilemma is present of whether or not government action should be directed in the first place at those regions or groups where the economic prospect is the most favourable, and where an economic 'take off' situation has already been achieved ('betting on the strong'), or if the effort should be used on the most under-developed regions and poorest elevation groups. The projects included in the last, where are mainly also those where a total transformation is a necessity and which are situated in areas having unattractive agricultural and economic possibilities. Projects of this type are the most difficult to implement and a much greater risk in obtaining successful results is involved. Thus, it is incorrect to place expectations too high or to expect quick results in these types of projects.

Settlement projects receive a good deal of attention from government planners, development institutions, as well as
researchers. They offer the administration a possibility of setting clear goals and to realise policy aims such as extending equal opportunities to all participants and planning to avoid unequal growth patterns. For the planners, it is a challenge to plan in an orderly way, to realise visibility, and to strive for systemisation and organisation in all community aspects. Foreign aid organisations are eager to be involved in overseeable programmes for which a cost and achievement analysis can be formulated.

For researchers as well, settlement schemes are an interesting subject, because they have circumscribed boundaries and central organisations; in these organisations much data is available especially in the area of economic results. This data can be combined with information gathered from social and other spheres and evaluation can regularly take place.

Critical reports on negative side-effects too often lead to hasty administrative modifications or termination of the project, although continuation and (gradual) alteration would have been advisable. In this respect Chambers (1969) stresses the importance of continuity of policy and continuity of the staff at a project.

The policy in Zambia has been changeable in regard to the settlement and resettlement of the farming population. There has never been a particular ideological standpoint that has been politically implemented such as Tanzania's Ujamaa policy which on the one hand is advantageous as there has been no forced dogmatic view, but on the other hand means that policy has altered greatly and plans have been tried for a short period and are then replaced at the appearance of the first difficulties and shortcomings.

Under the auspices of the Department of Agriculture various settlement plans were initiated (Schultz 1976). While a policy was set for large-scale projects soon after independence in 1964 (cf. previous chapter) and toward the creation of cooperative work as much as possible, by the end of the 1960's, the accent had already shifted to attention for smaller schemes. A successful example of settling small farming families on an individual basis in Zambia is the
well-known 'Family Farms' project in the Southern Province. The farmer here has a large degree of independance, and according to his capacity he is allotted a larger or smaller plot and services are accorded to him based on his individual situation (Farrington 1977).

In the Second National Development (SNDP, 1972-1976), it was suggested that a policy should be formulated for 'Intensive Development Zones' (IDZ). Settlement projects would then be a part of these zones. Preference was given especially to those areas having a good agricultural potential, an adequate population density, and eventual possibilities for agro-industrial development. The question remained open as to the manner in which development should be encouraged outside these zones.

Political discussions at a national and local level concerning equal development possibilities for everyone and the prevention of spatial inequality were the reasons for discontinuation of this approach. Only in two provinces, the Northern and Eastern Province, was a start made with implementation of such zones (Chilczuk 1979).

The Third National Development Plan (TNDP, 1979-1983) proposes a hierarchical service centre policy, whereby in addition to higher centres (provincial and district capitals), a large number of small development cores, so-called village development centres dispersed over each district, would stimulate rural development over wide areas.

While national politics were changeable, it can be observed that in Kasempa District, a constant policy has been followed in the 1970's. In regard to the settlement projects, both continuity of local agrarian planning staff over the years as well as success with settling and training of participants at the farmers' settlement schemes helped to promote this.

5.1.2. Settlement schemes in Southeast Kasempa

Already by 1969, it was suggested that a regional development plan be formulated for the district in order to direct policy in the first place to areas having good chances for development (Jaeger 1969). After a soil survey had been
carried out in 1971, a plan was made for developing the southeastern part of the district and for establishing a number of settlement projects in that region. The possibility that this area of Kasempa District would be a designated 'Intensive Development Zone' was not subsequently realised because of above mentioned changes in policy at a national level. However, settlement projects were carried out in one region in phases by the staff and through financing of the Department of Agriculture and with the help of Dutch agriculturalist volunteers.

The project aims are (Project Initiation Proforma 1976 (ref.H2), Berendsen 1978):

1. To promote agricultural production in a more intensive way for small producers

2. To create facilities which enable the local population to become self sufficient

3. To increase the individual farmer's income resulting in a better standard of living

4. To settle the local population permanently, which will facilitate the provision of the necessary infrastructure.

Planning took place first of all from an agricultural-technical perspective, with an emphasis on advancing the production of the main market cash crop: maize. It was left to the initiative of other departments to plan and implement services such as education, medical care, community development, etc.

The settlement plans include the following components:

a) situating farms on the higher lying, fertile red clay soils (Cl soils). The centres are the Mpungu and Nkenyauna projects which started in 1972 and 1973 respectively. Further expansion is planned from these centres, to the sections Kanjibiji and Kabusenga (fig.5.1). The plotted farmssteads vary in size from 10 to 25 ha., dependant on local soil circumstances. A few large (ca. 50 ha.) farms are projected at the Soda section, for those farmers capable of practising larger-scale farming. The main crops are those which can grow in the rainy season such as maize, beans, potatoes, and sunflowers.
FIG. 5.1
SOUTH EAST KASEMPA - FARMERS SETTLEMENT SCHEMES

1. Nkenyauna scheme
2. Kanjibiji section
3. Kabukafu cattle unit
4. Kabusenga section
5. Soda section
6. Lubofu section (irrigation)
7. Mpungu scheme

c  clinic
s  school
FTC  Farmers Training Centre
o  hand-waterpump
b) an irrigation project (Lubofu section) for farms of ca. 5 ha. which can be intensively cultivated with irrigated crops such as vegetables and rice.

c) a cattle breeding unit (Kabukafu). It is planned that livestock raised here will be delivered to the settlers. Oxen will be delivered for traction purposes and the farmers will be trained in their use. Livestock will also be raised for supplying meat to the district.

The total scheme area is 220 km$^2$ and the intention is that at the least in total 300 farm families will be settled at the various sections.

The following activities are being carried out by the government:
- soil survey and demarcation of suitable plots
- constructing roads to the settlement project as well as within it
- watersupply, through installation of boreholes or hand pumps
- clearing 2 ha. of forest per farmstead
- ploughing this land without cost for the settlers in the first year
- intensive training of the farmers through presence of a staff of agricultural experts per project.

In the following, it is not possible to discuss all projects and their intended interrelationships. Developments are moreover still in an early stage. Discussed in the next two sections are the already operating Mpungu and Nkenyauna projects. After a review of the internal organisation and production results, attention will be given to the migration and settlement of the new farmers, economic results, and problems connected with the spatial design of the projects.

5.2. THE MPUNGU FARMERS' SETTLEMENT SCHEME

5.2.1. Organisation and production

When President Kaunda visited Kasempa District in May 1968, he announced in a speech at the Mpungu State Farm that the production unit would be turned over into the hands of the local population and that individual farmers would be given the opportunity to locate on land already cleared by the
state. Soon a limited number of small parcels of land were allotted to State Farm workers and villagers from the vicinity. From 1969 to 1971, the state production unit continued its operations, at the same time delivering agricultural mechanical services to the individually-established farmers. In 1972, the state production unit was definitively discontinued and a plan was worked out for dividing the whole cleared area into farming plots of ca. 10 ha. for individual farmers. The Department of Agriculture was responsible for the project and allocated the daily supervision to a volunteer worker from the Netherlands. The farmers were selected by the local Department of Agriculture, together with the Kasempa Rural Council and a representative of the UNIP (United National Independence Party). The land assigned to the settlers was not registered under the name of the occupant, who therefore received no formal title to the land. In this respect, a close resemblance exists to the more traditional land tenure system. The settlement area was made available to the government by Chief Kasempa, as it is his traditional territory. The farm plots are given out to the new occupants as long as they actually live there and make use of the land. If these obligations are not met the farm plot can in principle be allotted to somebody else. When somebody leaves, those improvements of the farm plot which have been made, such as buildings, are reimbursed by the project and charged to the next occupant. If someone dies, his heirs are entitled to propose a new occupant. This candidate then needs the approval of the project management and the farmers' committee.

Considering the organisational aspects of the scheme we can follow a division given by Chambers (1969, 232) of the organisation of agricultural settlement projects in general:

A - Individual holding schemes
B - Compulsory marketing schemes
C - Scheduled production schemes
D - Communal economy schemes

The central control on which the farmer is dependent increases in the order of above types. Especially in the beginning, the Mpungu project belonged to type C. The farmers received their
own plot but most activities such as crop plan, seasonal credit, mechanical support, and marketing were centralised. Initially, the fields were also situated adjacent to each other to make a system of 'block farming' possible. But from the start the scheme was not a communal production unit.

