

Report of a Social Survey on
Population Movement on Water Use
Activities in Sector II
Misungwi Area. March - May 1974
J. Helt.
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REPORT OF A SOCIAL SURVEY
ON POPULATION MOVEMENTS AND WATER-USE ACTIVITIES
IN SECTOR II, MISUNGWI AREA, MARCH - MAY 1972.

J. HILTE

EAST AFRICAN INSTITUTE FOR MEDICAL RESEARCH
Mwanza, Tanzania. 1974

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1. INTRODUCTION

This report presents research data obtained from a social survey on population movement and water-use activities carried out in Misungwi area between March and May, 1972. This survey is the second part of a one year research programme undertaken within the framework of the WHO - schistosomiasis pilot control and training project, Tanzania 2101. The first part of this programme was carried out between October, 1971 and February, 1972, the results of which have been published in a separate report (J. Ruyssenaars, April, 1972).

The aim and objectives of the research programme have been described in the previous report. On the basis of preliminary data obtained from the first phase of the programme it was suggested that in the second phase particular attention would be paid to the following activities:

On population movement: (a) To register the changes in the population (birth and death, in- and out-migration) which would take place after the first visit of households in Sector II.

(b) To undertake a sample survey on population movements in another part of the project area to see whether the changes in the population of sector II are representative for the whole project area.

On water-use: (a) To continue investigations into the role of the traditional village organizations, particular concerning the management of waterbodies.

(b) To collect more detailed information about the relation between age and sex on the one hand and water-use habits on the other hand, and the use of the various waterbodies according to the different seasons.

2. SOCIAL BACKGROUND

For a description of Sector II we may refer to the previous report by Mr. Ruyssenaars whose survey took place towards the end of 1971 (here to be called the 1971 Census-survey).

According to the 1971 census, 940 people were living in Sector II divided over 166 households. The total number of households had decreased

from 180 in 1968 to 166 in 1971. All villages except Mwambola showed a decrease in the number of households. It was estimated, that the total population had decreased at a rate of between 4 - 5% over three years.

The people are living in homesteads or kayas. In the traditional patriarchal homesteads various generations used to live together. Nowadays the homestead is reduced in size considerably (Heynen, 1968). This is mainly due to sociocultural changes such as in attitudes e.g. towards polygyny; the heavy burden of the bride-price; the influences of school and church; the role of the government after Independence; the transition into the money-economy.

Similar factors also play their transforming role with regard to the traditional village organizations (Varkevisser, 1967). Within this context TANU may be mentioned as one of the main agencies moulding new behavioral patterns. It would nevertheless be premature to ignore the role and position of the traditional societies at this moment, as will be shown from our investigation in Sector II, particularly in connection with the management of waterbodies.

3. SURVEY PROCEDURES OF DATA COLLECTING IN SECTOR II

As in the 1971 survey all data were collected by means of two interview schedules. For the registration of changes in the population, slightly altered forms of the 1971 census were used, whereas for the study of water-use activities new forms were devised. The interview schedules were presented first of all to the head of the household. However, to testify the reliability of the information, particularly on water-use activities, it was decided to present this part of the interview also to the wives of the heads of household (or the mother of the children in the household) and also to one or two (if present) children in the household over 14 years of age, arbitrarily selected at the moment of interviewing. This second category of interviewees, to be called relatives, was chosen after an originally planned 20% sample survey on water-use activities was dropped for the reason that during the try-out people under 15 years of age appeared not to be able to answer our questions.

Heads of households have been questioned about:

- (a) The changes in the population since the 1971 survey.
- (b) Land tenure and allocation.
- (c) Water-use activities.
- (d) The role of village organizations in the management of waterbodies.

The relatives were questioned about:

- (a) Water-use activities.
- (b) The role of village organizations in the management of waterbodies.

The interpreter/field assistant, who was already recruited for the first part of the programme, was given an additional interview training of two weeks.

After the try-out, the interviewing started on 4th April, 1972 and was completed, as planned, by mid-May, 1972. Heads of household and other informants were visited in their houses or on their shambas. As a rule the ten-cell leader of the respective informant accompanied the interviewer and introduced him into the households.

Sector V

After completion of the first phase of the research programme it was suggested to undertake a sample survey on population movements in another part of the project area for comparison with Sector II. In consultation with the WHO-project leader Sector V was chosen.

Sector V is situated south-west of Misungwi Settlement, and covers a little over 20% of the project area. It measures approximately 18 km². and consists of the following magunguli (villages) or part of them: Masawe, Bukwaya and Samalindi. A general description on location, physical environment, human population and other aspects of this area will be given later on.

For the sample 47 households (25%) were selected in a systematic way from a list of all households (188) which was available from a census organised by the project during January and February, 1970. The same household forms were also used for the registration of changes in the population.

It should be noted that for Sector V the interval between the first census (early 1970) and our sample survey covers 2 years only. This is in contrast with Sector II whereby an interval of three months was observed.

According to procedures followed in the 1971 survey, data were collected by means of interviews which were presented to all heads of household in the sample population. The interviews in Sector V were conducted between mid-May and mid-June, 1972.

4. OBSERVATIONS ON POPULATION MOVEMENTS, IN SECTOR II.

4.1. The composition of the population in 1971 and 1972.

In Table 1 the composition of the population in December, 1971 and May, 1972 is presented according to village, age and sex groups. The small parts of Mitindo and Itale were considered as one village. The division of age groups has been chosen because of their special relevance in the study and control of schistosomiasis. The pre-monitor group consists of children under two years old; the monitor-group of children aged from two to nine including; the over-age-group of people of ten years and over.

For the total sector the population increased with 13 individuals. All villages except Mbela show an increase in the population over this period. The sex-ratio for the total population shows a slight increase too. As can be seen from the Table, the sex-ratio for the successive villages differs markedly.

