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Socio-Economic Baseline Survey, Nuba Mountains, Sudan, Final Draft Report

DanChurchAid

Socio-economic

Baseline survey

Nuba Mountains, Sudan

Final draft report

DanCurchAiD

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1 Executive summary

The purpose of this study is to make a socio-economic baseline assessment of the Nuba Mountains, Sudan. The baseline assessment relates directly to DanChurchAid's (DCA) Humanitarian Mine Action (HMA) program in the region. The primary purpose of the survey is to prepare a socio-economic impact study of HMA in the Nuba region in 2-3 years. Thus, the results of the report should be seen as benchmarks for future studies. However, the study could also inform current development initiatives in the region.

The main bulk of the report focuses thus on a number of socio-economic indicators. These indicators are based on the one hand on the households' subjective evaluation of their situation and on the other hand on objective socio-economic indicators.

The assessment contains five main parts: First, a section on the methodological considerations of the study. Second, a description of the general characteristics of households in the Nuba area. Third, an analysis of the socio-economic conditions of the households. Fourth, an analysis of water, education and health issues related to the households. Finally a short section on the issue of displaced persons.

Method

The results are based on 896 quantitative household responses in 20 villages. The households were sampled along two main analytical domains: 1) Mine-situation of the village 2) Location of the village in the plains or in the mountains.

Household description

The average household has seven members, and 73 % of all the households have eight members or less. The age distribution of the households is typical for most development countries consisting of a very young population. 35 % of the household members are below 10 years of age.

Many households have not stayed in the village for very long. Only 50 percent of the households have lived in their village for more than 5 years.

The mine situation in the village is a strong determinant for the number of years a household have stayed in a village. Households have on average only spent around 12 years in contaminated villages compared to 24 years in mine-free villages. The average for the whole population of household is 16 years. Only 40 % of the households have lived in their village for more than five years in contaminated areas.

The by far most common house construction in the Nuba Mountains is a mud house with a grass roof, which is used by 60 % of households.

80 % of the households are Islamic, while 20 % are Christian.

Poverty

The poverty level of the households is measured with two general indicators: by a poverty self-assessment by the households and by five objective socio-economic indicators: a) meals per day, b) dependence on foreign aid, c) dependence on their own agricultural production, d) number of livestock, and e) consumption of crops.

Two key background conditions have a marked influence on the poverty levels of the households. In general terms, households living in the plains tend to be less poor than household living in the mountains and households that have lived in the village for a longer period of time tends to be less poor than households with a shorter stay.

In an absolute sense, however, most households in the area must be considered poor.

Around half of the households feel that they are worse of now than they were two years ago. Only 36 % think that they are better off. When the households assess their own level of poverty, 81 % think that they are either poor or very poor. Households living in the mountains feel poorer than people living in the plains. The more sorghum that is consumed per household member the poorer does the household consider themselves. This indicates that the households that are very reliant on sorghum cannot afford other crops and thus they consider themselves poorer. The more cattle (cattle per household member), the less poor the household considers itself. Malaria also plays a role on the poverty self-assessment of the household. The more cases of malaria per household member the poorer the household considers itself.

57 % of the households only get 2 meals a day, while 40 % get 3 meals or more. Households in the plains tend to consume more meals than households in the mountains.

43 % of the households have received foreign aid in the last year. About 25 % of these are very dependent on foreign aid, i.e. about 10 % of the all the respondents. Although households in the plains are somewhat better off, they tend to receive more foreign aid than household in the mountains.

About 29 % of the households are dependent entirely on their own agricultural products and do not do any trading at all. About 34 % percent of the households have more than two hours to the nearest market place indicating that trading is very difficult for these households.

The most common livestock in households are poultry, goats and cattle. The average household has around 3 goats, 1 cattle and 3 poultry, but more than 25 % of the households do not own any livestock at all. Households in the plains and households that have stayed longer in the village tend to own more livestock.

The most common crop consumed in the household is sorghum followed by ground nut, copi and sesemy. A typical household consumes 14 bags of sorghum a year. Households that have lived longer in a village tend to consume more bags of crops in a year.

Water

The most common source of drinking water is a public hand pump, which is used by 93 % of the households. The traditional (unprotected) well that is potentially hazardous to the health is used by 18 % of the households.

17 % of the respondents have to walk more than one hour to reach a water station. 44 % of the respondents have to wait more than one hour at the water station indicating that these stations can be very congested. There are large differences between the villages in how long their inhabitants have to walk to and wait at the water station.

13 % of the respondents have especially problematic access to water, since they have to walk more than one hour to reach the water station and wait more one hour at the station to get water.

Education

Generally around 1/3 of the children do not attend school. There is a strong gender bias in relation to school attendance: Boys attend school more frequently (75 % of all household with boys in school age) than girls (54 % of all households with girls in school age).

School attendance for boys is more frequent in mine free areas than in contaminated areas. Moreover, girls in Christian families attend school more frequently than girls in Muslim families.

On average the student-teacher ratio is around 50 raging from 31 in the village with the best conditions to 82 in the village with the worst conditions.

Health

About 3/4 of the respondents think there is a health facility in their area. 47 % of these respondents state that it takes more than one hour to get to the health facility.

The most important barriers for health treatment are lack of health facilities, not good enough health facilities and lack of medicine and medical supplies. Generally, the respondents evaluate the condition of the health facilities very poorly.

There is tendency that the barriers for health treatment are perceived as larger in contaminated areas, by household that have lived for a relatively short period of time in a village and by Muslim families.

The health facilities are in general not very well staffed. Most common health personnel are nurses followed by medics, while doctors are very rare.

The by far most common disease is malaria followed by dysentery, diarrhea and rheumatism.

Displaced persons

More than half of the households (59 %) have displaced persons not living with the family. One can expect quite an influx of persons, since around 75 % of the displaced intent to return in the future probably as a result of the successful peace in the south. The survey shows that the most common place that persons are displaced to is Khartoum, accounting for around 58 % of all families.

2 About the report

The field work of the survey was conducted from February 12 to April 27, 2005 by a field team consisting of eight Sudanese nationals supervised by DCA Mine Risk Education Coordinator, Adam Gibriel.[1]

Overall coordination of the survey was done by external consultant Jakob Mathias Wichmann, who made two field trips to Nuba Mountains, Sudan in February and April, 2005. This report was prepared by the consultant.

The report sections below present the findings on the different socio-economic variables and is based on 896 household responses. It also in many cases put forward explanations by looking at correlations between the socio-economic indicators and key background variables. Only correlations that statistically significant are presented. If background variables are not presented either via a regression analysis or via a descriptive cross tabulation it means that there is *no* statistical significant correlation.

This document presents the main results of the survey consisting of 896 household respondents in the Nuba Mountains and has the following sections:

- Methodological considerations

- Description of the households in the Nuba Mountain area

- Income and poverty indicators

- Education

- Water

- Health

- Resettlement and displaced people

- Annexes

2.1 Background and purpose of the survey

As part of addressing the informational gaps on socio-economic conditions in the Nuba Mountains, DCA proposed to conduct a socio-economic baseline study in selected areas in the Nuba Mountains. The goal of this survey is to

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[1] The data was also entered by the team via the software Microsoft Access. Analysis was completed in the statistical package SPSS by the consultant.

bridge some of the informational gaps presently existing with the purposes of achieving the following aims:

- To design a study that would develop baseline socio-economic indicators for a later impact assessment of DCA humanitarian mine action in the Nuba Mountains.

- As a spill-over effect, the study is also able to give assessment of the current picture of socio-economic conditions in the Nuba Mountains.

The survey consisted of two questionnaires:

- A questionnaire that collects information on a household level.

- A short community questionnaire that collects key information on a village level.

3 Methodological considerations

3.1 Sample size and analytical domains

The total sample size was estimated to be approximately 900 households. This size could be altered as the project progresses due to the uncertain circumstances of the survey.

The actual sample size of 894 households is sufficient to compare the key analytical domains and establish a socio-economic profile of the Nuba Mountains, which are the main outputs of the survey. The sample size however does not allow detailed indicators of different villages and sub areas. The sampling was conducted along the two analytical domains that are described below since no sample frame existed in the Nuba Mountains, i.e. census of other relevant statistical data exist from which to select the households randomly.

The key analytical domains that are identified in this regard are:

Plain areas versus mountains areas. The Nuba Mountains are characterised by plains and mountains. One would expect that socio-economic indicators will differ according to this distinction.

Mine contaminated, mine contaminated areas that will be cleared and areas without mines. Of special relevance for this survey is whether area in question is contaminated by mines since comparison of contaminated and non-contaminated areas is of vital importance for the baseline survey and the later impact survey. Moreover socio-economic development should occur in the areas that are cleared due to improved access to land, health and water.

The overall guideline for the selection of survey clusters is presented in the table below:

Table 1: Key analytical domains and household responses

	Mine con-taminated	Mine con-taminated, expected to be cleared	Mine-free areas	Total
Plains	6 % (53)	29 % (257)	16 % (141)	50 % (451)
Mountains	15 % (133)	15 % (133)	20 % (179)	50 % (445)
Total	21 % (186)	44 % (390)	36 % (320)	100 % (896)

This sampling as depicted in the table results in the following number of responses in each of the analytical domains, which should make comparison possible:

Table 2: Number of responses per analytical domain

Analytical domains	Number of responses
Plain area	451
Mountain area	445
Contaminated area	186
Contaminated, but expected to be cleared	390
Mine-free area	320

The number of responses per village is depicted below:

Table 3: Number of households interviewed per village

Village name	Number of household responses	Percentage of all households in the sample	Total number of households in the village
1. Abayad	53	5,9%	139
2. Al weday	42	4,7%	163
3. Andulu	39	4,4%	88
4. Ato/Kalandi	42	4,7%	218
5. Deliba	43	4,8%	184
6. Kacha/Tona	46	5,1%	2004
7. Kafina	38	4,2%	300
8. Katala	41	4,6%	64
9. Kalkada	51	5,7%	500
10. Katala	43	4,8%	786
11. Katang	49	5,5%	782
12. Kauda/Shar opar	38	4,2%	364
13. Korongo	49	5,5%	844
14. Kudi	39	4,4%	855
15. Regafie	43	4,8%	376
16. Regal El marafin	50	5,6%	748
17. Talodi	51	5,7%	7000
18. Teamin	49	5,5%	350
19. Wali/Abosae da	42	4,7%	674
20. Wali/Alsoog	48	5,4%	634
Total	896	100	

The following sections develop the sample strategy for the socio economic baseline survey.