In following years the scheme changed in the direction of a type A scheme. Farmers were more and more allowed to determine by themselves the crops and acreage to be brought under cultivation. If they wished, they were allowed to sell their crops privately. It should be noted, though, that the chance to sell the bulk of the maize crop privately is not easy in the district, due to transport difficulties and the limited local market. Moreover, to obtain a seasonal loan from the credit organisation (AFC - Agricultural Finance Company) the farmer is obliged to sell the yield via the central marketing organisation (Namboard).

Change of farming plots and relocation of farmers on the scheme soon meant that the system of block farming had to be given up. In several years a more loosely organised type of scheme emerged, where individual differences became very noticeable and the main function of the scheme became to deliver services to the individual farmers.

The staff of the project consists of a project manager, two farming instructors, and a few technical workers for mechanical maintenance. The staff was assisted extensively by agricultural experts from the Dutch volunteer organisation. Since 1976, project direction has been entirely in Zambian hands. To give the farmers more responsibility, a cooperative has been set up. Most farmers associated with the project have joined, although membership is not obligatory. The cooperative takes care of tasks previously done by the project leadership such as extending credit, tractor use allocation and so forth 1). The co-op management is comprised of a farmers' committee elected by the farmers. In the committee in addition to some active farmers, leaders from the traditional societal structure as well as leaders of religious movements active on the scheme are represented. Since its formation, farmer participation in the project has intensified and no great friction has arisen. Still, government coordination by a project leader and the agricultural
staff is necessary for dealing directly with problems which may arise and for maintaining good contact with the various governmental bodies on which the farmers are still strongly dependent in many aspects (product marketing, sowing seed and fertilizer delivery, cattle introduction, water supply, etc.).

The most important crop is maize, which is regarded by government agencies as the most suitable market product for the inhabitants and the main staple food which needs to be produced from a national point of view. Production methods are easy to learn and the population was already acquainted with maize as a food crop.

The Mpungu State Farm was the main maize producing unit of the District in the years 1965-1972 and subsequently the farmers at the settlement schemes produced 40 to 60% of the Kasempa District maize production (cf. table 5.1.). With regard to the whole North-Western Province, the Kasempa District is the largest maize producer with 30 to 40% of the production in the province. Production of other products, like groundnuts, soja beans, sunflower, vegetables and fruits, is negligible compared with maize (cf. Appendix VIII). Other districts in the province are more important for those products.
Table 5.1.: Maize Production Kasempa District, 1965-1979

<table>
<thead>
<tr>
<th>Season</th>
<th>Total production (bags of 90 kg)</th>
<th>Production of farmers' settlement schemes</th>
<th>Percentage production schemes of total Kasempa D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1964/65</td>
<td>100</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1965/66</td>
<td>600</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1966/67</td>
<td>2,500 (start production Mpungu State Farm)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1967/68</td>
<td>4,500</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1968/69</td>
<td>3,500</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1969/70</td>
<td>2,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1970/71</td>
<td>9,700</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1971/72</td>
<td>11,500</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1972/73</td>
<td>8,100</td>
<td>3,600</td>
<td>44%</td>
</tr>
<tr>
<td>1973/74</td>
<td>11,200</td>
<td>6,500</td>
<td>60%</td>
</tr>
<tr>
<td>1974/75</td>
<td>13,000</td>
<td>7,500</td>
<td>58%</td>
</tr>
<tr>
<td>1975/76</td>
<td>16,500</td>
<td>9,800</td>
<td>60%</td>
</tr>
<tr>
<td>1976/77</td>
<td>21,500</td>
<td>11,200</td>
<td>52%</td>
</tr>
<tr>
<td>1977/78</td>
<td>11,200</td>
<td>4,300</td>
<td>38%</td>
</tr>
<tr>
<td>1978/79</td>
<td>12,500 (estimate)²</td>
<td>7,000</td>
<td>54%</td>
</tr>
</tbody>
</table>

After the Mpungu State Farm was altered to a settlement scheme for individual farmers, the government continued to strive with the help of mechanical means for a high production output. This approach was connected to the fact that shortly after the country became independent, emphasis was put on mechanisation, which was introduced everywhere, particularly in those areas where the inhabitants were unacquainted with traction by livestock. The tractor became the symbol of rural modernization and cashcrop production also became tied in the inhabitants' opinion to tractors made available by the government. On the scheme the number of processes done by machines, especially in the initial years, is large: ploughing, harrowing, sowing, and in some cases, fertilising. Husking is also done with the help of the tractor's diesel motor. Manual labour is then required for weeding, a second fertilising, and harvesting. The land actually cultivated per farmer is not extensive, and averages 3 ha. Only a limited number of farmers cultivate a
larger area. (During the season 1978/79 2 farmers had 10 ha. under maize and 8 farmers 5 to 9 ha.).

Production per hectare had been reasonable in the first years but decreased in the second part of the 1970's (cf.table 5.2.).

Table 5.2.: Maize production Mpungu project,1972-1979 3)

<table>
<thead>
<tr>
<th>season</th>
<th>total no. of farmers</th>
<th>land brought under cultivation (ha)</th>
<th>land planted with maize (ha)</th>
<th>maize harvest (90 kg) in bags</th>
<th>bags per ha</th>
</tr>
</thead>
<tbody>
<tr>
<td>72/73</td>
<td>33</td>
<td>107</td>
<td>107</td>
<td>3602</td>
<td>37.7</td>
</tr>
<tr>
<td>73/74</td>
<td>39</td>
<td>156</td>
<td>156</td>
<td>6172</td>
<td>39.5</td>
</tr>
<tr>
<td>74/75</td>
<td>61</td>
<td>236</td>
<td>186</td>
<td>6297</td>
<td>33.8</td>
</tr>
<tr>
<td>75/76</td>
<td>84</td>
<td>335</td>
<td>316</td>
<td>7836</td>
<td>27.8</td>
</tr>
<tr>
<td>76/77</td>
<td>93</td>
<td>360</td>
<td>359</td>
<td>9242</td>
<td>25.7</td>
</tr>
<tr>
<td>77/78</td>
<td>83</td>
<td>200</td>
<td>183</td>
<td>3200</td>
<td>17.5</td>
</tr>
<tr>
<td>78/79</td>
<td>78</td>
<td>240</td>
<td>226</td>
<td>5227</td>
<td>23.4</td>
</tr>
</tbody>
</table>

This decrease is even more noticeable as a yield of 50 bags of maize per ha. can be obtained under careful management and a yield of 35 bags per ha. is considered an obtainable average for small farmers.

The causes of this decline and, in general, the primary problems in production at the project are the following:

a) Exclusive sowing of maize. Crop rotation is practically non-existent, which led to a drastic decrease in the soil fertility and to the fields becoming very acid. Other products such as groundnuts, potatoes, sunflowers, and beans, were planted only in small amounts. Moreover, farmers are not eager to cultivate crops such as groundnuts and beans because they are labour intensive and are prone to a highly varying harvest success due to disease, weather conditions, etc. But not all the blame goes to the farmer; obtaining other sowing seed than maize was often not possible through the supply agency at Kasempa.

b) The high degree of mechanisation at the project. Production is very dependent on making use of tractors. There are problems regularly associated with this due to frequent breakdowns and
shortage of spare parts. On the other hand, farmers have become totally adjusted to the availability of the mechanised services. If this is delivered too late in the season, or not at all, fields are not cultivated or only partially. The project emphasis on mechanisation appears then to have been detrimental in motivating the farmers to plough by hand or to be more keen in obtaining oxen. Although in this respect both not being acquainted with keeping live stock and only a very limited availability of oxen also played a major role. At Mpungu only 5 farmers possess oxen and not all of them make use of oxen-traction.

c) The labour motivation of the farmer. Work done by hand, such as weeding, is, in general, not given enough attention. Weed growth increases after the land has been in use for a few years. Only a few farmers spend enough time weeding with the help of their family or piece-workers, hired per day. Also the work connected with fertilising is not always done consistently and harvest tasks are sometimes done haphazardly.