It can be seen that the increase is mainly due to the pre-monitor group; within this group the males contribute one individual more to the increase than the females do. No changes were registered for the males and females in the monitor-group, while the changes for males and females in the over-age group were in balance. The total population increased with 1.4% in about 4 months and tends to grow younger. The proportion of males tends to increase. The total number of monitor-males and females remained the same, whereas the number of over-age males increased and that of over-age females decreased.

The total number of households decreased by one. The average number of members per household increased slightly except in Itale-Mitindo. The average for Mbela remained stable.

4.2. Changes in the population.

To facilitate comparisons with the changes registered in the 1971-survey the instrument of "demographic equations" has been used again in the following way:

$$P_2 = P_1 + B + M_i - D - M_o \pm RD$$

in which P_2 = Population in 1972(May)

P_1 = Population in 1971(December)

B = Number of births

D = Number of deaths

M_i = Number of in-migrants

M_o = Number of out-migrants

RD = Registration deficiencies, due to underregistration of infants and young children in 1971.

There were no people who:

- moved out and came back during the 4 months interval.
- moved in and moved out again during the same period.

Data on the nature of changes in the population between December, 1971 and May, 1972, are presented in Table 2. It can be seen that new-borns contribute most to the increase in the population. Only 1 death has been recorded in the period under study. The natural growth (difference between births and deaths) is 1.4%.

Since all changes have become percentages of the initial population, by reducing the size of the population in December 1971 to 100, migration rates* and migration balances* could be calculated. The migration rate for sector II (May 1972) is 4. This figure may seem to be low, if compared with the high rates for the different villages and for the total sector in 1971. However it is clear, that this kind of comparison cannot give a penetrating insight into what may happen over a longer period; the data for May, 1972, should be regarded merely as interim-data.

The effects of in- and outmigrations on the total population are in balance as is shown by the migration-balance for 1972.

It can also be seen that females in the overage group show a stronger tendency for migration than any other age and sex group. This observation is in agreement with findings in the 1971 survey.

4.5. Aspects of migration.

In Table 3 the number of movements between December, 1971 and May, 1972 is presented for different age and sex groups. It shows that for the period under study (1) females are twice as mobile as males; (2) the peak age for migration is 10-19 years for both males and females; (3) the majority of mobile males is under 20 years (11 out of 23); (4) the distribution of movements is more evenly spread over the ages for females than for males.

11 People moved individually and 24 with other members of the family, mostly mothers with children.

The high relative-bound migration is illustrated by figures presented under section (b) dealing with motives for migration.

Data on the outgoing population are presented in Table 4. It can be seen that the real loss of the total 1971 population is about 1%. Females

* Note: Migration rate: The total number of all changes by migration, divided by the mid-population of the considered group.

Migration balance: The difference between in- and out-migrations in percentages.

contribute more than twice as much to this figure than males do. It also shows that more movements did occur to places within than to places outside the pilot area. Migration out of the pilot area is more frequent amongst women. The highest out-migration can be found in the age-group 15-29 years for both sexes.

Table 5 shows the new population in Sector II since December, 1971. The majority of them (42%) are new-borns. The number of in-migrants from outside the pilot area exceeds that of in-migrants from places within the pilot area. Leaving the new borns aside the age group 10-19 years contribute most to the new part of the population.

Movements within the pilot area.

Migration rates and migration balances have been calculated both for movements within and for movements to and from outside the pilot area. The relevant data are shown in Tables 6 and 7 in which:

A = Sector II

B = Pilot area (including Sector II)

C = Outside pilot area

Table 6 shows the migration rates and migration balances for movements within the pilot area (intersectoral movements). It can be seen again that the highest number of movements is recorded for females. Unusually high intersectoral mobility is recorded in females of 10-14 years and 15-19 years and in males of 15-19 years.

Movements to and from outside the pilot area.

In Table 7 the migration rates and migration balances for movements to and from outside the pilot area are recorded. It appears that migration-traffic with outside areas is highest for females as was also found in the 1971 survey. The migration balances for males is positive while that for females is negative. Again the age-group 15-19 for both males and females shows the highest migration rate.

(a) Geographical aspects of migrations in and out the pilot area between December 1971, and May, 1972.

Though the information regarding the geographical aspect of migration is not abundant, its data clearly indicate a similar geographical pattern as found in the 1971 survey. All in- and out-migrations, except two, took place within a radius of 35 km. Igokero, N.W. Kwimba, Kbarika, that is, within the traditional Sukuma areas. During the period under survey no

out-migration to new settlement areas, e.g. in Geita district, has been observed.

(b) Motives for migration.

Motives for migrations, as given by the heads of the households, are presented in Table 8. The main conclusions are as follows:

- Most of the motives for migration (71%) are related to social events such as marriage, divorce, children following their parents and also children coming to stay with relatives e.g. for attending school.
- Motives given for migration in the rainy season differ from those given in general. For example physical environment as an economic factor is lacking entirely as a motive for migration during this period.

(c) The time aspect of migration.

With regard to the time aspect of migrations between December, 1971 and May, 1972, it should be noted that the interviewing was started on April 4th and finished about mid-May, 1972. Hence it appears that there has been a certain underregistration for April and May.

We may conclude that there is a low migration during these months. Plausible reasons for the low degree of migration may be: the agriculture activity during these months which is markedly higher than during the dry-season; the time aspect, namely the months just before the harvesting of most crops, especially cotton, and the weather conditions in the rainy-season.

(d) Some notes on migration and the landtenure system.

In order to study the relation between land ownership and migration in Sector II and also to throw some light on the role of traditional village organizations, in particular regarding landtenure and allocation, all heads of household were asked to comment on the statements as presented in Table 10.

The traditional Sukuma landtenure system is one of rights to the use of land, rather than a system of ownership of land. The village had, and still have, their own traditional authorities for allocating land (BRALUP, 1971). In most parts of Sukumaland the authority for allocating land was the village headman (the Mwanangwa) or sometimes the head of the young men's society (the Nsumba Ntale). People who wished to obtain land to cultivate had to make a request to these village authorities.