The sample frame for the survey is the villages in the Nuba Mountain area. The sampling is complicated due to the lack of reliable census data in the Nuba region since there is no:

- Data on the number of households in the villages

- Data on the number of persons that reside in the villages

The areas to be surveyed will be picked according to the analytical domains described in the previous section. The areas are thus the following:

- Mountain - contaminated

- Mountain - contaminated, but expected to be cleared in the next 1,5 years

- Mountain – mine-free

- Plain – contaminated

- Plain – contaminated, but expected to be cleared in the next 1,5 years

- Plain – mine-free

In each cluster 2-4 villages will be picked for collection of data.

The objective of the sampling – apart from comparing the analytical domains in the baseline survey – is to be able to make three comparisons in relation to the impact study:

- To compare cleared areas to mine-free areas.

- To compare cleared areas to contaminated areas.

- To compare the baseline results and to the impact results in the cleared areas.

These outputs should give a good measure of the impact of mine clearance.

Some challenges are posed to this survey design:

First, a special challenge is posed with regards to making the distinction between areas that are "contaminated, but expected to be cleared" and areas that are "contaminated and will not be cleared (in the foreseeable future)". The reason for this is that the places that are selected for clearance are done so in coordination with UNMAS and not solely by DCA, mean-

ing that DCA at this time has no exact knowledge of which areas will be tasked for clearance. There are no totally adequate solutions to this challenge, but the following actions will be taking to curb the challenge:

- Closely coordinate the selection of areas with DCA HMA Sudan programme, especially Operations Manager and Programme Manager as well as UNMAS, who are responsible for the overall coordination of mine-clearance.

- Choose areas that are in the process of being decontaminated by the DCA.

Second, the sampling has to take into account that the survey area has been war-torn for several years and is still suffering from numerous minefields and UXO. The preparation of the survey, thus have to take into account that there are several roads and areas cannot be entered by the data-collection team, which is also a constraint to the sampling.

3.2　　Sampling strategy

The survey team has a composition of one Team Leader (Adam Gabril) and 8 assistant researchers. The survey team forms two field teams that will be responsible for collecting data. Team leader, Adam Gabriel will coordinate the work of the field teams, be responsible for the survey and supervise the data-entry.

In each village that will be visited a responses from 40-50 households will be collected, meaning that the team will visit around 20 villages to collect data with the result of approximately 600-800 household responses. The data collection and data entry period is estimated to take 6 weeks.

To select the households to be surveyed a 3-stage sampling strategy will be employed as described in the section below.

3.3　　Implementation of sampling stages

With the sampling design as depicted above in table 4, the implementation of the sampling stages is quite simple.

First, areas are selected that meet the criteria described in section 3 above. The areas selected as "expected to be cleared" are all categorised as high priority areas by UNMAS.[2]

Second, villages in the areas will be selected that cover the areas.

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[2] The consultant had a meeting with UNMAS coordinator, Jim Sawatzky where high priority areas were determined via an "impact survey for prioritization" conducted by UNMAS

Counties/localities and villages selected for the survey is depicted in table 3 below:

Table 4: Counties/localities and villages selected for the survey

Region	County/ local-ity	Villages[3]	Mine situation	Mountain/plain
Western Jebels	Dilling 1	• Wali/Abosaeda • Katala • Wali/Alsoog	Mine Contami-nated	Mountains
Eastern Jebel	Dilling 2	• Abayad	Contaminated	Plain
Eastern Jebels	Kadogli 1	• Andulu • Ragafie	Mine Contami-nated (expected to be cleared)	Plain
Western Jebels	Dilling 3	• Deliba • Ato/Kalandi • Teamin • Kajala	Mine Contami-nated (expected to be cleared)	Plain
Eastern Jebels	Kadogli 2	• Katcha/Tona • Korongo • Kafina	Mine Contami-nated (expected to be cleared)	Mountains
Western Jebels	Dilling 4	• Rugol al Mar-fien • Al weday • Katang	Mine-free	Plain
Eastern Jebels	Rashad	• Kauda/Sharop ar • Kudi • Talodi • Kalkada	Mine-free	Mountains

Following the key analytical domains the localities/counties are distributed as follows:

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[3] CPS coordinates are collected for all the villages for repetition of the survey in the villages.

Table 5: Selected areas and analytical domains

	Mine contaminated	Mine-contaminated, expected to be cleared	Mine-free areas
Mountain	Dilling 1	Kadogli 2	Rashad
Plains	Dilling 4	Kadogli 1 & Dilling 3	Dilling 2

Third, inside the village the households are also selected via random sampling. The next section explains the procedure used for this.

3.4   Sampling inside the villages

The final sampling stage requires choosing a certain number of households at random with equal probability in each of the villages selected by the previous sampling stages.

One method of doing this is known as the household listing operation. This requires establishing the complete inventory of all households in these villages – a field task known as the *household listing operation*. Subsequently the required number of households is selected randomly. This method although being the most reliable is not chosen in this survey due to time and resource constraints.

Instead, the method that will be utilised is systematic random sampling, including the following steps:[4]

- The interviewers will contact the village chief or another knowledgeable person in the village to get the approximate number of households in the village.

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[4] Most importantly when interviewers do sampling inside a cluster is that there are rules for the sampling and the interviewers do not choose at their own will. Interviewers tend to prefer to talk to people that are similar to themselves and thus the houses that interviewers go to are not typical and may be biased.

- The number of households in the village is divided by 45, which the number of responses that are expected from the survey. This creates the sampling interval (e.g. 3, meaning every third house is selected).

- The survey team will walk around the village together with a guide appointed by the village chief marking the houses according to the sampling interval, i.e. number of households in the village/45.

4 Description of the households

The following section presents key characteristics of the households in the Nuba mountain area. These characteristics presented are;

- Size of the household

- Age and gender distribution in the households

- Years of the household in the villages

- Religion of the households

- Type of house construction of the households

The household characteristics shall work as key background variables for the analysis later in the report.

4.1 Main results

The following are the main results of the section:

- The average size of the household is around 7, and 73 % of the households have 8 members or less.

- The age distribution of the households is typical for most development countries consisting of a very young population. 35 % of the household members are below 10 years of age.

- Only 50 percent of the households have stayed in the villages more than 5 years

- The mine situation in the village is a strong determinant for the number of years a household have stayed in a village. Households have on average only spend 11,7 years in contaminated villages and 24,3 years in mine-free villages. The average for the whole population of household is 16 years.

- The by far most common house construction in the Nuba Mountains is a mud house with a grass roof, which is used by 60 % of households.

- 80 % of the households are Islamic, while 20 % are Christian.

4.2 Size of the households

The households have an average size of 6.9 household members and the median household has a size of 6.

Figure 1 below depicts the distribution of household sizes. It shows that the most common number of persons in a household is 6, which is the case 14 % of the time. Furthermore one can observe a step decline from households with 6 six members to households with 9 members. 73 % of the households have 8 members or less.

Figure 1: Distribution of household sizes
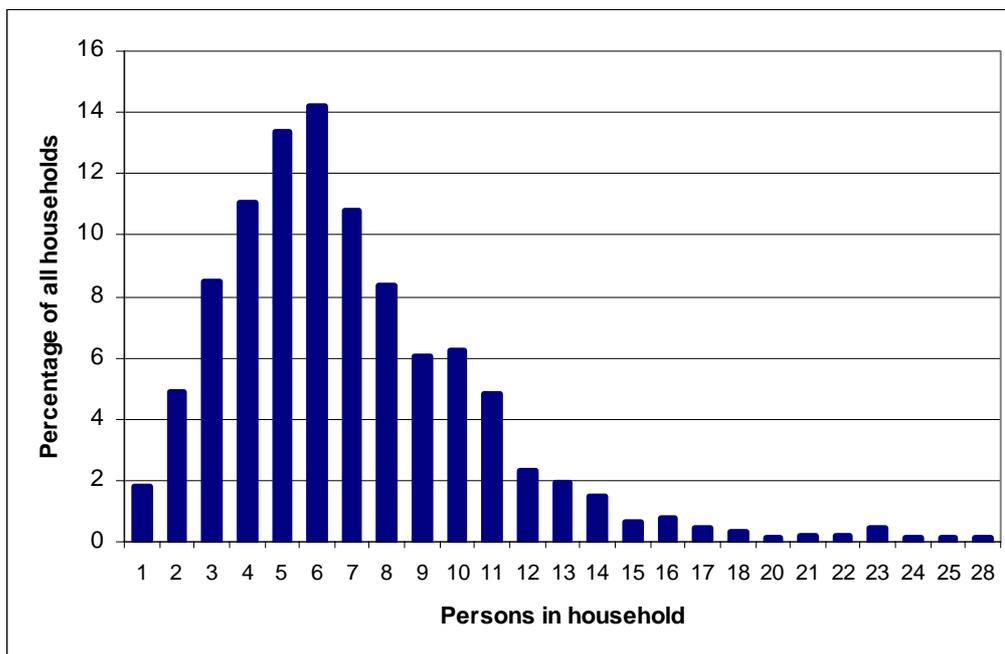
4.3 Age and gender distribution in households

The age and distribution of the households have the following characteristics as depicted in the figure 2 below: The age distribution is typical for most development countries since a large proportion of the inhabitants are young, 35 % between 0 and 9 years of ages. Only around 10 % of the population is above 50 years of age.

Figure 2: Age distribution in households
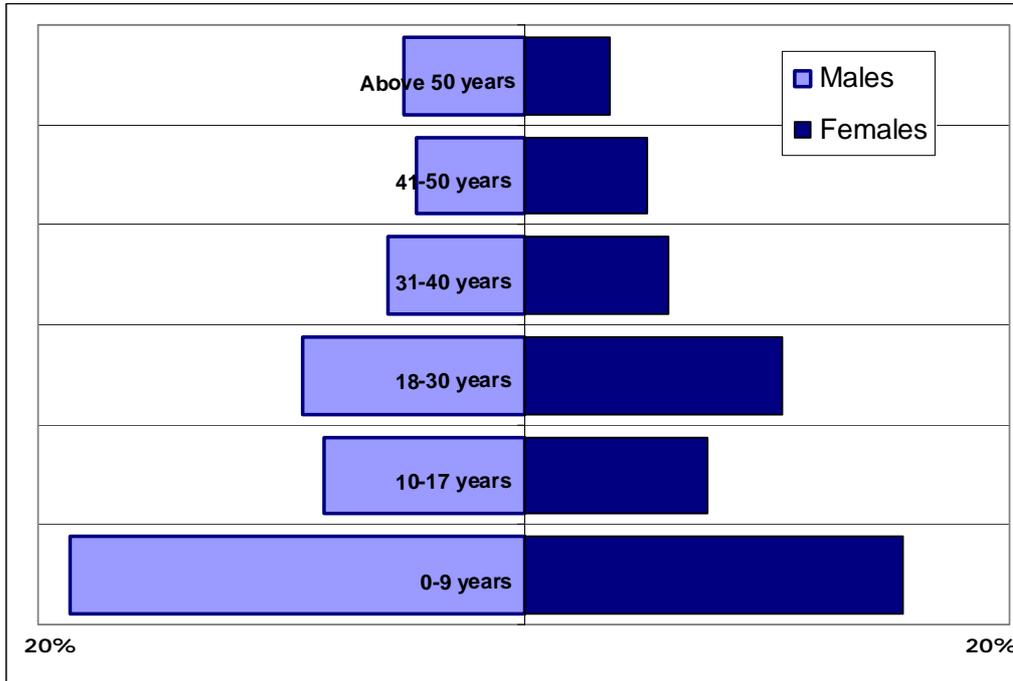
Overall 51 % of the sample is male and 49 % is female. However there are differences in the different age brackets. As depicted in the figure below, males are more strongly represented in the four age-brackets between 0-17 years of age, while the females have a stronger representation in three age brackets between 18 and 50 years of age.