In view of the above problems, introduction of crop rotation deserves careful attention, as well as less dependence on mechanisation and a shift towards oxen-traction. Moreover, the sharp rising prices for the use of tractors mean that the smaller farmers are economically better off with oxen-traction. Such an approach demands a much more intensive management of smaller areas. The acreage for a farm plot to be ploughed by one span of oxen is taken to be about 4-5 ha. (a limit is given here by the fact that ploughing must be done in a fairly short period of some weeks directly after the first rains). A change towards intensive field use as well as motivating the farmer to give regular attention to various crops and live-stock means a long process of direction and training by the project staff. In the conclusion of this chapter I will have a further look at the future scheme planning from this point of view. In the next sections I will first of all deal with the spatial changes that took place at the scheme as well as with the economic differences that emerged within the group of settlers.
5.2.2. Location and relocation of farmers

When the project began as an official settlement scheme in 1972, forty farmers were registered. A few of these never appeared so that the 72/73 season started with 33 farmers. The farm plots were systematically arranged along the main routes on the scheme (cf.fig.5.2 and illustration). The acres allotted to a farmer were situated in the area already cultivated by the state production unit and plots consisted of ca. 5 ha. with the possibility of expanding this to 10 ha. The fields were allotted at random to the new settlers. It was expected that a farmer would build his house on his plot and after first building a mud hut, this would be replaced by a structure of Kimberley brick. Watertaps were installed per 4 units along the road. The water supply was regulated for the farmers by means of a borehole near the centre of the project. The size of the resettled families was not large — averaging 7.8 people (generally, husband and wife, children and a couple of direct relatives). The project managers discouraged the settlement of larger family groups by putting emphasis on registering nuclear farm families and, in principle, prohibiting other family members from settling on the farms.

The project expanded considerably in 1974 and 1975 by reallocating the fields of farmers in an adjacent area. These farmers had, for some years, formed an agricultural cooperative (cf.3.2.5.). Inclusion in the project meant that these farmers were guaranteed regular agricultural assistance and tractor service. This expansion led to no difficulties since the farmers could remain settled in their villages and at the same time be part of the project. Further project expansion occurred along the southern edge of the scheme and in a northern direction (Kabusenga section). Although there was little propaganda, new arrivals from the region began moving to the scheme. Table 5.2. shows the increase of the number of farmers during the 1970's.

Participants can be divided into two groups of farmers: those permanently located at their farm, and a large group (ca.40%) which is not. The last group are primarily those farmers mentioned above, who took part in the former
cooperative and remained in their original villages (a.o. village Kiboko), having their fields some distance away.

In October 1978, I carried out an inquiry among the farmers who actually lived on or near their farm plot (excluding those settled on the extension Kabusenga section). Information was gathered about: age, education, work period in town, religion, clan, family composition at farm, other relatives at the scheme, previous location, reasons for settling at the scheme, and reasons of leaving the former village. Table 5.3. gives the place of origin of the 43 farmers who settled at the project during 1972-1977.

Table 5.3.: Village of Origin of Farmers at Mpungu

<table>
<thead>
<tr>
<th>Village Cluster</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Mumbwa village cluster</td>
<td>14</td>
</tr>
<tr>
<td>(originally located by Kataboya stream later along Kelongwa road and near the State Farm) (distance from the scheme 2 to 10 km.)</td>
<td></td>
</tr>
<tr>
<td>2. Lubofu village cluster</td>
<td>8</td>
</tr>
<tr>
<td>(situated by Lubofu stream)</td>
<td></td>
</tr>
<tr>
<td>(distance from the scheme 5 to 10 km.)</td>
<td></td>
</tr>
<tr>
<td>3. Kelongwa and surroundings</td>
<td>10</td>
</tr>
<tr>
<td>(particularly from around Kataboya stream region) (distance from the scheme 20-30 km.)</td>
<td></td>
</tr>
<tr>
<td>4. Various places Kasempa District</td>
<td>8</td>
</tr>
<tr>
<td>5. Other districts</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>43</td>
</tr>
</tbody>
</table>

Most of the farmers have come from village clusters in the vicinity of the project (i.e. 1, 2, 3: Table 5.3.). They migrated in small family units. Sometimes other kin members joined in course of time, although as noted, this was discouraged by the project management and this has not proved a major problem since Kaonde villages, as we have seen, have the tendency to fall apart into small family units. Additions to the settled farmers were usually single relatives or broken families, a divorced sister or daughter with her children. Regular changes in the composition of the relatives on the farms can be observed, too, which are comparable to those discussed in the chapter on the Kaonde villages (Chpt. 3.2.4.).

The origin of the farmers is relatively homogeneous: many
are related, and the majority of the farmers belong to two clans, namely the Bena Kyowa and the Basamba (cf. Appendix V). The majority of villagers from the Lubofu village cluster are of the Bena Kyowa clan, and the members of the Mumbwa village cluster belong mainly to the Basamba clan. Extensive marriage exchange occurred between these two clans in the past. Despite the homogeneity of origin and high degree of kinship affiliation, this does not mean that the project participants can be considered to form one large village. They all live in small family units and the appearance of most of the farms closely resemble the ordinary small Kaonde village. At first the settlers were located along the two main roads through the middle of the scheme and near to the water taps. After some years considerable changes occurred and many settlers relocated. These relocations occurred in particular along lines of origin.

The manner by which the settlement pattern has changed over a few years can be summarised as follows. The group of 33 farmers which located at the project in 1972 will now be considered. Of this group only 3 farmers left the scheme. Three died and, as of 1978, it was not yet known who would take over these farms. There were many location changes among the remaining 27 farmers. About half of them changed their site of residence and/or farm plot between 1972 and 1978:

7 farmers moved to another plot at the project
2 farmers had plans for doing this in 1979
2 farmers no longer lived near their plots but had moved elsewhere within the project area
4 farmers temporarily moved away because of sickness, conflicts with neighbours, or work elsewhere.

Most of these changes were connected with farmers who asked for different plots due to soil fertility depletion. The State Farm had grown maize for several years without crop rotation, and this practice was continued by the farmers and resulted in the previously mentioned soil depletion and decreased harvests. Being accustomed to changing field location under a shifting cultivation system, farmers requested another plot and were usually given permission to relocate. The project management agreed with the argument that they had been placed
Fig. 5.2 Mpungu farmers' settlement scheme, 1978

- scheme centre
- borehole + watertank
- tractor station
- road
- water tap
- farmhouse (kimberly brick)
- farmhouse (mud hut)
- NP farmer not present
- M farmer moved to other plot site
- L farmer left scheme
- † farmer died
- I-IV social group

- approx. area under maize 1978

0 200 m.
on used, worn-out land.

In a number of cases where it was possible to expand the initially assigned plot by bringing adjacent areas under cultivation, a new plot was still requested elsewhere in the project area. It is remarkable that several farmers who were originally settled along the main route and near a water tap moved to sites farther away from the centre and no longer in the vicinity of a water tap (whereby it must be noted that the pumped water supply caused much trouble and farmers regularly had to collect water from streams farther away).

In fact, settlers gradually re-arranged themselves when the possibility existed of settling near relatives also living at the project. The systematic pattern projected by the scheme planners was broken up and a pattern of a number of related 'village groups' became evident. A pattern resembling the traditional settlement pattern emerged.

Preference was also given to living on the edge of the forest, rather than in the middle of the open, cleared fields because of the advantages of shadow, protection against rain and lightning, and the immediate availability of firewood.

The following resident groups could be observed at the scheme in 1978 (cf. fig. 5.2):

I) In the south corner of the scheme, a cluster of farmers settled who, with one exception, all belong to the Mumbwa village cluster (cf. tab. 5.3., no. 1). They are primarily Basamba clan members and are closely related. It is noteworthy that most are members of the Jehovah's Witnesses Church, although they don't have important positions in it. The farmers located along or near to an existing track and rely on a nearby stream for their water supply.

II) Another group which formed along the western edge of the project is primarily from the Kelongwa area (cf. tab. 5.4., no. 3). Some other farmers originally located there moved to join the above mentioned group I.

III) A third group consists of farmers originating mainly from the Lubofu village cluster of Kiboko, especially from
villages which were a result of the fissioning of the village Kiboko. They belong mainly to the Bena Kyowa clan. The majority of the group belongs to the Evangelical Church of Zambia (ECZ). Most of the Jehovah's Witnesses (J.W.) have moved away, or are planning to move from this location.

IV) Finally, a core of the Jehovah's Witnesses' leaders, who first lived in the centre of the project area, have relocated and now form their own separate settlement, somewhat outside the centre of the scheme.

This settlement site is growing into a full village, much in character with the traditional Kaonde village. The ambition and authority of the headman, who split off from a well-known Kaonde village (Kilondo) and who is also an active J.W. church leader, attracted other kin to join him. Also of note is that in the vicinity of this village, just outside the boundary of the project, a number of small villages have grown up where other relatives and members of the J.W. church live, who do not take part in the scheme. A new village cluster is thus forming in a manner consistent with past Kaonde village cluster formation: one village is situated at a location appearing favourable; the village attains status, is well supervised and as such attracts other relatives, who locate in the immediate vicinity.