Relatives also play an important part in this respect. We still notice that most of the people move to places where their relatives live, for relatives have the duty to advise and help the newcomers and introduce them to the community. Here we see again an important aspect of traditional communalism: the obligation to help relatives.

The availability of land, the size of the family, and the acceptability of the newcomers are determining factors in the allocation of shambas. Persons who cleared bushland themselves to obtain a shamba, were not submitted to allocation rules. Transferring land to other people was not allowed without the permission of the authority of the nzengo*. A shamba could be given to a relative without permission of the nzengo. Payment for land (whether for renting or buying) was, and still is, unknown in Misungwi, as was told by all heads of a household. While questioning them about this subject, they gave several remarks such as "some years ago we paid tax to the government", and "we also must pay for our TANU card, perhaps this is rent?", indicating that payment for shambas did not occur.

From data as presented in Table 10⁽¹⁾ can be concluded that in Sector II allocation of land still follows the traditional patterns. 75% of the heads of household stated that the shambas belong to the nzengo, and 90% declared that shambas can be given to newcomers by relatives. Nobody paid for his shamba. This in contrast with Heynen (1968) and Nirukigwa (1971) who found that in Bukumbi and Kalebejo areas people paid for the land. However, the reaction to statements in Table 10 indicate the full recognition of the ten-cell leader as a representative of the new authorities as well. Officially the village development committee is the allocating authority, but in Misungwi it does not seem to play a role in allocating land and neither does the Ward Officer.

The fact that migrations take place (a) to neighbouring areas within traditional Sukumaland, in which the same sociocultural and economic system exists, and (b) to virgin areas where sufficient land is available, may support the hypothesis that the relative ease with which farmers can acquire new shambas facilitates migration and reinforces the prevailing system of landtenure.

(e) Summary and discussion.

The material presented in this Section is rather scarce, simple and straightforward. The main theme is about seasonal migration. An attempt has been made to show the process of migration for the period under sur-

* Nzengo: The smallest residential unit larger than the homestead and in the sociological sense the equivalent of village.

vey by providing interim data. In general the findings of this survey confirm those of the 1971 survey:

- The total number of movements is very low at this time of the year.
- Females are more mobile than males.
- A high number of in- and out-migration takes place within a radius of 35 km; there are also quite some movements within the pilot area itself.
- Motives given for migration in the rainy season differ from motivations in general.

Whatever the reasons for migration may be, it will be unfavourable for farmers who for their cash income mainly depend on cash crops, in particular cotton, to move away before the harvesting of their crop. In this way economic factors, which are closely related to the agricultural season, might affect the time of migration. Therefore the key function of the cotton crop in the pattern of migration may be its de-blocking mechanism. After harvesting and selling of the crop, roughly from July onwards the farmer will be in a financial position to move away. Table 9 illustrates the importance of the cash crop for the household budget of cotton-farmers. The non-economic factors of migration such as fear of witchcraft, death and disease may take effect from that time.

Investigations into the time aspect of migration in relation to the "agricultural-year", starting in the short raining period, on the one hand, and to the "budget-year", which starts after the money for cash crops is being received towards the end of June, on the other hand, would be highly advisable.

5. ON WATER-USE

As pointed out in the introduction, the part of the survey on water-use is dealing with:

- the role of the traditional village organizations in the management of the waterbodies;
- more detailed information about the relation between age and sex and water-use habits, and the use of the various waterbodies according to the different seasons.

The procedures and method of data-collecting have been described under chapter 3 of this report.

5.1. Traditional village organizations and the management of waterbodies.

It is realised that insight into the social situation and the cultural pattern of the project area will be extremely important for a better understanding of its health problems and related water-use habits. For

this reason, this paragraph aims to provide data on some major socio-cultural aspects of the community, namely the functioning of the traditional village organizations.

The tables presented in this paragraph provide miscellaneous information on:

- the village authority, the membership of village organizations and the respondent's functions in these organizations;
- the cleaning of ponds and dams under the responsibility of the village organizations;
- the systems of sanctions for not participating in the work of the organizations.

The village authority

The statements as mentioned in Table 11 were presented to the respondents to obtain more reliable information about the impact of the ten-cell leader and the banamhala* on typical organizational activities within their community. These statements were in particular directed to the role of the ten-cell leader and the banamhala as informants. From the reactions to the first statement it can be seen that 90% of the heads of household and 100% of the ten-cell leaders deny that the ten-cell leader has an informative task concerning the ponds, e.g. the digging or cleaning of ponds. On the other hand, the kanumba, who is the assistant of the nsumba ntale^x and also the nsumba ntale himself, the head of the kisumba, were regarded as important informants.

The answers on the statements 2.3 and 4 confirm that the function of the kinamhala is more directed to the field of organization. The remarks given on these statements indicate the co-operation between the kinamhala and the kisumba^x.

From the answers on statement 4, we may assume that the banamhala functions as a link between an official institution such as Tanu and the informal organization of community life. In the context of this paragraph it should be noted, that the position of the ten-cell leader in village life may be an ambiguous one. As an inhabitant of the nzengo and as a member of one of the village organizations he cannot escape his duties in the

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- * Banamhala : Members of the village organization for older men, called the Kinamhala, the most important village organization.
 - Nsumba ntale : The head and representative of the basumba.
 - Kisumba : Village organization of young men and women. Its members are called basumba.

society and he is therefore submitted to the rules of the traditional society. On the other hand, he performs an official function in the government and party organization. Ten-cell leaders in Sector II are first of all seen as representatives of their nzengo, civil servants, who associate with their fellow villagers.

Membership of village organizations.

From Table 12 it can be seen that 90% of the heads of household are members of one of the traditional village organizations. Most of them belong to the banamhala (60%); some are women and belong to the bagikulu* (17%) and a small number are still basumba (13%).