Figure 3: Gender distribution in different age-brackets
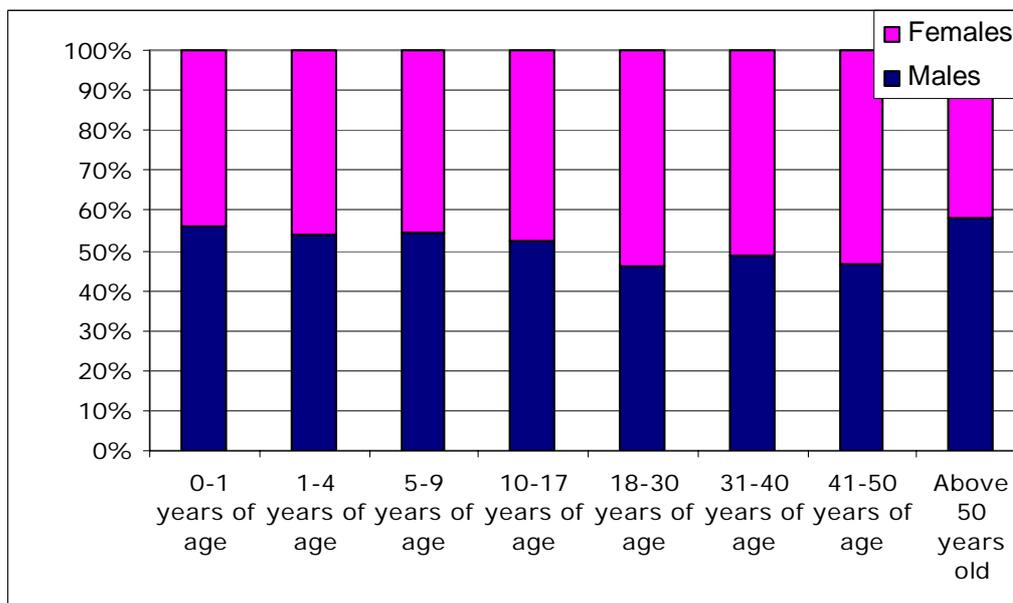
4.4 Years in the village

If one looks at how long the households have lived in the villages, some interesting conclusions can be drawn.

Figure 4 below shows the picture graphically. The curve "percentage of households" shows the percentage of households that have lived one year, two years, three years and so on in a particular village. The curve "survival" that starts with a 100 percent (all of the households) shows how many households remain of all the households when households with one year in the village, two years in the village and so on is deducted from the total number of households. The curve "cumulative percentage" shows the per- centage of household that has lived in the household 1 year + the percent- age living the village 2 years and so on.

The main results are that only 50 percent of the households have stayed in the villages more than five years. If one looks at the cumulative percentage line that is the inverse of the household survival line, it clearly shows that there is a sharp decease in the number of years the households have lived in the village between 0-5 years. Beyond 5 years the decrease in the num- ber of household becomes less as the slope turns less step.

Figure 4: Households years in the village
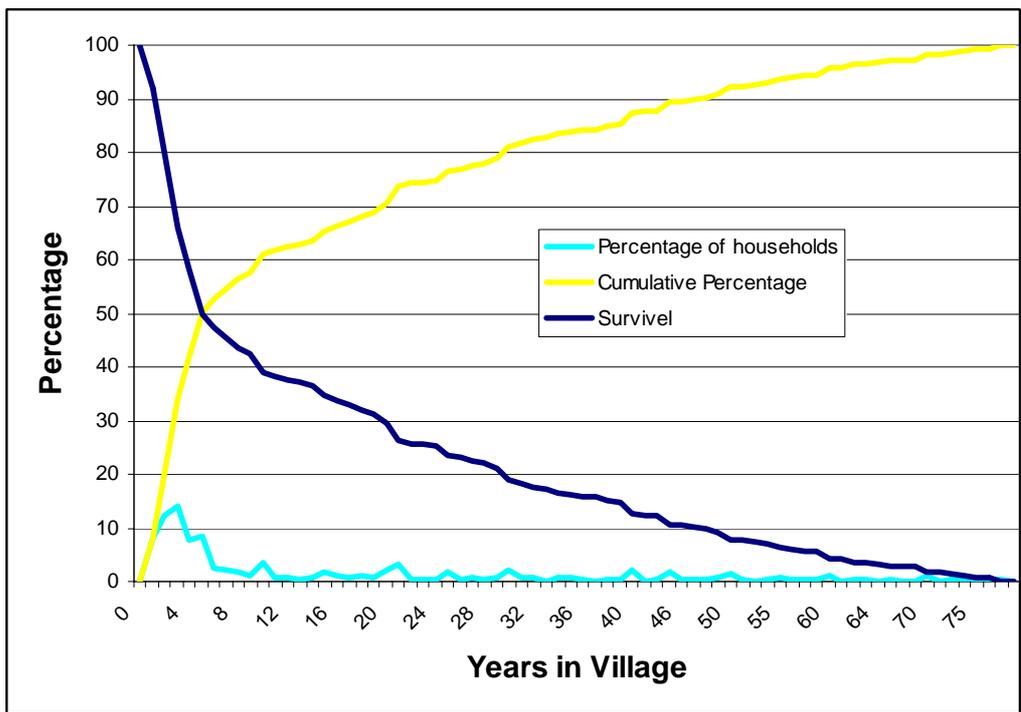
The mine situation in the village is not surprisingly a strong determinant for the number of years the households have stayed in the villages. This probably has to do with the fact that there is a strong correlation between mine contamination and the war activity there have been in a specific village. The figure below depicts the situation quite clearly by comparing the contaminated and mine-free areas. The figure below depicts how the age of the households in the village in contaminated and mine-free areas respectively. Les than 40 % of the households in contaminated villages have lived in the village more than six years, while more than 70 % of the household in mine-free villages have lived in the village mire than six years.

Figure 5: Years in the village and mine contamination
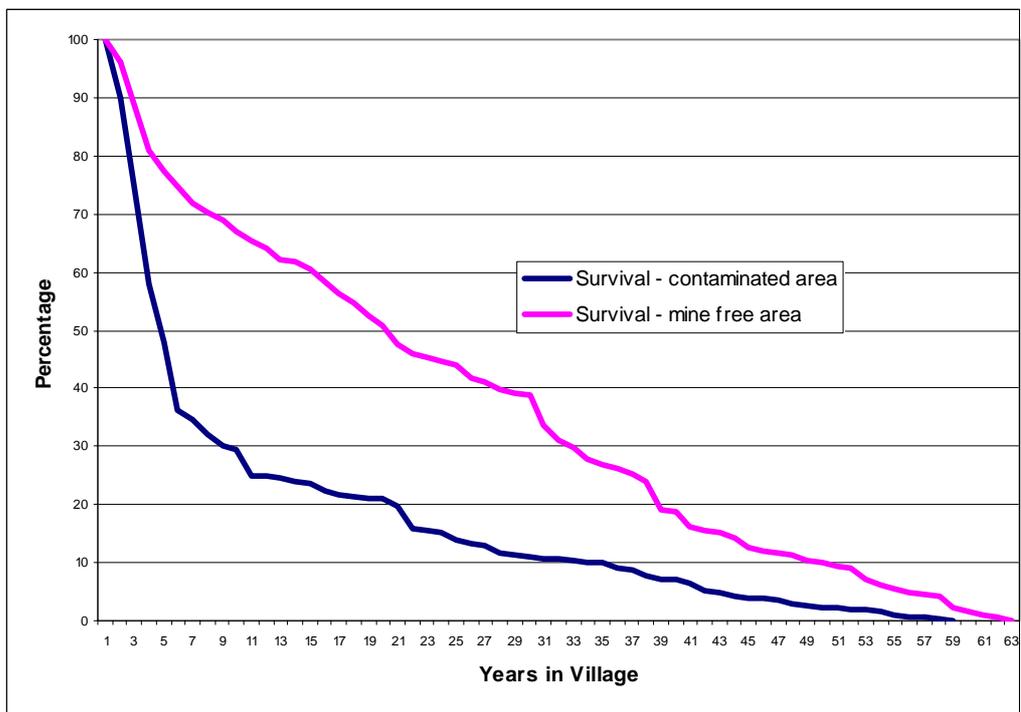
This picture is confirmed by looking at the table below, that shows that households on average have spend 11,7 years in contaminated villages and 24,3 years in mine-free villages with the average for the whole population being around 16 years.

Table 6: Mine situation and years in the villages

Mine situation	Average years in the village
Contaminated villages	11,7 (283)
Mine-free village	24,3 (536)
Total	16,1 (819)

4.5 Type of house construction

The house construction is typically in poverty assessments a strong indictor for poverty since the household typically uses any surplus of cash to construct better houses.

The table below shows the types of dwellings that the households live in. Accordingly the most common dwelling is a mud house with grass roof, next most common dwelling are grass hood with grass roof and stone hood with grass roof. The table also shows that brick houses are very uncommon and very few have other types of roof than grass roofs.

Table 7: What type of dwelling is it? - best quality house of the household.

Type of dwelling	Percentage
Grass house without roof	0 % (4)
Grass house with grass roof	19 % (167)
Stone house with grass roof	16 % (146)
Mud house with grass roof	60 % (533)
Brick house with grass roof	4 % (39)
Brick house with iron roof	1 % (5)
Total	**100 % (894)**

4.6 Religion

Religious affiliation is often an important socio-economic indicator. The table below shows that a large majority of the households are Muslims, while a minority is are Christians and an insignificant number of households are either traditionalist or other types of religion.