It can be concluded that elements stemming from traditional customs of mobility, as discussed in Chapter 3, are at work at the scheme. When crop results diminish, the answer is found in shifting the plot by clearing another forest plot elsewhere. For social reasons a location is preferred near kin relations and/or members of the same religious affiliation. The systematic planning of the project lay-out is disregarded and a pattern more acceptable to the inhabitants has grown. These movements, moreover, were possible because the majority of the farmers had not built permanent houses at their plot site. Though in the first years very much encouraged by the project management to build a Kimberley brick dwelling, few farmers actually did. Since the above relocations on the project, it can be observed that more people started to build a Kimberley brick house. Not so much economic means as well as feelings of social security seem to play a part in the decision to build a more permanent house.
5.2.3. Economic differentiation

The economic results will be briefly described for the farmers at the scheme. It is striking that, in a short period, considerable economic differentiation has grown through participation in the cash economy. Table 5.4. gives a classification of the Mpungu farmers divided into a number of income groups based on the net results as calculated by the project management for the 1975 to 1977 seasons. A division can be made into the following net income groups:

I  no income, e.g. loss and consequently indebted to the credit organisation.

II  0-200 K(wacha) - an income that must be regarded as marginal and is below the minimum income for an unskilled farm labourer (K.216 in 1975, Bessell 1976,25).

III 200-400 K. - this group can be roughly correlated to the average wage earners in Zambia. The cash income is still under the minimum, but because the farmers have their own food resources available minimum standards are reached. The ILO sets the household minimum income in cash or kind at K.480 per year in 1974, which comes to K.105 per person (ILO 1977,58). According to the ILO, for rural households producing largely their own food at least 25% has to be in cash, which comes to K.25 per person. Taking into account an average family size at the farms of 8 people, per farmstead a minimum of at least K.200 is required.

IV  400-1000 K. - By Zambian standards, this is a reasonable income; more so, because farm products are available.

V  above 1000 K. - those of this group can be considered to have a good income.
Table 5.4.: Income group classification Mpungu Farmers 1975-'77

<table>
<thead>
<tr>
<th>Category</th>
<th>I</th>
<th>II</th>
<th>III</th>
<th>IV</th>
<th>V</th>
<th>total number of farmers</th>
<th>% farmers under the minimum (category I and II)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>loss K.0-200</td>
<td>K.200-400</td>
<td>K.400-1000</td>
<td>above K.1000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>74/75</td>
<td>12</td>
<td>14</td>
<td>15</td>
<td>12</td>
<td>3</td>
<td>56</td>
<td>46%</td>
</tr>
<tr>
<td>75/76</td>
<td>4</td>
<td>26</td>
<td>19</td>
<td>30</td>
<td>3</td>
<td>82</td>
<td>37%</td>
</tr>
<tr>
<td>76/77</td>
<td>12</td>
<td>25</td>
<td>18</td>
<td>27</td>
<td>5</td>
<td>87</td>
<td>43%</td>
</tr>
</tbody>
</table>

It appears from this that ca. 40% of the farmers belong to group I and II. They must be considered as a marginal category. However, this project result is not regarded as being totally unsatisfactory by the project management and the Department of Agriculture since, after some years, more than half of the farmers have an income equal to and in many cases higher than that of the average Zambian urban worker. Moreover, this is a reasonable result since it concerns villagers who had never before produced for the market, and who were not acquainted with modern farming methods.

It is remarkable, however, that in a short period a considerable difference has arisen between farmers with a very good and those with practically no income. This pattern became evident within 2-3 years time: farmers with poor results in the beginning, in general remain in the lower category while those with good results retain these. There were some fluctuations over the years by which a farmer changed to a higher income category or fell back into a lower category, but changes of more than one category were scarce. This indicates that after just a few years the income classification of the farmers had consolidated. There now exists a small group of fairly well-to-do farmers and a large no-income or marginal income group. With regard to the Mpungu project, this is even more remarkable since all the farmers come from the same region and have the same background. They all began at the project without any capital and received equal possibilities and attention from the project management. Briefly I will deal
with some variables which might influence the differences in farmers' results. Based on a survey of farmers in Mumbwa and Katete District, Vanzetti and Bessell (1974) relate motivation, adoption of new techniques and farm results to personal characteristics such as formal education, farm-experience, cosmopolitan experience. This last category includes experience in urban or rural employment, attendance at community development meetings, church meetings, adult literacy classes, etc. With differences for the Mumbwa and Katete situation the above factors are in varying degrees of influence on the motivation of the villagers, and through motivation on adoption of modern methods and farm results. In general they conclude that: "any means of making cultivators more aware of the modern society will contribute to motivation and so to development" (Vanzetti 1974,53).

In the following I will briefly look at factors such as age, work experience in urban areas, education, and religious affiliation, which might have contributed to farming success at Mpungu.

In table 5.5, the above personal characteristics are compared with farm results in the 76/77 season. That season was a good harvest year with a good availability of services. Farmers are divided over three categories, a group with no or a marginal income (income groups I and II, table 5.4.), a middle group (income group III) and a group with a fair to good income (group IV + V). The survey is given here as a rough indication of influential variables. It does not pretend to be a full-scale analysis of why certain farmers do better than others. In that case much more detailed research is required over a longer period of time and with statistical analysis of larger numbers.

a) Age
The average age of the farmers is fairly high: 52 years, with a range from 29 to 68 years. If 40 years is arbitrarily taken as a dividing line, the table shows that among the more successful farmers people of forty and over are strongly represented. As has already been noticed, older people change less from village to village, have had their period of work in town and might be more inclined to start on farming activities. As older people, they more often have grown-up children and
Table 5.5: Farm results Mpungu farmers season 76/77 relative to age, work experience, schooling and religious affiliation.

<table>
<thead>
<tr>
<th>Net income:</th>
<th>Marginal (group I and II)</th>
<th>Middle (group III)</th>
<th>Fair to good (group IV and V)</th>
<th>Total no. farmers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;40</td>
<td>4 (33%)</td>
<td>5 (42%)</td>
<td>3 (25%)</td>
<td>12 (100%)</td>
</tr>
<tr>
<td>≥40</td>
<td>10 (32%)</td>
<td>6 (19%)</td>
<td>15 (48%)</td>
<td>31 (100%)</td>
</tr>
<tr>
<td>Work Experience</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employed in town</td>
<td>11 (41%)</td>
<td>6 (15%)</td>
<td>10 (37%)</td>
<td>27 (100%)</td>
</tr>
<tr>
<td>no employment in town</td>
<td>3 (19%)</td>
<td>5 (31%)</td>
<td>8 (50%)</td>
<td>16 (100%)</td>
</tr>
<tr>
<td>Formal Schooling</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lower primary school</td>
<td>4 (20%)</td>
<td>7 (35%)</td>
<td>9 (45%)</td>
<td>20 (100%)</td>
</tr>
<tr>
<td>no schooling</td>
<td>10 (43%)</td>
<td>4 (17%)</td>
<td>9 (39%)</td>
<td>23 (100%)</td>
</tr>
<tr>
<td>Religion</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Christian denomination broken down into:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Evangelical Church of Zambia (ECZ)</td>
<td>4</td>
<td>5</td>
<td>9</td>
<td>18</td>
</tr>
<tr>
<td>Jehovah's Witnesses (JW)</td>
<td>4</td>
<td>3</td>
<td>6</td>
<td>13</td>
</tr>
<tr>
<td>No church affiliation</td>
<td>6 (50%)</td>
<td>3 (25%)</td>
<td>3 (25%)</td>
<td>12 (100%)</td>
</tr>
<tr>
<td>Number of people at farm</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;7</td>
<td>8 (44%)</td>
<td>3 (17%)</td>
<td>7 (39%)</td>
<td>18 (100%)</td>
</tr>
<tr>
<td>≥7</td>
<td>3 (17%)</td>
<td>5 (28%)</td>
<td>10 (55%)</td>
<td>18 (100%)</td>
</tr>
</tbody>
</table>
sometimes a larger family group to make use of at the farm.

b) Urban work experience

Work experience in town does not figure as a very important determinant; even among the farmers with no urban work experience about half belong to the more successful group. It must be noted also that people with town experience were unskilled labourers, most of whom did not stay long in town. That town experience can be of influence depends also on the kind of work done in town and on the time spent in town, as will be shown in chapter 6.

c) Education

The factor of formal schooling also does not show up very clearly, although the farmers with some schooling do a bit better than the ones without any formal education. It must be noted here that the level of education is limited; the farmers who attended school did this only for some years (at the most lower primary school).

That the factors education and town experience do not seem to be very influential and that people without it are also strongly represented in the group of more successful farmers (including some women farmers who farm independently) could indicate that the intensive extension work given by the project management yields success, even when there is no formal schooling or cosmopolitan experience. In this respect it indicates the significance of farm extension work in general. Also of influence may have been that the farmers attended short training courses at the Agricultural Training Centre in Kasempa.

d) Religion

A factor that clearly plays an important part is religious affiliation. On the scheme two Christian denominations are fairly strongly represented, the Evangelical Church of Zambia (ECZ) and the Jehovah's Witnesses (J.W.). People who are affiliated with one of these churches are highly represented among the group of the better farmers. This in contrast to people without church affiliation, of whom 50% belong to the category of marginal farmers. But also in this case religion
is certainly not the only factor. Among Christian churchgoers there are bad farmers and there are some good farmers among the non-church people. But in general religious affiliation indicates an influential factor, as we will notice also among another group of farmers dealt with in chapter 6.