78% from the relatives are women, bagikulu; they are the wives of the heads of household (or the mothers of the children in the households). 12% of them are members of the basumba, most of them being unmarried people over 14 years of age.

About 10% of both groups of respondents have no membership; most of them are christians and a few are teachers. All the ten-cell leaders belong to one of the village organizations, most of them to the banamhala.

From the respondent's reactions to statements 1 and 6 in Table 13, it seems safe to assume that women have to clean drinking ponds and that the bagikulu examine whether the ponds are still clean. The answers on statements 2 and 3 show that the banamhala are not always considered as the watchmen on the days the basumba are cleaning the ponds. Therefore the banamhala must be seen as an advising and not as a controlling agency.

69% of the respondents agree with statement 4: "The banamhala show the basumba how to clean the ponds". The answers on statement 4 and 5 underline the advising function of the banamhala.

It should be noted that people often mention the nsumba ntale as the person who has a certain responsibility for the cleaning of ponds, e.g. as a watchman on the days that the basumba are cleaning ponds (44x) and as a person, who examines whether the ponds are still clean (15x).

Sanctions for not participating in cleaning and digging ponds.

The respondents were asked to answer the following question: "What are the sanctions for not participating in cleaning and digging ponds and dams?" As possible answers could be chosen: no sanctions at all, warnings, and fines. Respondents could give more than one answer.

* Bagikulu: Member of the village organization of married women (the Kigikulu).

84% of the heads of household mentioned fines and warnings as the most important sanctions (fines 64% and warnings 20%). In 13% of the answers, likely given by the female part of this group of respondents, it was stated that no sanctions were put on people who do not participate in the cleaning and digging of ponds.

59% of the relatives mentioned fines and warnings as the most important sanctions (fines 47%, warnings 12%). "No sanctions" was the answer of 49 members, or 33% of the total number of answers. The relatively high number of females in the group of relatives may explain the great number of respondents who thought "no sanctions" would be given or who did not know the answer.

Who are dealing with sanctions.

The respondents were requested about the organizations and authorities dealing with these sanctions. Again, more than one answer could be given.

It can be concluded that the banambala and the basumba are the main agencies dealing with sanctioning people. Modern authorities like the ten-cell leader and the ward officer seem not to play a role of importance in dealing with sanctions. An interesting observation is the indication that the bagikulu are not engaged in these affairs.

5.2. The use of waterbodies in relation to sex and age-categories and to seasonal variations.

As can be seen from Table 14, there are two groups of respondents: the heads of household and the relatives. The respondents were asked to answer the following question: "Which members of your household are engaged in taking drinking water, washing clothes, " etc. The answers were recorded for males and females of three age-groups: 0-9, 10-20, and 20 years and over.

The highest number of absolute scores can be found for bathing and washing clothes. This means that these activities are said to be done by males and females of all age-groups. Bathing is to be done by almost everybody, which is also the case for washing clothes, though females of 20 years and over are engaged most in the latter activity. Fetching drinking water, washing utensils, washing vegetables, and bathing young children is said to be done almost exclusively by females, and especially by females of 20 years and over. Watering cattle and swimming are activities for young males and young females, though young males are more engaged in these activities than young females. These two activities also had the lowest number of absolute scores for age and sex groups which means that in the respondents opinion these activities are not done at all. There is almost

no difference between the pattern of answers between the two groups of respondents.

Information was also collected on the use of waterbodies in the different seasons. In particular, respondents were asked whether they had changed or were changing ponds in the period before or during the rainy season. It appeared that most people were still using the same ponds as during the past dry season, because the months of March, April, and May had been unusually dry. At that time Mwanza area had the lowest rainfall recorded for the last 30 years. It will be clear that the shortage of rain also disturbed the normal pattern of water-use activities during the season under study. It is therefore assumed that more reliable information could be derived from the answers given to our question as to whether people were going to use a different pond in the coming rainy season.

The data presented in Table 15 seem to indicate that people are not always using the same ponds in the dry and in the rainy season. The biggest change in the use of ponds has been recorded for watering cattle. The percentages for washing clothes, bathing and swimming are slightly lower, for collecting water markedly lower. Masawe area, which was not included in the previous sample survey on water-use, differs from the other areas in that people make use of two concrete wells providing clean water all over the year. The average number of households using these wells is very high (more than 20), while the average number of households sharing the same drinking pond is 8.73 for the total area. Our conclusion therefore is that in Masawe the change in the use of ponds will be relatively low.

With regard to the period of cleaning ponds, it appeared that according to 95% of the respondents, ponds were cleaned just before, and not during the rainy season. Drinking ponds have a certain priority over other ones.

6. POPULATION MOVEMENTS IN SECTOR V.

Introduction

Sector V is situated south-west of Misungwi and measures 17,4 km.² The sector includes three villages, or parts of them, namely Masawe, Bukwaya and Samalindi. In the south, the Magogo-plain is the natural boundary of the sector. A big number of houses in this area are traditional Sukuma plots; they are rather widely dispersed and mainly situated halfway the slopes of the hills.

In most parts of the sector we find the fertile mbuga soils. Cultivating the land and herding cattle are the main economic activities. Besides predominant traditional cultivation methods, we can notice the use of farming machines, which can be expected to contribute to an increasing economic welfare. In addition to the more common crops, there are certain "prestige" crops, such as tobacco and sugar-cane. Environmental factors as mentioned above, may help to explain the rather wealthy outlook of this area.

Survey procedures and methods of data collecting were carried out as described in chapter 3 of this report. The interviewing started on 20th of May and was completed on 10th June, 1972. Our investigation took therefore place in a period of high agricultural activity, namely during the picking of the cotton. As is said before, the total number of households involved in this study is 47 (25%) out of a total of 185 households. In our analysis, the division into pre-monitor, monitor and over-age groups has been retained in order to facilitate comparison with other sectors of the project area.