Table 8: Religion

	Percentage
Christian	20 % (180)
Islam	78 % (694)
Traditionalist	2 % (16)
Total	**100 % (890)**

5 Socio-economic indicators

One of the main objectives of the survey was to develop socio-economic indicators that will function as baseline indicators for a later impact survey. The selection process of the indicators was the following: Hans Otto Sano from The Danish Institute of Human Rights made a gross-list of indicators based on his own observations on a trip to the area in the fall of 2004 and on focus group discussions carried out by researcher from DCA in 2003. On the background on this list, discussions with local DCA Staff, desk research and field testing of the questionnaire, the consultant developed the final list of socio-economic indicators. The list is presented below:

- Poverty self-assessment

- Meals per day

- Dependence on foreign aid

- Access to markets, i.e. trade possibilities.

- Household livestock

- Household consumption of crops

- Health

- Access to water

- Access to education

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                                                          ┌─── Dependence on
                                                          │    foreign aid
                                                          │
                                                          ├─── Meals per day
                                                          │
                              ┌──────────────────┐        ├─── Access to markets
                              │ Poverty indicators │◄──────┤
                              └──────────────────┘        ├─── Livestock
 ┌────────────────────┐       │                           │
 │ Poverty/socio economic │◄──┤                           ├─── Crops
 │      assessment        │   │                           │
 └────────────────────┘       │                           ├─── Health
                              │                           │
                              │                           ├─── Access to water
                              │   ┌──────────────────┐     │
                              └───│ Poverty self assesment │  └─── Access to education
                                  └──────────────────┘
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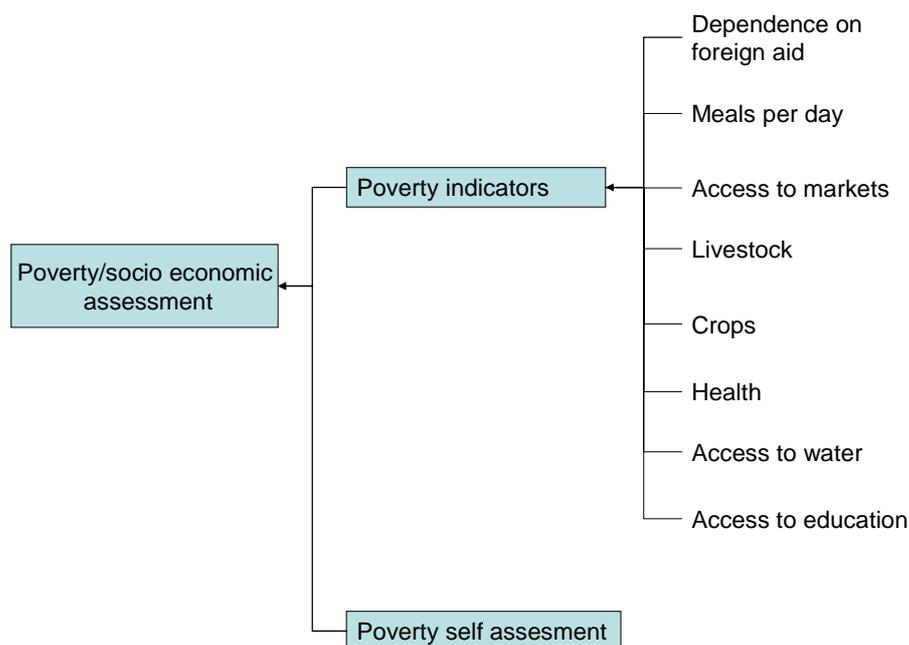
5.1 Main results

The main results of the survey on Socio-economic indicators are the follow-ing:

- Around half of the households feel that they are worse of now than they were two years ago. Only 36 % think they are better off.

- When the household assessed their own level of poverty, 81 % think that they are either poor or very poor. Households living in the mountain feel poorer than people living in the plains. The more sorghum that is consumed per household member the poorer does the household consider itself. This indicates that the households that are very reliant on sorghum cannot afford other crops and thus they consider themselves poorer. The more cattle (cattle per household member), the less poor the household considers itself. Malaria also plays a role on the poverty self-assessment of the household. The more cases of malaria per household member the poorer the household considers itself.

- 57 % of the households only get 2 meals a day, while 40 % gets 3 meals or more. Households in the plains tend to consume more meals than households in the mountains.

- 43 % of the households have received foreign aid in the last year. About 1/4 of these are very dependent on foreign aid, i.e. about 10 % of the whole of all the respondents.

- About 29 % of the households are dependent entirely on their own agricultural products and do not do any trading at all. About 34 % percent of the households have more than two hours to the nearest market place indicating that trading is very difficult for these households.

- The most common livestock in households are poultry, goats and cattle. The average household has around 3 goats, 1 cattle and 3 poultry, but more than 25 % of the households do not own any livestock at all. Households in the plains and households that have stayed longer in the village tend to own more livestock.

- The most common crop consumed in the household is sorghum followed by ground nut, copi and sesemy. A typical household consumes 14 bags of sorghum a year. Households that have lived longer in a village tend to consume more bags of crops in a year.

5.2 Socio-economic indicator 1: Poverty self-assessment

Two types of questions were asked in order to evaluate the poverty self-assessment of the households:

- Do you think that the life in this household is better or worse than it was two years ago?

- How do you consider the economic condition of the household members?

The first question tells us something about how the experienced development have been in the Nuba Mountains, while the second questions concerns the poverty self-assessment of the household.

Self-assessment of the development of household

Interestingly as the table below shows that people in general do not think that that they are better off now than they were two years ago. In fact, 49 % thinks they are worse off, while only 36 % thinks they are better off.

Table 9: Do you think that the life in this household is better or worse off than it was <u>two years ago</u>?

	Percentage
Better	36 % (323)
No change	15 % (132)
Worse	49 % (435)
Total	**100 %** **(890)**

However, there are large differences between the villages visited. The figure below shows what percentage of the household answered that they were worse off. For example in Ato/Kalandi less than 10 % thinks that they are worse, while in Regal el Marafin 82 % thinks that they are worse. The data does not offer any explanations on the large differences.

Figure 6: Percentage of households that are worse off than they were two years ago
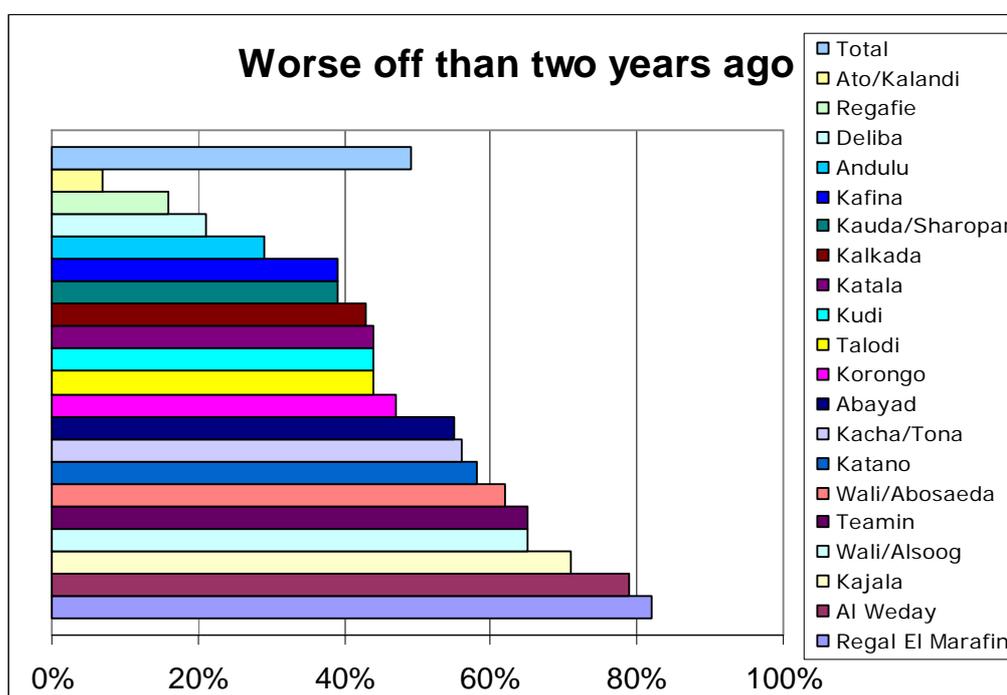
Poverty self-assessment

The respondents were asked to evaluate their own sense of poverty since this is a good indicator as to how the household perceive their life situation.

The table below shows overall people in the Nuba Mountains consider themselves poor. 34 % consider themselves very poor, 47 % poor, 18 % neither poor nor rich and only 1 % consider themselves rich. No one considers themselve very rich.

Table 10: How do you consider the economic condition of the household members?

	Percentage
Very poor	34 % (301)
Poor	47 % (411)
Neither poor nor rich	18 % (159)
Rich	1 % (8)
Very rich	0% (0)
Total	**100 % (879)**

Via a regression analysis it is possible to look at what factors that influence the poverty self-assessment of the households. In other words what can explain that some households consider themselve very poor, while other only poor and other neither rich nor poor.

The regression model yields the following results:

- Households in the mountains feel poorer than households in the plains

- The more sorghum that is consumed per household member the poorer does the household considers itself. This indicates that the households that very reliant on sorghum cannot afford other crops and thus they consider themselves poorer.

- The more cattle (cattle per household member), the less poor the household considers itself. Thus, owning cattle is probably something carrying social esteem and thus influence the households feeling of poverty.

- Not surprisingly does malaria also play a role on the poverty self-assessment of the household. The more cases of malaria per household member the poorer the household considers itself.

These results do not mean that other factors do not play a role in poverty assessment of the household, but that the factors mentioned above are the most important.

The spread of the poverty indicator across the villages visited shows big differences between the villages.