Several studies of Zambian farmers and in general entrepreneurial attitude point to the correlation between membership in a Christian denomination and success in the economic sphere (Allan and Gluckman 1948, Cunnison 1958, Long 1968). Long, in his study 'Social Change and the individual', analyses how especially Jehovah's Witnesses adherents figure strongly among the progressive farmers in Serenje District and he discusses more fully the connection between religious ethics and the process of modernization on individual capitalistic lines. For the southern province the political activities and the progressive attitude of the Seventh Day Adventists Church among the Plateau Tonga is described by Dixon-Fye (1978).

Regarding the religious factor Vanzetti (1974, 51) rightly points to the fact that before independence formal education was mainly given through the Christian churches, so there is a close connection between schooling and religious affiliation. The more progressive attitude and better economic performance of people with a church background therefore can be as much attributed to schooling as well as Christian ethics and morals. Lewellen (1978), on quite another continent, points to the Peruvian Aymara Indians and calls attention to the important role Seventh Day Adventists play there in aspects of modernization. He comes to the conclusion that the role education played in the activities of that mission has been of the most essential importance.

In case of the Mpungu farmers formal schooling, either by mission or government, has, however, been very minor. In former days village schools in the district were run by the ECZ mission but in the more peripheral areas on a very small scale and the Jehovah's Witnesses had no formal schools at all. Of more importance are certainly the informal educational activities of the church. In church activities, Bible lessons
often go together with literacy classes and broadening of general knowledge. At Mpungu for instance J.W. members meet regularly during the week for these activities. In general it can be said that by participating in these church activities a general attitude of enlarging knowledge is promoted and of directing activities to certain goals outside the scope of daily village life such as preaching, bringing together money for building a church, etc. Moreover, the morale of both religious affiliations discussed here opposes, in principle, drinking and smoking. It is observed that the staunchest members and leaders of the religious groups at the scheme take a less active role in the many beer parties which take place during the dry season. It may be concluded that religious ethics together with the broadening of general knowledge that goes together with active church participation plays a major role in the economic results obtained by the farmers.

e) **Labour input**

Finally, a word about family labour input and the employment of extra workers on the farm, as this too plays a role in farm results. As noted the farms are small and have an average of 7.8 inhabitants. In general, these comprise the elementary family household of men, wife, and some children, together with some matri- or patrilineal relatives. These last are, for example, unmarried or divorced daughters with children, or brother or sister, or the parents of the farmer or his wife. Table 5.5. indicates that the number of people at the farm is of some importance for farm results. Farms with seven or more people do relatively better than the smaller ones. A larger family group at the farm gives the farmer a broader recruitment base for help. Although it must be noted that the composition of relatives at a farm varies regularly and, moreover, not all people at the farm always participate actively in the cash crop farming (cf. also farmers' cases, Appendix XII). Older relatives at a farm do have their own subsistence gardens and younger people are eager to find (temporary) paid work at the project or elsewhere.
In the first place, therefore, a farm's success is connected to the motivation of the farmer himself to work intensively on his land, doing not only the traditional tasks of felling trees and clearing the field, but also activities such as weeding and harvesting. These last were traditionally the tasks of women and children, especially weeding. With shifting cultivation, weeding was less important, since when weeds began to take over, the field was simply moved. With permanent field use weeding becomes a very primary activity. It is impossible for the wife and children to weed the larger fields alone. The man therefore must help with tasks traditionally not his. Especially in the first years of establishing a farm both the men's as well as the women's labour input is of essential importance. Also in this connection a much closer cooperation in the jobs done by men and women is necessary than previously was the case in village productive relationships. In this respect it must be noted that agricultural extension work on the project and in Zambia in general is geared very one-sidedly to men's activities. Much more attention to the role of women at the scheme and awareness of the crucial role of both men's and women's labour input together seems necessary (cf. Hedlund 1977).

If a woman sees little revenue resulting from her work, because of too little farm assistance from her husband and meagre cash revenues made available to her, her input will correspondingly decrease and she will devote more attention for her subsistence garden.

Aside from the necessary labour input by the women and children connected with the cash crop field, the women also often tend plots where sorghum and millet are cultivated (used particularly for brewing beer) and small gardens for growing sweet potatoes, pumpkins, cassava, etc. Compared to the traditional village situation, the woman's tasks have certainly not diminished by settling at the project.

As soon as a farm begins to be successful to some extent, the general tendency is for the farmer to hire day-labourers. Many farmers at the project use these 'piece-workers' and those achieving economic success begin to be more and more
involved with farm management and less with doing the actual farmwork themselves.

There are also examples of independent women farmers established at the project. Some have become very successful (cf. Appendix XII, case 3). Besides putting considerable labour input in the farm themselves, they expand their concern with the help of hired piece-workers.

Some farmers with good results have embarked on other activities such as opening a small store or buying a grinding machine, being paid for milling other farmers' grain. A small group of farmers is accumulating wealth in this way.

It should be noted, though, that certainly not all farmers re-invest their profits but hoard them, not even opening a savings account at the post office in Kasempa. The reason given for this is that they want to have cash on hand for eventual debts, or compensation payment for possible conflicts, etc.

Among farmers showing the best results a tendency to leave the project can be observed. One of the most successful farmers left the project after the 1978 harvest to start a larger farm elsewhere. Another farmer wished to expand farming activities further. In order to keep this successful woman farmer on the project site, she received permission from the project management for substantially enlarging the farm by bringing an additional plot under cultivation.

To conclude, the Mpungu scheme can be seen to be a success in transforming a group of subsistence villagers into emerging commercial farmers. In that respect it is also remarkable that from a fairly equal economic subsistence base in a short period such obvious economic differences appeared, although the general project policy was attentive to provide equal chances, equal attention and equal plots of land to everyone.

5.3. THE NKENYAUNA FARMERS' SETTLEMENT SCHEME

5.3.1. Organisation and production

The positive experience and the interest shown by villagers for settling at the Mpungu scheme were inducement for beginning another, similar, project in 1973. Since the district policy was aimed at relocating inhabitants nearer to the district centre, a soil survey was carried out in the area 5-20 km. from
Kasempa, between the old and new Mumbwa road. A region was found with good to reasonable red clay soil, (cf. C1 and C2), relatively level, and of a surface area large enough to accommodate an agricultural project. Location near the District Centre and absence of tsetse fly were also favourable factors for settlement. Water supply, though, was problematic because the nearest streams were located a considerable distance away from the chosen site. Subsequently, the new settlers would have to rely on the creation of a water supply through mechanised means. The Department of Agriculture decided that the farm plots would have a size of 20-25 ha. This was not based on specific farm management calculations but more on the reasoning that the settler should have sufficient possibilities in the future for expansion as a commercial farmer. The area's location and the large parcel size gave the project a very extended form and led to large distances (up to 7 km.) between the scheme centre and farms on the outskirts (cf.fig.5.1). The length of the project area and farm plot size are considerably larger than at Mpungu, although the organisational set-up is the same.

In four years (1973-1977) about 60 families received a farm plot at the Nkenyauna scheme (cf.tab.5.6.). The farmers who applied were required to sign a contract by which they were bound to comply with certain measures such as application of a crop rotation schedule, permanent settlement at the project, adequate farm maintenance, and so on. If these rules are not adhered to, a person can be removed from the area. In practice, these requirements proved difficult to enforce consistently. A number of farmers do not live at the scheme. Crop rotation is difficult to implement because of factors already mentioned such as insufficient availability of sowing seeds other than hybrid maize, and less lucrative yields from other crops. The results so far at the project have not been especially good. The average harvest per hectare and income for individual farmers are lower than at Mpungu (cf.tab.5.6.and 5.7.).
Table 5.6.: Maize production: Nkenyauna project 1974-1979

<table>
<thead>
<tr>
<th>Season</th>
<th>Number of Settlers</th>
<th>Number of Farmers with Harvest</th>
<th>Land Planted with Maize (ha)</th>
<th>Maize Harvest in Bags (90 kg)</th>
<th>Bags per Ha.</th>
</tr>
</thead>
<tbody>
<tr>
<td>73/74</td>
<td>4</td>
<td>4</td>
<td>8</td>
<td>250</td>
<td>31.2</td>
</tr>
<tr>
<td>74/75</td>
<td>20</td>
<td>19</td>
<td>43</td>
<td>1156</td>
<td>26.8</td>
</tr>
<tr>
<td>75/76</td>
<td>40</td>
<td>38</td>
<td>100</td>
<td>1988</td>
<td>19.9</td>
</tr>
<tr>
<td>76/77</td>
<td>52</td>
<td>49</td>
<td>115</td>
<td>2013</td>
<td>17.5</td>
</tr>
<tr>
<td>77/78</td>
<td>66</td>
<td>37</td>
<td>90</td>
<td>1040</td>
<td>11.5</td>
</tr>
<tr>
<td>78/79</td>
<td>75</td>
<td>66</td>
<td>93</td>
<td>1800</td>
<td>19.3</td>
</tr>
</tbody>
</table>

The net farming incomes according to the categories established for Mpungu are shown in tab. 5.7.