6.1. The composition of the population in 1970 and 1972.

Data on the composition of the total population in 1970 and 1972 are presented in Table 16. It can be seen that the population increased with 34 (12.5%) over a period of more than two years. The sex-ratio (number of males divided by the number of females) increased from 111,6 to 119,2. There was a slight decrease in the premonitor group. The monitor group remained stable, whereas the over-age group increased, particularly due to the males.

The average number of members per kaya increased from 5.8 in 1970 (47 kayas) to 6.5 in 1972 (47 kayas). As will be seen, the increase of population was mainly due to an immigration surplus.

Demographic equations for rough age groups are presented in Table . It can be seen that the immigrants, particularly in the over-age group, contributed most to the increase of the population of the sample. The natural growth (the difference between birth and death) was 3.8 per year. The big number of registration deficiencies (Rd) is due to:

- the underregistration of infants and young children in 1970.
- shifts to other age groups.

The migration rate for Sector V was 22.8 and the migration balance + 6.5. The population increased by about 6% per year. From the initial population about 10% was lost (out migration plus death) between 1970 (January) and 1972 (June).

6.2. Aspects of migration.

Mobility.

The proportion of people born within the project area is 80% for males and 70% for females. The proportion of people born in the same village is 71% for males and 60% for females.

Data on the mobility by age and sex groups derived from individual histories of people of over 14 years in the 1972 population reveal that females are more mobile than males. The peak-period for mobile males is 20-29 years and for females 15-19 years. 58% Of all movements have been made under 20 years of age and more than 25% of all movements have been registered for the age group 20-29.

77% Of all movements took place in the rainy season and 22% in the dry season.

As can be seen from Table 18 the total number of in- and out-movements is 66, including 1 out-movement and 12 in-movements within sector V. The total number of in-movements is 42, that of out-movements 24. 50% of all movements have been made by people under 20 years of age and 24% of all movements have been recorded for the age group 20-29 years.

Migration to places outside the project area is more frequent for females than for males. Most of the out-migration was registered for the age group 20-29 years. Only two movements were registered to the other places within the project area. The losses in the 1970 population caused by death were 1.4% for males and 2.2% for females.

Data on the new population since 1970 have been given in Table 19. Most of the in-migrants came from outside the project area. 18.9% Of the females and 40.7% of the males came from places within the project area, mostly from sector V. It should be kept in mind that the p.m. group was not registered during the 1970 WHO survey.

Geographical aspects.

Most of the in-migrants (59,5%) came from outside the project area, including Misungwi Settlement. 90% Of all in-migrations took place within a radius of \pm 30 km. 22 People of the out-migrants went to a place outside the project area. 10 People moved out to places more than 30 km. away from the survey area (41.5%).

Motives of migration.

The following conclusions are considered as the most important (Table 20):

- following or joining relatives / parents is the most frequent motivation for migration for both sex groups (48.7%);
- physical environment as an economic factor for migration is lacking entirely;
- 50% of the motivations for migration in the female group are related to marriage or divorce;
- in only 48% of all cases school or work were mentioned as motives for migration.

REFERENCES

- (1) Bureau of Resource assessment and land use planning (BRALUP), (1971) Preliminary report of the Sukumaland Interdisciplinary Research project, Dar es Salaam.
- (2) Heynen, J.D., (1968). Development and education in Mwanza district, Tanzania: A case study of migration and peasant farming, Bronder-offset, Rotterdam.
- (3) Ntirukigwa, E.N. (1971). The land tenure system and the building of ujamaa villages in Geita: a case study of Kalebezo, in: Building ujamaa villages in Tanzania, Tanzania Publishing House, Dar es Salaam.
- (4) Ruysenaars, J., (1972). Interim report of a social survey on population movements and water-use activities in Sector II, Misungwi area, October-December, 1971.
- (5) Varkevisser, C.M., (1967), Village organization in Sukumaland. Mimeo.
- (6) Varkevisser, C.M., (1969), Growing up in Sukumaland, in: Primary education in Sukumaland, Tanzania, Wolters-Noordhoff Publishing, Groningen (Netherlands).

TABLE 1: COMPOSITION OF THE POPULATION IN DECEMBER 1971 AND MAY 1972

(SECTION II)

Village	Age group	1971				1972			
		N	F	T	%	N	F	T	%
MWAMBOLA	P.M.	3	11	16	6.9	7	12	19	8.0
	MON.	30	42	72	32.1	30	43	73	30.9
	O.A.	72	71	143	61.9	72	72	144	61.0
	Total	107	124	231	100.0	109	127	236	100.0
ITALE/ MITINDO	P.M.	3	1	4	3.4	5	3	8	6.7
	MON.	20	12	32	27.6	19	11	30	25.2
	O.A.	43	37	80	69.0	43	38	81	68.1
	Total	66	50	116	100.0	67	52	119	100.0
MITANDA	P.M.	4	3	7	5.6	5	4	9	7.9
	MON.	21	21	42	33.3	22	21	43	31.8
	O.A.	40	37	77	61.1	42	37	79	60.3
	Total	65	61	126	100.0	69	62	131	100.0
MBELA	P.M.	8	9	17	4.9	9	8	17	5.1
	MON.	42	55	97	28.3	42	55	97	28.9
	O.A.	114	155	269	66.8	112	109	221	66.0
	Total	164	179	343	100.0	163	172	335	100.0
MASAWE	P.M.	6	3	9	7.3	7	6	13	9.8
	MON.	18	21	39	31.5	18	21	39	29.5
	O.A.	36	40	76	61.3	38	42	80	60.6
	Total	60	64	124	100.0	63	69	132	100.0
TOTAL	P.M.	26	27	53	5.6	33	33	66	6.9
	MON.	131	151	282	30.0	131	151	282	29.6
	O.A.	305	300	605	64.4	307	297	605	63.5
	Total	462	478	940	100.0	471	482	953	100.0

Sex-ratio 1971 = 96.65

Sex-ratio 1972 = 97.72

Sex-ratio Mwambola 1972 = 85.83

Sex-ratio Itale/Mitindo = 128.65

Sex-ratio Mitanda = 111.29

Sex-ratio Mbela = 94.77

Sex-ratio Masawe = 91.30

Key: P.M. = pre-monitor group (0-2 years)

MON. = monitor group (2-9 years)

O.A. = over age group (10 years and over)

TABLE 2: NATURE OF CHANGES IN THE POPULATION BETWEEN 1971 AND 1972 FOR AGE AND SEX GROUPS.