Figure 7: Percentage of households that consider themselves very poor
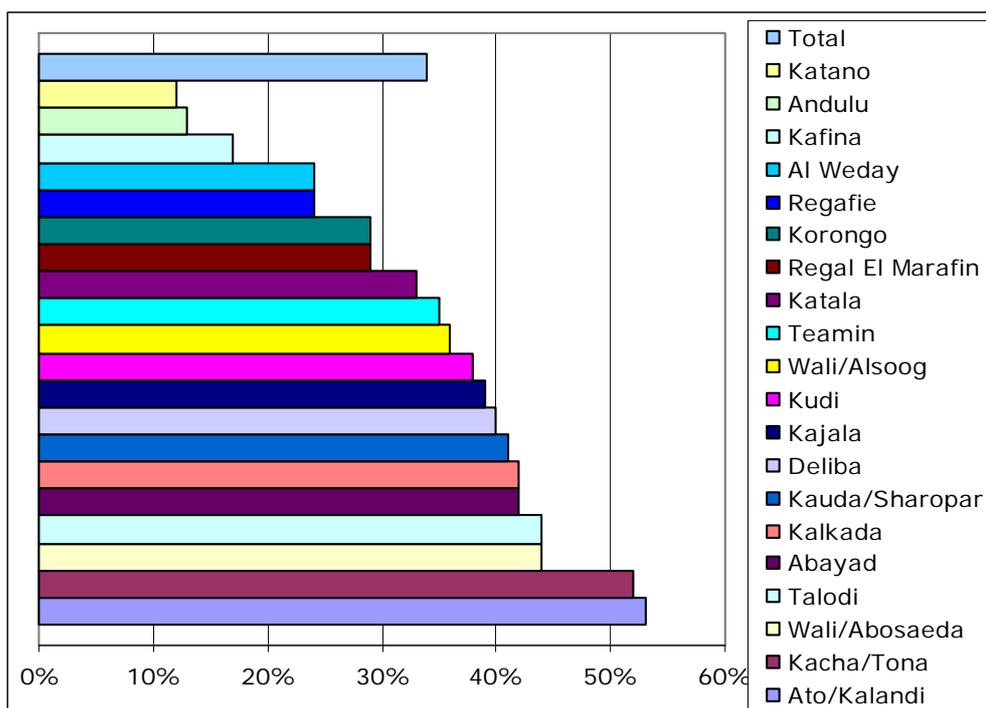
5.3 Socio-economic indicator 2: Meals per day

If one goes beyond the poverty self-assessment of the households and look at more objective measures, a relevant indicator of poverty is how many meals a day the household consume.

The table below shows the results for the whole population of respondents. The majority of the households consume 2 meals a day, while about 4 out of 10 consume three meals a day.

Table 11: How many meals do the members of the household consume in a day?

Meals per day	Percentage
1	4 % (32)
2	57 % (498)
3	38 % (332)
More than 3	2 % (15)
Total	**100 % (877)**

In terms of explaining what the differences in how many meals the households consume the analysis shows that the location of the villages again points to that people living in the mountains have worse living conditions.

The table below shows that people living in the mountains are more likely to eat only two meals a day than people living in the plains.

Table 12: How many meals do the members of the household consume in a day?

	Plains	Mountains	Total
1	4 % (16)	4 % (16)	4 % (32)
2	50 % (225)	64 % (273)	57 % (498)
3	44 % (196)	32 % (136)	38 % (332)
more than 3	2 % (11)	1 % (4)	2 % (15)
Total	100 % (448)	100 % (429)	100 % (877)

5.4 Socio-economic indicator 3: dependence on foreign aid

Another interesting fact about poverty concerns if the household have received foreign aid from an international organization such as World Food Program or another organization. And if so, what proportion of the food is from these organizations.

As the table below shows, about 43 % of the respondents received foreign aid in the last year.

Table 13: Have you received aid from any international aid organisation (World Food Program, Care) in the last year?

Foreign aid	Percentage
Yes	43 % (383)
No	57 % (513)
Total	**100 % (897)**

Two factors can explain what households tend to receive foreign aid. First, households that have lived in the village in a short period of time are more likely to have received aid. Probably this has to do with fact that these households have been moving around the area or returned from a refugee camp, increasing the probability of receiving foreign aid.

Table 14: Foreign aid and years in the village of the household

	Years in village			
Foreign aid	1-3	4-10	More than 11	Total
Yes	52%	35%	39%	42%
No	48%	65%	61%	58%
Total	100%	100%	100%	100%

Second, households living in the plains are also more likely to have received aid. The explanation for this is probably that the plains are more accessible for donors than the mountains.

Table 15: Foreign aid and location of household

Foreign aid	Plains	Mountains	Total
Yes	53%	33%	43%
No	47%	67%	57%
Total	100%	100%	100%

If one looks at the segment of the respondents who have received foreign aid in the last year, it shows that while quite a number of people have received foreign aid, they do not seem very dependent on foreign aid. The table below shows that 43 % have received an insignificant amount of foreign aid and about 27 % of the households who have received foreign is almost entirely dependent on foreign aid.

Table 16: About what proportion of the food in the household are from foreign aid organizations?

	Percentage
Almost all of the food	17 % (65)
More than half, but not all	10 % (39)
Half of the food	10 % (37)
Less than half of the food	21 % (79)
Not very much of the food	43 % (163)
Total	**100 % (383)**

5.5 Socio-economic indicator 4: Access to trade

Two questions were asked in order to assess the accessibility of trade for the households.

- The main sources of food in the households

- The distance to the nearest market place

The response to the first question shows that most households do some kind of trading. 29 % of the household do not trade at all, 22 % trade to a

small degree, while for 41 % percent of the households trading plays a significant role.

Table 17: What is the main source of food for the house-hold? - please say which sentence that describes your household best

	Percentage
We eat only our own agricultural products	29 % (252)
We eat mainly our own agricultural products but we also trade for different food	22 % (190)
We eat our own products, trade for other products and sell our products for money	41 % (360)
We buy most food we eat in our household	5 % (43)
We buy all the food we eat in our household	3 % (28)
Total	**100 % (873)**

Table 13 below gives a good indication of the accessibility of markets for the households and therefore for the possibilities for the households to trade. The table shows that about half of the households have to walk more than one hour to reach a market place.

Table 18: How long do you have to walk to get the market place?

	Percentage
Less than 30 minutes	33 % (290)
Between 30 and 1 hour	16 % (140)
Between 1 hour and 2 hours	17 % (153)
Above 2 hours	34 % (294)
Total	**100 % (877)**

5.6 Socio-economic indicator 5: Household livestock

The fifth indicator of the socio-economic conditions of the household is the number of livestock that the household own. Livestock has traditionally been of high value for the local inhabitants and it is taken as a sense of pride to have livestock, especially cattle. In the table below the average number of livestock per household is listed. Goats are the most common livestock, next comes poultry and cattle is the third most common.

Table 19: Average number of livestock per household

Livestock	Average per household
Poultry (e.g. chicken, duck)	2,9
Goats	3,1
Cattle	1,4
Other animals (donkyes, camels, sheep, pigs)	0,8

The livestock is unequally distributed among the families, with many families having a very limited number or none at all and a small number of families having a large quantity of livestock. The figure below shows the distribution and one can observe that more than 25 % of the families have no livestock, indicating that they are very poor. Furthermore one can see from the figure that a large majority of the households only owns a few livestock.

Figure 8: Households and animals
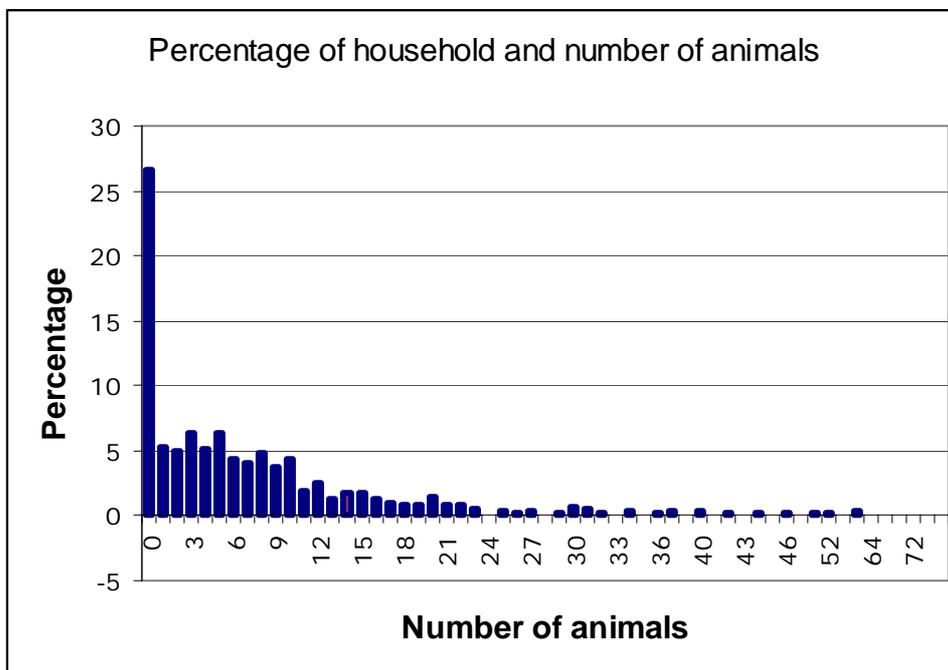
If one looks at what can explain the unequal distribution of animals, then there is a tendency that the longer a household have lived in a village, the more livestock the household has.

Table 20: Average number of livestock and location of household

Years in village	Household_ Animals	Poultry (e.g. chicken, duck)	Goats	Cattle	Other animals (donkyes, camels, sheep, pigs)
1-3	6,7	3,1	2,5	0,7	0,3
4-10	7,3	2,7	2,8	1,0	0,9
>11	10,0	2,8	3,9	2,3	1,0
Total	8,2	2,9	3,1	1,4	0,8

Moreover household living in the plains are better off in terms of the number of livestock.

Table 21: Average number of livestock and years in the village

	All household animals	Poultry (e.g. chicken, duck)	Goats	Cattle	Other animals (donkyes, camels, sheep, pigs)
Plains	8,9	3,0	3,4	1,9	0,5
Mountains	7,5	2,7	2,8	1,0	1,0
Total	8,2	2,9	3,1	1,4	0,8

5.7 Socio-economic indicator 6: Household consumption of crops

Another poverty indicator relevant to the study of the socio-economic conditions of the Nuba Mountains is the crops consumed by the households. The by far most common crop is sorghum. Each household consumes on average 13.9 bags of sorghum, while ground nut is second most consumed crop with on average 1.8 bags per household.

Table 22: Average number of bags per household

Crop	Average number of bags per household per year
Sorghum	13,9
Ground nut	1,8
Copi	1,3
Sesemy	1,3
Maize	0,8
Okra	0,8
Millet	0,1

Again one can observe a tendency that households, who have lived for longer periods in a village, have better conditions of living. The table below shows that households with more than 11 years the same place consumes around 15 bags of sorghum a year, while the households living in a village less than 11 years only consume 13 bags a years. The same tendency can be observed for other crops than sorghum.