Table 5.7.: Income group classification Nkenyauna farmers 1976-1977

<table>
<thead>
<tr>
<th>Category</th>
<th>I (Loss K.0-200)</th>
<th>II (K.200-400)</th>
<th>III (K.400-600)</th>
<th>Tot. No. of Farmers (Cat. I &amp; II)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Season:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>75/65</td>
<td>5</td>
<td>16</td>
<td>13</td>
<td>38</td>
</tr>
<tr>
<td>76/77</td>
<td>6</td>
<td>26</td>
<td>13</td>
<td>49</td>
</tr>
</tbody>
</table>

The 1977/78 season is not considered in tab. 5.7., as it was very unfavourable climatically, and there were many problems with the delivery of tractors for ploughing. This resulted in many farmers not going into production at all, or ploughing too late, which led to late planting and poor harvests. From the data shown in tab. 5.7., it seems that an increasing differentiation between farmers at Nkenyauna, as at Mpungu, is apparent between those few earning a reasonably good net income and a number of farmers with a marginal profit or a net loss (i.e. those in debt to the credit organisation). The limited production results for all categories at Nkenyauna as compared to Mpungu are due in part to a poorer soil quality at various locations in the Nkenyauna project area and because agri-
cultural extension work and service availability was more extensive at Mpungu than at Nkenyauna. In addition, the motives contributing to settling at Nkenyauna play a role as interviews which I held with farmers at the project in November 1978 show. The section below deals with the origins of the Nkenyauna farmers as well as the reasons for their settling at the project. This will be considered in relation to the results achieved.

5.3.2. Origin of the farmers

The origin of the farmers at Nkenyauna show a greater degree of variation than those of Mpungu. Migrants are present from the entire district.

Although there is also interest shown for settling at the project from other parts of the province, for example by refugees from Angola and Zaire, the policy followed at the project favours the local population for first consideration - that is, the Kaonde population settled in Kasempa District. Project policy is focused on keeping the homogeneity of the settled population, avoiding language problems, and as Kasempa District is considered one of the most underdeveloped regions of the country, it is felt that the district's inhabitants should have the first chance to settle.

The summary below gives the places from which the 66 farmers who had a plot of land at the project during the 1977/78 season had come.

Table 5.8: Former location of farmers at Nkenyauna

<table>
<thead>
<tr>
<th>Area</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Areas adjacent to the project</td>
<td>25</td>
</tr>
<tr>
<td>(Nkenyauna, Kivuku, Kasempa) (0-20 km)</td>
<td></td>
</tr>
<tr>
<td>Southeastern part of Kasempa District</td>
<td>15</td>
</tr>
<tr>
<td>(Kalasa, Mukunashi, Nyoka) (20-50 km)</td>
<td></td>
</tr>
<tr>
<td>Southwestern part of Kasempa District</td>
<td>8</td>
</tr>
<tr>
<td>(Mushima, Njenga) (20-50 km)</td>
<td></td>
</tr>
<tr>
<td>Northern part of Kasempa District</td>
<td>9</td>
</tr>
<tr>
<td>(Kamatete, Kaimbwe, Ingwe) (20-70 km)</td>
<td></td>
</tr>
<tr>
<td>Settlers who arrived directly from town</td>
<td>6</td>
</tr>
<tr>
<td>Fission of farms at the project</td>
<td>2</td>
</tr>
<tr>
<td>Other districts in the province</td>
<td>1</td>
</tr>
</tbody>
</table>

66 total
With regard to recruiting policy the following groups of farmers can be delineated:

A) The first recruiting in 1973 and 1974 favoured those from the vicinity who already had some farming experience and preferably some capital. It was expected that such settlers would be able to quickly set up an efficient farm and as such, serve as an example for further settlers. Only a small number of farmers of this type applied.

Of this first group of 19 farmers the relocation was not successful. Six farmers have already left the project. Four do not live on their plot and having activities in Kasempa, and they do not pay much attention to their farms. Two have stated that they are thinking of leaving the project. Most of the farmers of this group arrived at the project with high expectations of achieving fast results with the help of the expected extensive government support. This, in practice, was disappointing. The promised government help regularly stagnated with regard to services such as tractors and the supply of pumped water. Moreover, good results were dependent to a larger extent than anticipated on the farmers' own manual work input and their presence at the scheme.

B) In 1975 the selection norm for participation was enlarged to include villagers living in the immediate vicinity of the project. Villagers living along the nearby Mumbwa road had criticised the creation of the scheme because it appropriated areas traditionally used for their garden plots. A number of these villagers received a farm plot along the southern part of the project (cf. fig. 5.1). This selection was also not very successful. Most of the farmers remained settled where they were—along the Mumbwa road, where they already had social
contacts. A plot at the project was regarded as being a venture for trying out results of cash-crop production supported by government facilities, and, in the meantime, the farmer carried on food crop cultivation at his own village.

C) Since 1975, a group of farmers, applying from various parts of the district, have settled on the northern part of the project and, since 1978, at the Kanjibiji extension (cf. fig. 5.1). The extended government facilities such as a cleared plot, ploughing done at government cost during the first year, infrastructure such as roads and pumped water supply are inducements which make it possible for migrants from farther away or from town to establish themselves at the project and to bring land under cultivation right away.

If we look at the farm results of the above mentioned three groups, there are obvious differences. Factors such as age, education, and religion do not vary significantly between the categories with the exception of group (A) which has a few relatively young farmers with a good education.

Table 5.9. shows the results of the 1976/77 season. To avoid comparisons between farmers producing for a longer time and those producing only for the first year, those farmers are included who had been producing for at least two seasons. (First year cultivation has the advantage of high initial soil fertility and in general good crop results).

<table>
<thead>
<tr>
<th>Income class</th>
<th>I</th>
<th>II</th>
<th>III</th>
<th>IV</th>
<th>Total</th>
<th>% in marginal category (I and II)</th>
</tr>
</thead>
<tbody>
<tr>
<td>group A</td>
<td>3</td>
<td>9</td>
<td>1</td>
<td>-</td>
<td>13</td>
<td>92%</td>
</tr>
<tr>
<td>group B</td>
<td>-</td>
<td>5</td>
<td>2</td>
<td>-</td>
<td>7</td>
<td>71%</td>
</tr>
<tr>
<td>group C</td>
<td>1</td>
<td>6</td>
<td>3</td>
<td>2</td>
<td>12</td>
<td>58%</td>
</tr>
</tbody>
</table>

Although the number of comparisons is small and the period of time is short, there are still obvious differences.

Group A expected much from project participation, but results were disappointing and motivation decreased. Some
farmers of this group consequently left the project.

Group B began without much enthusiasm, and with a certain degree of opportunism, mainly because the project was situated nearby. They did not live there and were not motivated to exert themselves to make it a going concern.

Group C show relatively the best results. Originating in various part of the district, all of these farmers live at the project and can less easily return to the region which was left.

The farmer's settlement motives appear therefore to be related to the economic results achieved. In the following section I will discuss this more fully.

5.3.3. Motives for settlement

Interviews were held with 40 farmers divided over the above groups in 1978. With the help of an open interview farmers were questioned as to their reasons for coming to the project and for leaving the original village. Although answers are relatively stereotyped and it is particularly difficult to get an impression of factors pertaining to leaving the original village, the interviews give some insight into the motives that have played a role in migrating to the project.

a) Economic factors

Table 5.10. lists reasons mentioned in the first instance for locating at the project. In fact, there are of course several motives together which make up the decision to settle at the project. Both economic and social factors play a role. The primary motives mentioned are mainly in the economic sphere.