	P1(Dec.'71)		+B		+Mi		-D		-MO		+RD		P2(May '72)	
	no	%	no	%	no	%	no	%	no	%	no	%	no	%
P.M. Males	26	100	7	26.9	0	-	0	-	0	-	0	-	33	126.9
P.M. Females	27	100	7	25.9	0	-	0	-	2	7.4	1	3.7	33	114.8
M.- Males	131	100	0	-	2	1.53	0	-	2	1.53	0	-	131	100.0
M.- Females	151	100	0	-	1	0.66	0	-	3	1.99	2	1.32	151	99.99
O.A. Males	305	100	0	-	6	1.97	0	-	4	1.31	0	-	307	100.66
O.A. Females	300	100	0	-	10	3.33	1	0.33	11	3.67	0	-	298	99.33
Total	940	100	14	1.49	19	2.02	1	0.11	22	2.34	3	0.32	953	101.38

Migration Rate: $\frac{Mi - Mo}{Pn} = 4$

Migration Balance: $Mi - Mo = Q21$

Note: The total number of in- and out-migrants includes 6 movements within Sector II.

TABLE 5 : NUMBER OF MOVEMENTS FOR AGE AND SEX GROUPS (SECTOR II)

Age	Frequencies			Proportions		
	Males	Females	Total	Males	Females	Total
0 - 1	-	2	2	-	4.88	4.88
2 - 5	4	4	8	9.75	9.75	19.51
6 - 9	-	1	1	-	2.44	2.44
10 - 14	1	4	5	2.44	9.75	12.19
15 - 19	7	6	13	17.92	12.80	30.72
20 - 24	-	4	4	-	9.75	9.75
25 - 29	-	5	5	-	12.80	12.80
30 - 34	1	-	1	2.44	-	2.44
35 - 39	1	1	2	2.44	2.44	4.88
40 - 44	-	1	1	-	2.44	2.44
45	-	-	-	-	-	-
Total	14	27	41	34.18	35.82	70.00

Note: The total number of in-and out migrants includes 6 movements within Sector II.

TABLE 4 : THE OUTGOING POPULATION SINCE DECEMBER 1971 (SECTOR II).

Ages	Popula- tion Dec. '71		Dead until May/1972		Moved out to other house in sector		To other sector within pilot area		To out- side pilot area		Remaining on May/72		Net losses as propor- tions of age/ sex groups in 1971 - population		
	a		b		c		d		e		a-(b+c)		(b+c)		
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	T
0 - 1	27	26	-	-	-	-	-	1	-	1	-	-	-	2.85	1.9
2 - 5	72	87	-	-	-	-	2	1	-	1	-	-	-	1.15	0.63
6 - 9	61	62	-	-	-	-	-	1	-	-	-	-	-	-	-
10 - 14	54	55	-	-	-	-	-	2	-	-	-	-	-	-	-
15 - 19	44	22	-	-	1	1	-	1	2	1	-	-	4.55	4.55	4.55
20 - 29	57	83	-	-	-	1	-	1	-	3	-	-	-	3.61	3.14
30 - 44	84	69	-	-	-	-	-	1	1	-	-	-	1.19	-	-
45 - 59	40	42	-	-	-	-	-	-	-	-	-	-	-	-	-
60 +	23	32	-	1	-	-	-	-	-	-	-	-	-	2.13	1.82
Total	462	478	-	1	1	2	2	8	3	6	-	-	0.65	1.46	1.06

TABLE 5 : THE NEW POPULATION SINCE DECEMBER 1971 (SECTOR II).

Ages	Population 1972 (by)		Not Registered before		New born		From within sector II			From other sector		From outside pilot area		Total new		Real new part of population in %		
	a		b		c		d			e		f		g		(b + c + f)		
	M	F	M	F	M	F	M	F	P	M	F	M	F	M	F	M	F	F
0 - 1	34	32	-	1	7	7	-	-	-	-	-	-	-	7	9	20.53	23.53	22.72
2 - 5	72	66	-	1	-	-	-	-	1	1	1	1	2	3	3.14	2.27	1.83	
6 - 9	61	61	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10 - 14	55	55	-	1	-	-	-	-	-	1	1	-	1	2	1.33	1.33	1.02	
15 - 19	45	22	-	-	-	-	1	1	1	-	2	2	4	3	4.44	3.91	0.60	
20 - 29	57	32	-	-	-	-	-	1	-	2	-	2	-	4	-	3.24	1.44	
30 - 40	34	69	-	-	-	-	-	-	-	1	1	-	1	1	1.19	-	0.63	
45 - 59	40	42	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
60 +	23	31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Total	471	432	-	3	7	7	1	2	2	4	5	5	15	21	2.55	3.11	2.63	

TABLE 6 : MIGRATION RATES AND MIGRATION BALANCES SINCE DECEMBER 1971
MOVEMENTS WITHIN THE PILOT AREA.