Table 23: Average number of crops and years in the village

	Average number of bags per household per year						
Years in village	Sorghum	Maize	Copi	Sesemy	Ground nut	Okra	Millet
1-3	13,3	0,9	1,2	1,2	1,7	0,6	0,1
4-10	13,1	0,8	1,2	1,1	1,7	0,7	0,1
>11	15,1	0,8	1,6	1,5	2,1	1,1	0,2
Total	13,9	0,8	1,3	1,3	1,9	0,8	0,1

In comparing mountain and plain regions another picture occurs. Generally households in the plains consume more bags of crops per years than households located in the mountains with one exception. Ground nut is consumed more often in the mountains than on the plains. This can possibly be explained due to better conditions for this crop in the mountains. Overall the same picture as with the other indicators presents itself, namely, that people in the plains fares better on most socio-economic indicators.

Table 24: Average number of crops and location of household

Location	Average number of bags per household per year						
	Sorghum	Maize	Copi	Sesemy	Ground nut	Okra	Millet
Plains	14,3	0,8	1,4	1,5	1,5	0,8	0,2
Mountains	13,4	0,9	1,2	1,0	2,2	0,7	0,1
Total	13,9	0,8	1,3	1,3	1,8	0,8	0,1

6 Education

To assess the access to education in the Nuba mountain region, the households were asked how many days of the week the children in school age attended primary school and via a household questionnaires the quality of the educational facilities were assessed.

6.1 Main results

The main results pertaining to the access to education are the following:

- Generally around 1/3 of the children do not attend school.

- There is a strong gender bias in relation to attending school: Boys attend school more frequently (75 % of all household with boys in school age) than girls (54 % of all households with girls in school age)

- School attendance for boys are more frequent in mine free areas than in contaminated areas and girls in Christian families attend school more frequently than girls in Muslim families.

- On average the student-teacher ratio is around 50 raging from 31 in the village with the best conditions to 82 in the village with the worst conditions.

6.2 School attendance

The tables below show a clear and perhaps not surprising tendency that boys attend school more frequently than girls. 75 % of the boys in the survey attend school 6 times a week, while 54 % of the girls do the same. Only 21 % of the boys do not attend school at all, while this is the case for 43 % of the girls. Thus, while school attendance is low both for girls and boys – attendance is particularly low for the girls.

Table 25: How many days a week do the boys of the household go to primary school?

	Percentage
6 times a week	75 % (123)
5 times a week	2 % (4)
3 times a week	1 % (1)
1 times a week	1 % (2)
Never	21 % (34)
Total	**100 % (164)**

Table 26: How many days a week do the girls of the household go to primary school?

	Percentage
6 times a week	54 % (80)
5 times a week	2 % (3)
1 times a week	1 % (1)
Never	43 % (64)
Total	100 % (148)

Boys' school attendance correlates with the mine situation in the area. If the area is contaminated, the boys are less likely to attend school. Thus in contaminated areas only 73 % of the boys attend school compared to 87 % in mine free areas.

Table 27: Boys school attendance and mine contamination

Boys school attendance			
Area	**Contaminated**	**Mine-free**	**Total**
Attending school	73%	87%	78%
Not attending school	27%	13%	22%
Total	100%	100%	100%

Similarly girls' school attendance correlated with the religion of the household. Muslim households are less likely to send girls to school than are Christian households as it is depicted in the table below. Only about half of the girls in Islamic households attend school, while this is the case for 75 % of the Christian households

Table 28: Girls school attendance and religion

Girls school attendance			
Household religion	**Christian**	**Islam**	**Total**
Attending school	75%	51%	56%
Not attending school	25%	49%	44%
Total	100%	100%	100%

6.3 Quality of education

As part of the survey 2-3 community questionnaires were collected to reach a better understanding regarding some aspects on a community level. With regards to the quality of education an interesting fact is the student to teacher ratio. In 13 out 20 villages the surveyors were able to obtain reliable numbers with on this ratio by speaking to the head teacher of the community. These results probably also represents a good description of the conditions in the Nuba region as such. The overall average for all the villages is that for each teacher is about 50 pupils. The village with the best pupil to teacher ratio is Talodi with 31 pupils per teacher, the worst is Kudi with 84 pupils per teacher.

Table 29: Pupil teacher ratio

Village name	Teachers	Pupils	Pupil per teacher
Abayad	3	170	57
Kacha/Tona	5	362	68
Kajala	1	63	63
Katala	6	320	53
Katang	5	200	40
Kauda/Sharopar	11	824	75
Korongo	8	652	80
Kudi	8	630	84
Regafie	1	70	70
Regal El marafin	3	173	58
Talodi	60	1887	31
Teamin	6	330	60
Wali/Alsoog	4	185	53
Total	131	6408	49

7 Water

The accessability and quality of water influences the life of people in the area to a great degree. The survey there focused on the following indicators of the water situation:

- The source of water in the villages

- The distance in terms of time to the water station

- The waiting time at the water station

7.1 Main results

In the analysis of the accessability of water in the villages, the following results are relevant to emphasize:

- The most common source of drinking water is a public hand pump, which is used by 93 % of the households. The traditional or unprotected well is used by 18 % of the households.

- 17 % of the respondents have to walk more than one hour to reach a water station. 44 % of the respondents have to wait more than one hour at the water station indicating that these stations can be very congested.

- There are large differences between the villages in how long they have to walk to and wait at the water station.

- 13 % of the respondents have problematic access to water since they gave to walk more than one hour to reach the water station and wait more one hour at the station to get water.

7.2 Sources of drinking water

The prime source drinking for the households as it is shown in the table below is a regular public hand pump, which is very common in the region and used by 93 % of the households.

Interestingly the second most common water source is a traditional well – a primitive well – that is used by 18 % of the households. The type of well is potentially a health hazard.

Table 30: What are the sources of drinking water for the household?

	Percentage
Public hand pump	93 % (835)
Unprotected well (traditional well)	18 % (163)
Protected dug well	5 % (42)
Rivers or ponds, dams	4 % (32)
Unprotected spring	3 % (24)
Rainwater collection	2 % (20)
Borehole	2 % (14)
Protected spring	1 % (5)

Note: The respondents has been allowed to give more one than one answer

7.3 Access to water

To measure the accessability of water in the villages, the households were asked to:

- How long the household members have to walk to get water?

- How long the household members have to wait at the water station?

The former question was put to assess the distance for the household to the water station and the latter question to get an idea how congested the water station is.

The tables below show that around 17 % of the households have to walk more than 1 hour to reach a water station. This covers big differences between the different villages as it is shown by the figure below the table. The figure shows that in one village Kajala almost 90 % of the households have

to walk more than one hour to reach the water station, while in most of the other villages it is significant less.

Table 31: How long do you have to walk to get drinking water?

	Percentage
Less than 30 minutes	64 % (551)
Between 30 and 1 hour	20 % (168)
Between 1 hour and 2 hours	11 % (91)
Above 2 hours	6 % (49)
Total	**100 % (859)**

Figure 9: Percentage of household in the villages with more than one hour walk to the water station
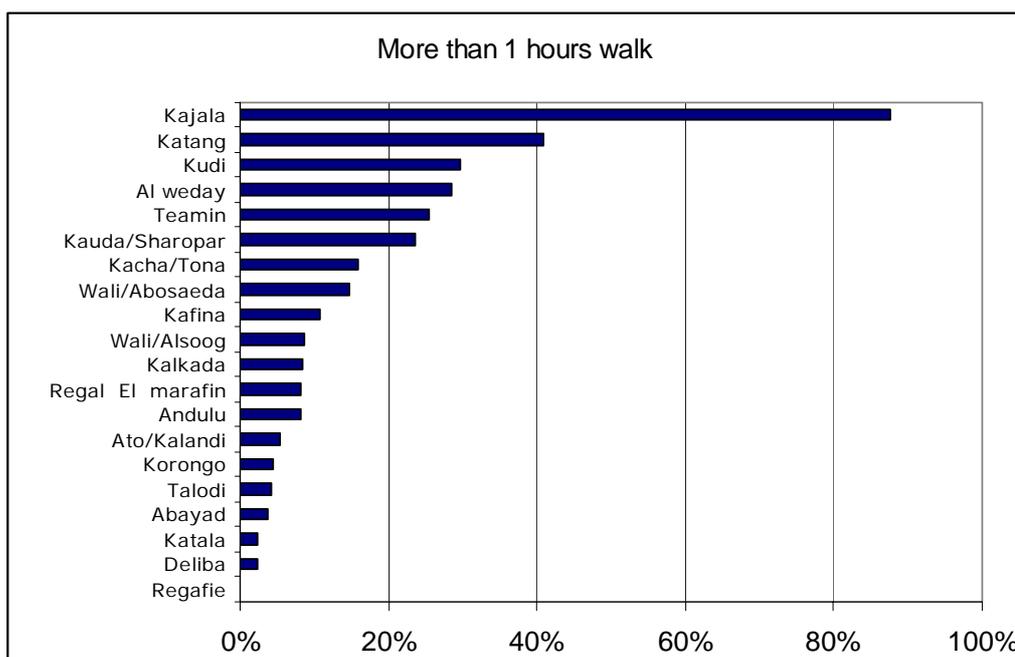
The table below shows that there is significant waiting time in many villages in the Nuba area. 21% of the households have to wait more than two hours each time they get water and 23 % has to wait between one and two hours.

Table 32: How long do you have to wait at the water facility before you get water?

	Percentage
Less than 30 minutes	27 % (237)
Between 30 and 1 hour	28 % (246)
Between 1 hour and 2 hours	23 % (198)
Above 2 hours	21 % (183)
Total	**100 % (864)**

There are also big differences between the villages in terms of waiting time at the water station as it is shown by the figure below that present the percentage of households with more than one hour waiting at the water station.