Table 5.10.: Motives for settling at Nkenyauna scheme, 1978

<table>
<thead>
<tr>
<th>Motive</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>starting a good farm</td>
<td>4</td>
</tr>
<tr>
<td>becoming a commercial farmer</td>
<td></td>
</tr>
<tr>
<td>becoming a farmer; producing</td>
<td></td>
</tr>
<tr>
<td>enough food and selling crops</td>
<td>17</td>
</tr>
<tr>
<td>earning a cash income</td>
<td>10</td>
</tr>
<tr>
<td>having a place to live</td>
<td>4</td>
</tr>
<tr>
<td>living near to the district centre</td>
<td>2</td>
</tr>
<tr>
<td>already having gardens at the project</td>
<td>3</td>
</tr>
</tbody>
</table>

40 total
The answer given the most is, to become a farmer \((17x)\). This is a stereotyped answer which is known to be in agreement with the purpose of the project. From further conversation, the farmer's feeling became clear that it is important in the first place to produce an adequate food supply for household consumption, and secondly to produce for the market and obtain a certain amount of cash income. The facilities extended at the project such as cleared ground and tractor service are important factors inducing settlement.

The group stating 'earning cash' is also large. Having an income which enables the buying of clothes and school uniforms for the children is seen as important in addition to the possibilities at the project for producing food for the household. Earning cash through farming, in particular, is felt to be of secondary importance. It is interesting in this regard that the project supervisors have observed that many settlers are often more concerned with getting temporary or permanent employment at the project than in running their farms. Even if the job wages are lower than what could be achieved by farming, the farmer still prefers to take a (temporary) job. Having a monthly income is more attractive than the risks involved in agricultural production, in which cash is received only after an entire season of work.

A small number of farmers chose the project because it offered a place to settle. This was important in cases of conflicts in the original village or because of a divorce, as mentioned by some women farmers. The project's proximity to the district centre is also seen as of primary importance to a number of migrants. If we look at the given settlement reasons in relation to farm results, the following picture emerges (cf. table 5.11.). Only those farmers are included who had been producing for two or more seasons.
Table 5.11. **Motives for settling and income groups, Nkenyauna scheme, season 76/77**

<table>
<thead>
<tr>
<th>Income class</th>
<th>I</th>
<th>II</th>
<th>III</th>
<th>IV</th>
<th>Total</th>
<th>% in classes III and IV relative to total</th>
</tr>
</thead>
<tbody>
<tr>
<td>starting a commercial farm</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>4</td>
<td>25%</td>
<td></td>
</tr>
<tr>
<td>becoming a farmer, producing enough food</td>
<td>2</td>
<td>5</td>
<td>4</td>
<td>2</td>
<td>13</td>
<td>46%</td>
</tr>
<tr>
<td>earning a cash income</td>
<td>1</td>
<td>5</td>
<td>2</td>
<td>8</td>
<td>25%</td>
<td></td>
</tr>
<tr>
<td>having a place to live</td>
<td>2</td>
<td></td>
<td>2</td>
<td></td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>gardens already at project</td>
<td>2</td>
<td></td>
<td>2</td>
<td></td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>

The group wishing to start a 'good farm' and a market production did not have the best results. The high expectations mentioned above, typical of the group of first settlers, (group A cf.5.3.2.) were of influence. Once established at the project, hopes were not fulfilled, the farming concerns did not deliver immediate and easily achieved results. Consequently, there was a search for other sources of income.

Those wishing to establish themselves as farmers in order to produce subsistence food as well as a cash-crop production appear to be among those with relatively the best results.

Project participants wanting a cash income, with farming only of secondary importance, had no better than moderate results. Some had other sources of income and were always on the lookout for other possibilities.

For those looking primarily for a place to settle or already having garden plots located in the project area, cash-crop production and an increased income were not the basic reasons for being at the project, although it must be noted that the sample number of this group is very small.

**b) Social factors**

Although only rarely stated during the interview, social factors also appear to be of importance in settling at the project. Only in a few cases was having family in the neigh-
bourhood given as a settlement reason. Still, after questioning, it appeared that the person usually did have relatives at the project. In 1978, of the 40 farmers questioned, 25 have relatives at the project and 10 have kin living in the direct vicinity. That a large number of farmers are related also appears from the fact that nearly 33% belong to the same clan, that is, the Bena Kyowa clan (cf. Appendix V). Further questioning also revealed that religion played a role in settling at the project, especially being in the vicinity of a church and having neighbours of the same faith. Table 5.12. summarises the farmers' church affiliation.

Table 5.12.: Religious affiliation of farmers, Nkenyauna scheme

<table>
<thead>
<tr>
<th>Church</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evangelical Church of Zambia (ECZ)</td>
<td>20</td>
</tr>
<tr>
<td>Jehovah's Witnesses (JW)</td>
<td>9</td>
</tr>
<tr>
<td>African Apostolic</td>
<td>3</td>
</tr>
<tr>
<td>African Methodist</td>
<td>1</td>
</tr>
<tr>
<td>No church affiliation</td>
<td>7</td>
</tr>
</tbody>
</table>

40 total

The majority at Nkenyauna project belong to ECZ and the presence of the ECZ Mukinge mission nearby is an inducement. Several farmers have social contacts at the mission post and medical and social help can be obtained, if necessary. Some settlers are also drawn to the project because of the various churches, of other denominations, which are located along the nearby Mumbwa road.

c) **Reasons for leaving village of origin**

Finally, a few words about the motives that have influenced moving away from a person's original surroundings. The first answer given to the question of why the village of origin had been left, or why a village was moved away from the traditional area into the settlement project referred usually to the listed above economic motives. Further discussion disclosed that various reasons contributed to departure (cf. also interviews with farmers, Appendix XII). The following summary offers an indication of the motives mentioned.
Economic factors
- insufficient land in the original area 11 x

Social factors
- conflicts and accusations in the village of departure 5 x
- death of family members in the village 5 x
- divorce leading to searching for another settlement site 2 x

Insufficient land is the factor most often mentioned by those coming from the direct vicinity of Kasempa. This indeed becomes problematical for the area around Kasempa having a population density of 20 per km$^2$. The newly cleared land of the project is then very attractive to settle even if continuation of subsistence farming is the main aim.

Conflicts in the village of origin are the most frequent reasons, mentioned by migrants from farther away. Various other social factors, such as death in a village, contribute also to relocation. These factors correspond then with the social factors causing village relocation or setting up a new settlement discussed in Chapter 3.

A separate group of settlers is made up of Kaonde migrants who returned from urban areas. Numbers particularly increased after propaganda was made, e.g. via the radio in the Kaonde language, for location at an agricultural scheme. These migrants have settled, primarily since 1978, at the Kanjibiji extension. Generally, these migrants are workers who left the mines when they retired at 50 and who receive a pension paid at once in cash. These settlers have no desire to return to their original village since it is feared that relatives will make immediate demands on capital earned in the city (cf. Appendix XII, case study 4). The project offers this group the possibility of settling independently. The urban-earned cash is usually put to use quickly in building a proper house at the project. This group also tends to use cash for all kinds of investments in the farm and other undertakings like a small shop. The danger arises here that a person overestimates his capabilities and is not sufficiently conscious of the demands made in running a good farm. Also, the project soon comes under criticism from members of this group. A reasonable service pattern as it exists in town is expected, so that after being only settled at the project for a short time, criticism is often expressed of the delays in supplying facilities.

The above review gives an indication that there are diverse motives contributing to departure from place of origin and for settling at the project. In general, a strong incentive is
often lacking for becoming a farmer and for applying oneself to the fullest in the production of cash-crops. This is implicitly assumed by the project supervisors, and often leads, on their part, to disappointment about the farm results. The perceptions of the project supervisors and the participants are clearly divergent on this point.

When applying, the migrant states that his desire is to 'start farming' as this is the stereotype known to be expected of participants by the project staff. But in reality his reasons are often much more complex. Moreover, the new settler does not realise what 'cash crop farming' really entails. It is difficult for this to be otherwise since most applicants originate from a milieu of a traditional subsistence economy. Expecting that people immediately adapt wholeheartedly to a new and unfamiliar work system is also unrealistic.

5.4. THE PLANNING OF THE PROJECTS

5.4.1. Summary of results

In 1979, about 180 farmers were settled at the Mpungu and Nkenyauna projects which, for Kasempa District, meant that a relatively large and concentrated group of farmers was directly involved in agricultural production for the market. About one-half of the farmers obtained an income through cash sale, corresponding to, or higher than, the minimum established for Zambia. Considering that the large majority of the farmers had no income at all before moving to the project, the achieved results are in line with the projects' purpose. The settlement projects contribute also to a further population concentration and more permanent settlement nearer to the district centre. The most noteworthy points with regard to the schemes are:

At Mpungu, a clear and systematic planning of the farm plots was broken up after a few years due to settler re-arrangement on the basis of social affiliation. A settlement pattern is emerging which is very similar to the pattern most commonly present in the district.
Economic growth has led to differentiation in the projects after a few years, despite equal opportunities for all. Certainly not all of the more educated belong to the group showing the best results. Factors such as religious affiliation, family bonds, etc., are just as much of influence. At Nkenyauna, migrants from all parts of the district arrived at the project with various motives for settling there. The high degree of mobility of the Kaonde population appears here to be an advantageous factor in inducing people to settle at the project. Participation does not mean, though, that the settlers in all cases are immediately motivated to adopt new methods and to work intensively on their cash crop fields. Various reasons for settlement apply.