Ages	Mid. Popula- tion P _M		A - B (-)		B - A (+)		Migration Rates		Migration balance	
	M	F	M	F	M	F	M	F	M	F
0 - 1	50.5	29	-	- 1	-	-	-	3.45	-	- 3.45
2 - 5	72	87.5	- 2	- 1	+ 1	+ 1	4.17	2.23	- 1.39	-
6 - 9	61	61.5	-	- 1	-	-	-	1.63	-	- 1.63
10 - 14	54.5	55	-	- 2	-	+ 1	-	5.45	-	- 1.02
15 - 19	44.5	22	-	- 1	+ 1	-	2.25	4.55	+ 2.25	- 4.55
20 - 29	57	82.5	-	- 1	-	+ 1	-	2.42	-	-
30 - 44	64	62	-	- 1	-	+ 1	-	2.50	-	-
45 +	63	75.5	-	-	-	-	-	-	-	-
Total	459.5	460	- 2	- 3	+ 2	+ 4	0.85	2.50	-	- 0.35

TABLE 8: MOTIVATIONS FOR MIGRATION ACCORDING TO AGE AND SEX GROUPS (INFORMATION FROM HEADS OF HOUSEHOLD) (SECTOR II).

	M	M	M	M	M	L	F	F	F	F	F	TOTAL	TOTAL
	0-1	2-9	10-19	20-44	45 +	TOTAL	0-1	2-9	10-19	20-44	45 +	F	%
Come to stay with relatives	-	5	2	-	-	7	-	1	1	-	-	2	9(25.7)
Marriage	-	-	-	-	-	-	-	-	3	5	-	8	8(22.8)
Following parents	-	1	-	-	-	1	1	2	1	-	-	4	5(14.3)
Disease	-	-	1	1	-	2	1	-	-	1	-	2	4(11.4)
Miscellaneous	-	-	-	1	-	1	-	1	-	1	-	2	3(8.5)
divorce	-	-	-	-	-	-	-	-	1	2	-	3	3(8.6)
work	-	-	2	-	-	2	-	-	-	-	-	-	2(5.7)
Own wish	-	-	-	-	-	-	-	-	-	1	-	1	1(2.8)
Total	-	6	5	2	-	13	2	4	5	10	-	22	35
in %	-	17.1	14.3	5.7	-	17.1	5.7	11.4	17.1	28.6	-	62.8	100

TABLE 9 : THE HOUSEHOLD-BUDGET OF COTTON FARMERS IN MWANZA DISTRICT: CASH INCOME AND EXPENDITURE MAY - 31ST OCTOBER 1966 (IN PROPORTIONS).

MONTH	CASH INCOME	ORDER	CASH EXPENDITURE	ORDER
May	8.6	6	9	6
June	10.8	5	11.4	5
July	16.2	3	16.7	4
August	23.4	2	19.9	2
September	25.1	1	23.6	1
October	15.9	4	19.4	3
Total	100.0 %		100.0%	

Source: Central Statistical Bureau: Dar es Salaam, 1967.

TABLE 10 : LAID TENURE AND ALLOCATION OF SHAMBAS

Statements		Heads of Household			Ten-Cell Leaders		
		Yes	No	No Answ.	Yes	No	No asw.
1. All shambas belong to the Nzengo	no	124	38	3	15	3	-
	%	75	23	2	83	17	-
2. All shambas are property of the Banamhala	no	79	82	4	7	11	-
	%	48	50	2	39	61	-
3. Shamba are given to newcomers by the Banamhala		70	92	3	10	8	-
	%	42	56	2	56	44	-
4. Shamba are given to newcomers by their relatives	no	149	15	1	16	2	-
	%	90	9	1	89	11	-
5. Shambas are given to newcomers by the Ten cell leaders	no	153	11	1	15	3	-
	%	93	6	1	83	17	-
6. Shambas are given to newcomers by the Ward Officer	no	46	114	5	3	15	-
	%	28	69	3	17	83	-

TABLE 11: THE VILLAGE AUTHORITY

Statements	Heads of Household			Ten-cell leaders			
	Right	Wrong	No answ.	Right	Wrong	No answ.	
1. Ten-cell leaders have the task to inform the people when there is something to do with ponds.	no	6	148	11	-	17	-
	%	4	90	6	-	100	-
2. The Banamhala discuss things that are important to the Nzengo.	no	148	10	7	15	2	-
	%	90	6	4	88	12	-
3. The Banamhala discuss the proposals made by the Ngogo-Ntale. (headman)	no	153	6	6	15	2	-
	%	93	4	4	88	12	-
4. The Banamhala discuss the proposals made by the TANU-officials.	no	153	5	7	17	-	-
	%	93	3	4	100	-	-

TABLE 12: MEMBERSHIP OF VILLAGE ORGANIZATIONS.

Do you belong to one of these organizations?	Heads of household		Relatives	
	no	%	no	%
Basumba	21	13	16	12
Banamhala	99	60	2	1
Bagikulu	29	17	104	78
No membership	16	10	12	9
Total	165	100	134	100

TABLE 13: WHO ARE RESPONSIBLE FOR CLEANING PONDS.

Statements		Heads of household			Ten-cell leaders		
		Right	Wrong	No answ.	Right	Wrong	No answ.
1. Women clean drinking ponds.	no	154	10	1	17	-	-
	%	93	6	1	100	-	-
2. The Banamhala are watchmen on the days the Basumba are cleaning the ponds.	no	54	92	19	3	14	-
	%	33	56	11	18	82	-
3. The Banamhala always help the Basumba when there is something to do with the ponds.	no	152	-	13	17	-	-
	%	92	-	8	100	-	-
4. The Banamhala show the Basumba how to clean the ponds.	no	114	34	17	11	6	-
	%	69	21	10	65	35	-
5. The Banamhala examine wether the ponds are still clean.	no	96	15	18	8	9	-
	%	58	31	11	47	53	-
6. The Bagikulu examine wether the ponds are still clean.	no	137	16	12	15	2	-
	%	83	10	7	88	12	-

TABLE 14: WATER-USE HABITS IN RELATION TO AGE AND SEX (IN %).