Figure 10: Percentage of household in the villages with more than one hour waiting at the water station
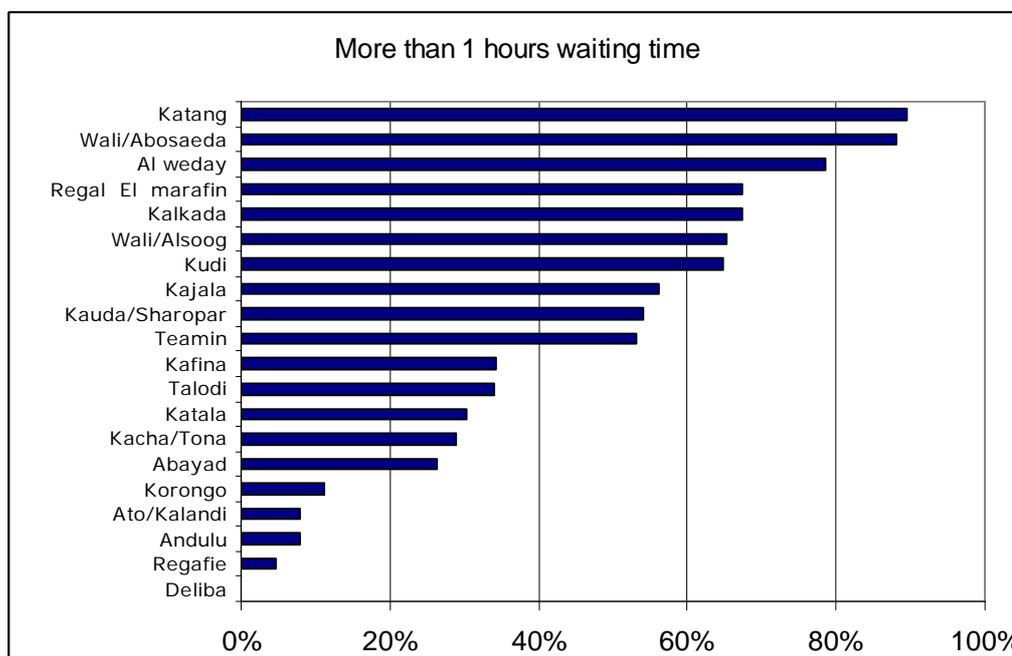
The overall access to water resources can be measured by splitting the respondents into four segments. One segment that have less than one hour walk to and wait at the water station comprises about 52 % of the respondents. This segment has relatively accessible water resources.

In contrast about 13 % of the respondents have very difficult access to water since they both have to walk for more than one hour and wait for more than one hour.

Table 33: Collected walking and waiting time to get water

		Wait at water station		
		Less than one hours	More than one hour	Total
Walk to water station	Less than one hours	52%	32%	84%
	More than one hour	4%	13%	17%
	Total	56%	44%	100%

8 Health facilities

Another important indicator in assessing the life of the people in the Nuba area is the availability of health facilities. The survey focused on the following issues in order to evaluate the health facilities in the villages visited:

- Access to health facilities

- Barriers for health treatment

- Most common illnesses

8.1 Main results

The main results with regards to health issues are the following:

- About 3/4 of the respondents think there is an accessible health facility in their area. 47 % of these respondents state that it takes more than one hour to get to the health facility.

- The most important barriers for health treatment are lack of health facilities, not good enough health facilities and lack of medicine and medical supplies. Generally the respondents evaluate the condition of the health facilities very badly.

- There is tendency that the barriers for health treatment are perceived as larger in contaminated areas, by households that have in a short period of time in a village and by Muslim families.

- The health facilities are in general not very well staffed with health personnel.

- The by far most common disease is Malaria followed by dysentery, diarrhea and rheumatism.

8.2 Accessability to health facility

Around 3/4 of the respondents thinks that there is a health facility in their area, meaning that 1/4 do not think that this is the case.

Table 34: Is there a health facility in your area?

	Percentage
Yes	77 % (685)
No	24 % (211)
Total	**100 % (896)**

Of the respondents who think that there is a health facility in their area a little less than half state that the health facility is more than one hour away.

Table 35: How long do you have to walk to reach the nearest health facility?

	Percentage
Less than 30 minutes	39 % (265)
Between 30 and 1 hour	15 % (104)
Between 1 hour and 2 hours	15 % (100)
Above 2 hours	32 % (216)
Total	**100 % (685)**

8.3 Barriers for health treatment

To look at what the villagers experience as the most important barriers for health treatment, the households were asked to rate different barriers. The most important barrier experienced by the households is the lack of health facilities followed by that the health facilities are not good enough, which is again followed by a lack of medicine and medical supplies.

However the most important conclusion to be derived from results is that the villagers across the board tend to evaluate the health facilities very

badly. On average the respondents agrees with all the statements presented in the figure below.

Figure 11: Barriers for health treatment
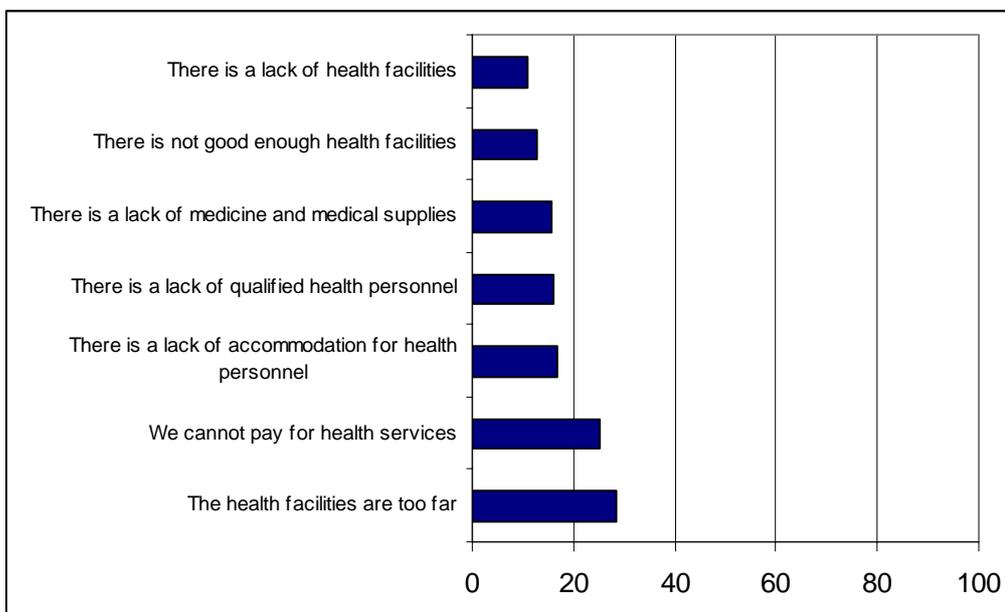
0 = strongly agree, 25 = agree, 50 = neither agree nor disagree, 75= Disagree, 100= strongly disagree

8.4 Analysis of barriers

To analyze what can explain the experienced barriers for health treatment an index is constructed using the 7 statements presented in the figure above. Each statement is included with equal weight and the index constructed so that the value 0 indicates the maximum amount of barriers for health treatment and the value 100 indicates that no barriers are experienced by the local residents.

A regression analysis shows that three main conclusions can be drawn on who experience more barriers than other:

- More barriers to health treatment are experienced in contaminated areas compared to mine free areas

- More barriers are experienced by Muslims than Christian

The bivariate correlations that show the main conclusions are presented in the tables below:

Table 36: Mine situation and barriers for health treatment

Mine situation	Mean on index
Contaminated area	13
Mine-free area	24

Table 37: Religion of household and barriers for health treatment

Religion of the household	Mean on index
Christian	26
Islam	15

8.5 Health personnel in villages

As it is indicated in the section there is a lack of health personnel in the villages, which is documented in the table below. In the 12 villages where data is available, only villages larger village (Talodi) has a doctor working in the village, about half of the villages has a medic, while nearly all of the villages have nurses employed at the health facility in the village. This indicates a severe lack of health personnel.

Table 38: Health personnel

Village name	Doctors	Medics	Nurses
Al weday	0	1	0
Deliba	0	1	1
Kacha/Tona	0	1	1
Kajala	0	1	1
Katala	0	0	1
Katang	0	0	1
Korongo	0	1	1
Kudi	0	0	5
Regal El marafin	0	0	1
Talodi	1	3	40
Teamin	0	0	3
Wali/Alsoog	0	0	1

8.6 Common diseases

The last health indicator recorded in the survey was a listing of the most common diseases experienced in the households.

The results show that malaria is very widespread in the in the Nuba area since the household in average experienced more than six cases of the disease last year. The second and third most common diseases are diarrhea and dysentery followed by rheumatism.

Figure 12: Cases of diseases per household last year

Cases of disease per household last year
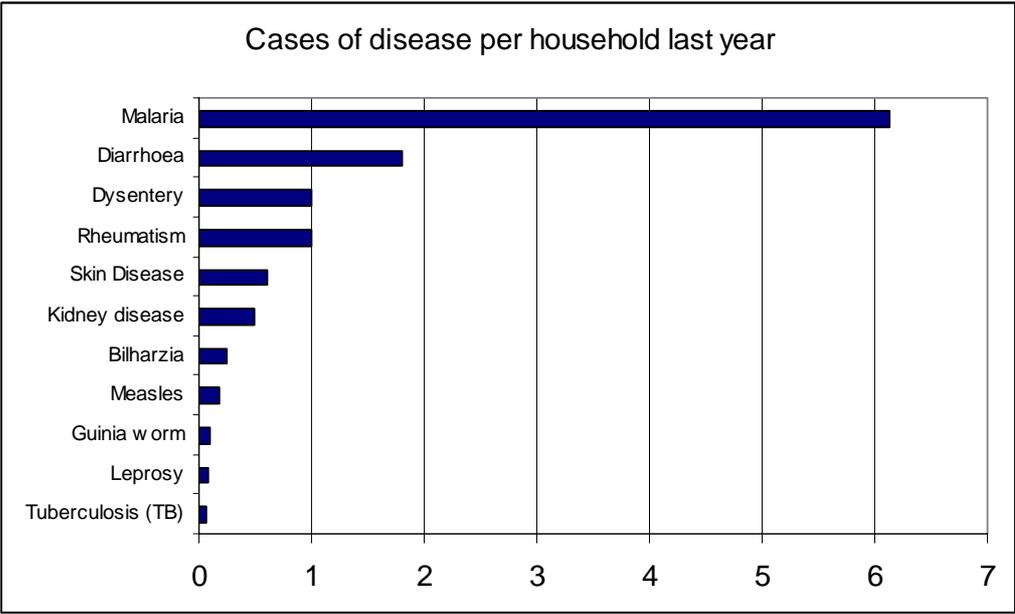
9 Resettlement and displaced persons

The results show – as it is shown in the table below – that it is very common for a household to have displaced persons. More than half of the households (59 %) have displaced persons not living with family. Furthermore one can expect quite an influx of persons, since around 75 % of the displaced intent to return in the future probably as a result of the successful peace in the south. Finally, the survey shows that by far the most common place that persons are displaced to is Khartoum, accounting for around 58 % of all families.

Thus to conclude one can expect quite an influx of people in the family members in the near future since app. 44 % (59%*75%) of all households expect that at least one family member returns in the near future.

Table 39: Are any members of the immediate family refugees or displaced persons?

	Percentage
Yes	59 % (528)
No	41 % (367)
Total	**100 % (895)**

Table 40: Does any of your immediate family members intent to return in the near future?

	Percentage
Yes	75 % (394)
No	9 % (47)
Dont know	16 % (86)
Total	**100 % (527)**

Table 41: To which area/region are the household member(s) displaced?