The project is also attractive to migrants from the urban areas. These are in this way offered a chance to respond to the national call of 'back to the land', under which one can settle at the project independently of the original, traditional, village bonds.

The results of the projects can be largely attributed to a number of favourable conditions created by the government:

1) The farmers received intensive training and much individual attention, especially at the Mpungu scheme. The project staff is concerned with turning over the organisation of the cooperative aspects of the project to the farmers themselves. This has resulted at Mpungu in a further participation by the farmers in farm matters. An attempt is also being made to decrease the dependence on tractor mechanisation by introducing oxen-traction. Possibilities are therefore opened for a more mixed farming which includes livestock rearing.

2) The supervision at the projects is characterised by a large degree of flexibility in applying rules of location and farm methods. At Mpungu, this has resulted in the farmers increasingly regarding the undertaking as their own, rather than as a government project. This feeling of identification is not yet present at Nkenyauna.

A daily problem is how permissive the staff can be in questions of non-application of crop rotation, non-residence at the project, having an additional worksphere, and change of farm plots because of soil infertility and/or social affiliations.
The investments in the project require in principle an optimal use of the offered possibilities and a strict application of the rules. But if such a policy is too strict, it does not advance the necessary feeling of social and economic security of the farmer.

3) A very favourable factor is staff continuity. Since the projects began in 1972, the staff has remained the same at the local level and consists of Zambian agricultural officials and a foreign specialist who together attend to the planning and supervision of the project. The staff has an extensive knowledge of the population, region, and technical problems involved. Chambers (1969,245) indicates that an important stipulation for a successful settlement project is the continuity of a well-chosen supervisory staff. In a report on the 'Family Farms' project in the southern province of Zambia, success is likewise attributed largely to the capable and highly motivated project supervisors who have already been at work for a number of years (Farrington 1972,49).

Nevertheless, the long term prospects of the schemes are endangered by a number of problems.

5.4.2. Planning problems

The main problems confronting the projects of which some are regularly mentioned by the farmers themselves, are:

a) soil exhaustion through exclusive maize cultivation, with insufficient or a total lack of crop rotation.
b) unreliability of the offered mechanised facilities with regard to tractors as well as water supply.
c) problems concerning the extension of adjusted credits and the very late payment after deduction of the seasonal loan, for produce delivered\(^6\).
d) a limited crop variety leading to a one-sided diet.
d) absence of basic services such as primary schools, medical care, etc., at the projects, and the long distances to these services located in adjacent areas.

Besides the technical agricultural problems such as soil-exhaustion, failure of the crop rotation programme, etc., the problems noted above are also closely connected to the chosen spatial planning.
The project planning is a result of a primarily agricultural viewpoint and consists of a set-up by which farmers are expected to manage a relatively large farm plot (25 ha.) which must produce a limited number of crops in large quantities for sale on the market. Thus, the project planners focused on long-term future planning aims, which are contrary to the realisation of a number of short-term aims and immediate needs of the participants.

Main problems in relation to the spatial planning of the projects are:

a) agricultural lay-out versus provision of services.
b) farm size and farm specialisation versus traditional agricultural practice.

a) Lay-out versus provision of services. The projects are situated on plateau red clays which are suitable for growing the cash crops that are presently being recommended by the government. The limited surface area of suitable and level stretches of clay soils and the large demarcated farm size (20-25 ha. per plot) make it impossible to accommodate more than 30 to 60 farms per project, which means ca. 250 to 500 people (based on 8 persons per farm).

Moreover, the natural conditions of the topography and the projection of routes across the highest areas thereby contribute to a linear project set-up through which the project area has an extended length and large distances between farms and the project centre. Supplying basic services such as schools and clinics is difficult because of the lay-out and the limited number of inhabitants per project. The projects are also too far away from one another to justify, on the basis of walking distance, shared services. Fig. 5.1 indicates that many settlers live at a distance greater than 5 km. from existing primary services located in adjacent areas. Within the project, the distances are such as to hinder intensive communication, the holding of regular meetings, and the supplying of simple daily services. At Nkenyauna, several farmers live over 10 km. by road from the project's service centre.

Settling on higher ground also means that crops can only be planted in the rainy season. It is impossible to
maintain vegetable gardens in the dry season because of the great distances to streams. Problems with water supply and limited capacity of bore holes and hand pumps makes irrigation in the dry season impossible to any extent. Cultivation of crops during the dry season is therefore practically non-existent. This results in a rest in agricultural activities for several months (July to October). This has an adverse psychological effect and the settler tends during that period to look for other (temporary) jobs and to regard farming as a temporary activity.

b) Farm size and specialisation versus traditional agricultural practice

The managerial and technological level of most farmers is not such that they are capable of utilising intensively the entire land allotments of 20 to 25 ha. There is the tendency toward shifting cultivation being applied on the large plots instead of the intended intensification of agricultural practice.

To raise the production level and to acquaint the farmers with modern methods, the advice is given to cultivate only some crops in large quantities. The disadvantage of this is that to achieve a substantially higher production, a higher degree of technology is needed, for which the population generally is not yet ready. Further, specialisation directed at a few crops means, moreover, a larger dependence on the market and the national economy. Traditionally, the population is accustomed to carry out a great variety of small farming activities in diverse types of small gardens lying on higher ground as well as along streams. The present planning method of the farms does not draw from traditional production methods and excludes any use of these. In this regard, it is noteworthy that the most successful farmers of the district - these do not live at the project (cf. following chapter) - are those who have farms based on a diversity of garden types, and where various crops are grown throughout the year.

The planning lay-out of the farms on the red clay areas is directed to the cultivation of a limited range of rainfed crops; also the planned irrigation farms at the Lubofu section are geared to production of certain crops by a different group of farmers. In this way planning is directed at
farm specialisation, contrary to traditional agricultural practice and is also above the technological level of the farmers.

When we consider the dietary aspects of such a specialisation, it means that only a limited variety of food crops is available at the farms compared to the traditional situation. Moreover, because a larger population is concentrated in one area the possibilities have decreased for food supply through hunting, fishing, and gathering forest products. This loss is only very partially compensated by a larger cash income to supplement the diet.

It can be concluded here that although the economic standard of living has been improved through settling at the projects and part of the participants have gained an increased cash income, general circumstances have not improved in the sphere of general services such as a school and clinic in the near vicinity. Also in the 1970's, the settler was not better-off with regard to water supply than in the area of origin, due to dependence on unreliable mechanised means. In addition, there are indications that the diet has become one-sided (Parmentier 1979, 64).

To promote more intensive land use, production of various crops, and use of other technical means such as oxentraction, smaller farm plots of ca. 10 ha. are therefore recommended. Smaller farm plots would mean also that farmers are living closer together, which facilitates a more efficient supply of other services. More successful farmers wishing to expand could then be stationed on larger farms situated along the edge of the project area. A more diversified planning of smaller farm plots located on various soil types and nearer to streams and incorporation of a greater range of local food crops is recommended. To open the area by bringing in more roads to ecologically interesting points has to be part of this planning. Attention could be given to locations where red clay soils occur not far from streams and where stream banks or dambos offer opportunities for cultivation and simple irrigation. This means that the lay-out of farmsteads and plots in an orderly way along one or two roads will be more difficult to realise. A settlement pattern of more scattered groups of farms will emerge, but as we have
seen in the case of the Mpungu scheme, this tendency is already going on spontaneously. Such a pattern is also more in accordance with the social forces which determine the settlement pattern. With the lay-out of roads and some guidance a pattern can still be shaped whereby various farmstead-clusters are located within a certain radius (5 km.) of the project centres and basic services.

It is realised, however, that this type of planning making also use of plots nearer to streams, constructing roads to these locations, and bridges across streams demands much attention in the field of soil conservation. The chosen areas are much more vulnerable in respect to erosion. Also production of a greater variety of crops, in smaller quantities, demands a good and flexible marketing organisation. Establishment of Zamhort, a new government marketing organisation for vegetables and fruits, could offer future possibilities in this respect. Planning in this way, with more diversification in plot size, soil types used, appropriate credit facilities, introduction of cattle will require a close guidance of extension staff and a differentiated and flexible approach for a considerable time in the future.

Important principles for the farmers' settlement schemes would then be:

- concentration of the thinly spread population of the district in more central and for permanent agricultural practice favourable areas
- promotion of intensification of agricultural practice with an accent primarily on integration of subsistence crops and cash crops and the introduction of livestock
- guaranteeing a sufficient diet with enough variety and a basic needs income
- the delivery of an efficient package of services, within reasonable reach.