Activities done by	Heads of household									Relatives							
	(sex)			Female			Total			Male			Female			Total	
	(age)	0-9	10-19	20+	0-9	10-19	20+	Tot.%	N	0-9	10-19	20+	0-9	10-19	20+	Tot.%	N
Fetching drinking-water	-	-	2	17	26	54	100	305	-	1	2	19	30	48	100	267	
Washing clothes	5	16	19	5	19	36	100	446	6	17	22	6	18	31	100	417	
Bathing	14	15	20	14	15	22	100	711	14	15	21	13	15	22	100	615	
Swimming	32	27	3	22	12	4	100	109	37	15	3	34	9	2	100	65	
Watering cattle	33	31	10	15	10	1	100	134	32	26	8	18	12	4	100	130	
Washing utensils	1	1	2	23	28	45	100	316	-	1	1	23	29	46	100	280	
Bathing young children	-	-	-	2	30	68	100	164	-	1	1	1	31	66	100	146	
Washing vegetables	-	1	1	16	29	53	100	222	-	1	1	23	29	46	100	217	

TABLE 15: CHANGING THE USE OF PONDS FROM THE DRY TO THE RAINY SEASON.

Are you going to use a different pond in the rainy season, for the following water activities:	Heads of household			Relatives		
	Yes	No	N	Yes	No	N
Collecting water	47	53	165	54	46	134
Washing clothes	79	21	165	82	18	134
Bathing	76	24	162	81	19	132
Swimming	73	27	37	88	12	25
Watering cattle	84	16	56	90	10	52

Note: The respondents included in this Table are those for whom a certain water activity has been recorded.

**TABLE 16: AGE AND SEX DISTRIBUTION OF THE SAMPLE POPULATION
OF SECTOR V IN 1970 AND 1972.**

Ages	1970(January)				1972(June)			
	Frequencies				Frequencies			
	M	F	T	T	M	F	T	T
0- 1	5	10	15	5.4	3	11	14	4.5
2- 5	19	16	35	12.8	16	19	35	11.4
6- 9	24	16	40	14.6	28	12	40	13.0
10-14	21	12	33	12.0	28	19	47	15.3
15-19	6	9	15	5.4	14	12	26	8.4
20-29	19	24	43	15.7	21	21	42	13.6
30-44	27	20	47	17.2	28	24	52	16.9
45-59	13	20	33	12.0	17	18	35	11.4
60+	10	2	12	4.3	12	4	16	5.2
Total	144	129	273	100	167	140	307	100

TABLE 17: DEMOGRAPHIC EQUATIONS FOR ROUGH AGE GROUPS.

	P1=1970	+B	+Mi	-D	-Mo	+ Rd	P2=1972
PM	15	13	4	-	-	-18	14
MON	75	9	10	1	3	-15	75
OA	183	-	28	4	21	+32	218
Total	273	22	42	5	24	- 1	307

Key: B = birth
 Mi = immigration
 D = death
 Mo = outmigration
 Rd = registration deficiencies

TABLE 18. LOSSES IN THE 1970 POPULATION BY DEATH AND OUT-MIGRATION.

	population in 1970		deaths untill May 31, 1972		to other house within sector		to other sector within project area		to outside project area		re-maining on May 31, 1972		real losses as proportions of age/sex groups in 1970 population	
	A		B		C		D		E		A-(B+E)		B+E in %	
Age	M	F	M	F	M	F	M	F	M	F	M	F	M	F
2-5	19	16	1	-	-	-	1	-	-	2	18	14	5.2	12.
6-9	24	16	-	-	-	-	-	-	-	-	24	16	-	-
10-14	21	12	-	-	-	-	-	-	2	1	19	11	9.5	8.
15-19	6	9	-	-	-	-	-	-	1	1	5	8	16.6	11.
20-29	19	24	-	1	-	1	-	-	2	6	17	17	10.5	29.
30-44	27	20	-	-	-	-	-	-	1	3	26	17	3.7	15.
45-59	13	20	1	1	-	-	-	-	2	1	10	18	23.0	10.
60+	10	2	-	1	-	-	-	-	-	-	10	1	-	50.
total	139	119	2	3	-	1	1	-	8	14	129	102	7.1	14.

TABLE 19. THE NEW POPULATION IN SECTOR V SINCE 1970.

Age	Population 1972 (June)		Not registered before		New Born		From within sector V		From other sector		From outside project area.		Total New		Real new part of population.	
	A		B		C		D		E		F		G		(B+C+F) %	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
0 - 1	3	11	-	-	1	12	-	-	-	-	-	-	1	12	33.3	109
2 - 5	16	19	-	-	4	5	2	2	1	-	1	2	8	9	31.3	36.8
6 - 9	28	12	-	-	-	-	2	-	-	-	4	-	6	-	14.3	-
10 - 14	28	19	-	-	-	-	-	1	-	-	-	3	-	4	-	15.8
15 - 19	14	12	-	-	-	-	1	-	1	1	3	1	5	2	21.4	8.3
20 - 29	21	21	-	-	-	-	-	1	-	-	2	4	2	5	9.5	19
30 - 44	28	24	-	-	-	-	2	1	1	-	1	1	4	2	3.6	4.2
45 - 59	17	18	-	-	-	-	-	-	1	-	-	2	1	2	-	11.1
60+	12	4	-	-	-	-	-	-	-	-	-	1	-	1	-	25
Total	167	140	-	-	5	17	7	5	4	1	11	14	27	37	11.4	22.1

TABLE 20. MOTIVES FOR MIGRATION.

	males				females				total	
	2-14	15-19	30+	sub total	2-14	15-29	30+	sub total	no.	%
Following parents came/ went to stay with relatives, home	6	4	1	11	5	2	2	9	20	48.8
marriage	-	-	1	1	-	8	1	9	10	24.4
divorce	-	-	1	1	-	1	1	2	3	7.3
disease/fear of witchcraft	-	-	3	3	-	-	2	2	5	12.2
school/work/ miscellaneous	-	-	3	3	-	-	-	-	3	7.3
total	6	4	9	19	5	11	6	22	41	100.0