Khartoum	54% (394)
Blue Nile	3% (22)
Eastern region	5% (37)
Northern region	2% (15)
White nile	2% (16)
South sudan	2% (17)
Northern Kordofan	3% (25)
Outside of Sudan	4% (27)

Note: The respondent has been allowed to give more than one answer

Annex 1 Sampling of Villages

Annex 2: Household questionnaire

Background information about the village and person interviewed:

Survey number:	
Village name:	
Region/state:	
Locality/county:	
Interviewed by:	
Date:	
<u>Name</u> of person interviewed:	
<u>Sex</u> of person interviewed:	A male A female
<u>Age</u> of person interviewed:	

Background information about the household

Question 1:	Please list the household members that resided in your household (including yourself) yesterday by age brackets and sex?	
Category	**Male**	**Female**
a. 0-1 years of age		
b. 1-4 years of age		
c. 5-9 years of age		
d. 10-17 years of age		
e. 18-30 years of age		
f. 31-40 years of age		
g. 41-50 years of age		
h. Above 50 years old		

*Household members are defined as people living sharing the same cooking pot.

Question 2	How long has the household stayed in the village/area?
Years in the village/area	

Question 3:	Which local language does the household speak?		Tick one box only
a. Tira	A 1	b. Shatt	A 2
c. Ajang	A 3	d. Tabania	A 4
e. Kewaleep	A 5	f. Julud	A 6
g. Moro	A 7	h. Talodi	A 8
i. Atoro	A 9	j. Ama	A 10
k. Miri	A 11	l. Kega	A 12
m. Speaks only Arabic	A 13		

Question 4	What religion is practiced in the household?		It is okay to tick more than one box
a. Christian	A 1	b. Islam	A 2
c. Traditionalist	A 3	d. Other	A 4

Question 5	What type of dwelling is it? – best quality house of the household.	Tick one box only
a. Grass hood without roof	A 1	
b. Grass hood with grass roof	A 2	
c. Stone hood with grass roof	A 3	
d. Mud house with grass roof	A 4	
e. Brick house with grass roof	A 5	
f. Brick house with iron roof	A 6	
g. Other, specify		

Resettlement and displaced persons:

Question 6:	Are any members of the immediate family* refugees or displaced persons?	
a. Yes	A 1	If yes continue to question 7
b. No	A 2	If no go to question 9

*Immediate family members are brothers, sons, daughters, parents and grand parents.

Question 7:	Does any of your immediate family members intent to return in the near future?	
a. Yes	A 1	b. No	A 2
c. Don't know	A 3		

Question 8:	To which area/region are the household member(s) displaced?		It is okay to tick more than one box
a. Khartoum	A 1	b. Blue Nile	A 2
c. Eastern Region	A 3	d. Northern Region	A 4
e. White Nile	A 5	f. South Sudan	A 6
g. Northern Kordofan	A 7	h. Outside of Sudan	A 8
h. other, specify			

The life and income of the household:

Question 9	Do you think that the life in this household is better or worse than it was two years ago?	Tick only one box
Better	A 1	
Worse	A 2	
No change	A 3	

Question 10	How do you consider the economic condition of the household members?	Tick only one box
Very Poor	A	1
Poor	A	2
Neither poor nor rich	A	3
Rich	A	4
Very rich	A	5

Question 11	How many of the following types of livestock are owned by the household at present?
Type of livestock	**Number the household own**
a. poultry (e.g. chicken, duck)	
b. goats	
c. cattle	
d. donkeys	
e. camels	
f. sheep	
g. pigs	
h. other, specify	

Question 12	How many bags (90 kilograms) of the crops below did the household consume <u>last year</u>?
Crop	Number of bags
a. Sorghum	
b. Maize	
c. Copi	
d. Sesemy	
e. Ground nut	
f. Okra	
g. Millet	
h. Other, please specify	

Question 13	How many meals do the members of the household consume <u>in a day</u>?	Tick only one box
a. 1	A	1
b. 2	A	2
c. 3	A	3
d. More than 3	A	4

Question 14:	Have you received aid from any international aid organisation (World Food Program, Care) in the <u>last year</u>?	
a. Yes	A	1	If yes continue to question 15
b. No	A	2	If no go to question 16

Question 15	About what proportion of the food in the household are comes from foreign aid organisations?	Tick one box only
a. Almost all of the food	A 1	
b. More than a half, but not all	A 2	
c. Half of the food	A 3	
d. less than half of the food	A 4	
e. Not very much of the food	A 5	
f. none of the food	A 6	

Question 16	What is the main source of food for the household? – please say which sentence that describes your household best	Read all statements for the respondent and tick only one box
a. We eat only our own agricultural products		A 1
b. We eat mainly our own agricultural products but we also trade for different food		A 2
c. We eat our own products, trade for other products and sell our products for money		A 3
d. We buy most food we eat in our household		A 4
e. We buy all the food we eat in our household		A 5
f. We primarily eat food that we receive from the World Food Program (WFP)		A 6
g. We primarily live from charities from other member of the community		A 7

Question 17	How long do you have to walk to get the market place*?
a. Less than 30 minutes	A 1
b. Between 30 and 1 hour	A 2
c. Between 1 hour and 2 hours	A 3
d. Above 2 hours	A 4

* The Market place is defined as a market where one can trade (sell and buy) goods that cover most of the household's needs.

Question 18	How many days a week do the boys of the household go to primary school?	Tick one box only
a. 6 times a week	A 1	
b. 5 times a week	A 2	
c. 4 times a week	A 3	
d. 3 times a week	A 4	
e. 2 times a week	A 5	
f. once a week	A 6	
g. More seldom than once a week	A 7	
h. never	A 8	

Question 19	How many days a week do the <u>girls</u> of the household go to primary school?	Tick one box only
a. 6 times a week	A 1	
b. 5 times a week	A 2	
c. 4 times a week	A 3	
d. 3 times a week	A 4	
e. 2 times a week	A 5	
f. once a week	A 6	
g. More seldom than once a week	A 7	
h. never	A 8	

Question 20	How many "fadan"* does the household own for agricultural production?
Area owned by the household	

*1 Fadan = 4200 m2

Health and water:

Question 21	What are the sources of drinking water for the household?	It is okay to tick more than one box
a. Public hand pump	A 1	
b. Borehole	A 2	
c. Protected dug well	A 3	
d. Protected spring	A 4	
e. Rainwater collection	A 5	
f. Unprotected well (traditional well)	A 6	
g. Unprotected spring	A 7	
h. Rivers or ponds, dams	A 8	

Question 22	How long do you have to <u>walk</u> to get drinking water?	Tick only one box
a. Less than 30 minutes	A 1	
b. Between 30 and 1 hour	A 2	
c. Between 1 hour and 2 hours	A 3	
d. Above 2 hours	A 4	

Question 23	How long do you have to <u>wait</u> at the water facility before you get water?	Tick only one box
a. Less than 30 minutes	A 1	
b. Between 30 and 1 hour	A 2	
c. Between 1 hour and 2 hours	A 3	
d. Above 2 hours	A 4	

Question 24:	Is there a health facility in your area?	
a. Yes	A 1	If yes continue to question 25
b. No	A 2	If no go to question 27

Question 25	How long do you have to walk to get the nearest health unit?	Tick only one box
a. Less than 30 minutes	A 1	
b. Between 30 and 1 hour	A 2	
c. Between 1 hour and 2 hours	A 3	
d. Above 2 hours	A 4	

Question 26	Please rate the statements below regarding the quality of the health unit											
	Strongly agree		Agree		Neither agree nor disagree		Disagree		Strongly disagree		Do n't know	
There is a lack of health facilities	A	1	A	2	A	3	A	4	A	5	A	6
There is a lack of qualified health personnel	A	1	A	2	A	3	A	4	A	5	A	6
We cannot pay for health services	A	1	A	2	A	3	A	4	A	5	A	6
The health facilities are too far	A	1	A	2	A	3	A	4	A	5	A	6
There is a lack of medicine and medical supplies	A	1	A	2	A	3	A	4	A	5	A	6
There is a lack of accommodation for health personnel	A	1	A	2	A	3	A	4	A	5	A	6
There is not good enough health facilities	A	1	A	2	A	3	A	4	A	5	A	6

Question 27	How many cases of the following diseases have the household experienced in the <u>last year</u>?

Diseases	Number
Malaria	
Tuberculosis (TB)	
Cholera	
Guinia worm	
Measles	
Elephantiasis	
River blindness	
Bilharzia	
Leprosy	
Skin Disease	
Dysentery	
Diarrhoea	
Rheumatism	
Kidney disease	
Other, specify	

About institutions in the village:

Question 28	How often do the members of your household participate in the following local institutions and councils?

Activities	Weekly	Monthly	More seldom than monthly	Never	Don't know
Village development commitees/liberation counsils	A 1	A 2	A 3	A 4	A 5
Village council of elders	A 1	A 2	A 3	A 4	A 5
Women's union	A 1	A 2	A 3	A 4	A 5
Youth organisations	A 1	A 2	A 3	A 4	A 5
Village food security committee	A 1	A 2	A 3	A 4	A 5
Religious institutions	A 1	A 2	A 3	A 4	A 5
Sheik	A 1	A 2	A 3	A 4	A 5

Annex 3: Community questionnaire

Question 1:	What is the name of the village?
a. Name of village	

Question 2:	What is the number of persons that reside in the village?
a. Number of persons	

Question 3:	What is the number of households that reside in village?
a.　　Number　　of households/families	

Question 4:	Have any residents in the village received "mine risk education"?	
a. Yes　　　A　1		b. No　　　A　2

Question 5:	Are you aware of any mines close to the village?	
a. Yes	A　1	If yes, continue to question 6
b. No	A　2	If no, go to question 8

Question 6:	Has there been any mine accidents area close to the village?	
a. Yes	A　1	If yes, continue to question 6
b. No	A　2	If no, go to question 7

Question 7:	How many people have been killed or injured in mine accidents in the last two years?
a. People killed in mine accidents	
b. People injured in mine accidents	

Question 8:	Description of the school in the area?							
How many teachers does the school have?							teachers	
How many pupils does the school have?							pupils	
How many days a week is the school open?							days	
Is the school inside a building with roof?	Yes	A	1	No	A	2	Don't know	A	3
Is the school in a building without roof?	Yes	A	1	No	A	2	Don't know	A	3
Does the school have chairs/benches?	Yes	A	1	No	A	2	Don't know	A	3
Does the school have tables?	Yes	A	1	No	A	2	Don't know	A	3
Does the school have blackboards?	Yes	A	1	No	A	2	Don't know	A	3
Does the school have schoolbooks?	Yes	A	1	No	A	2	Don't know	A	3
Does the school supply notebooks/paper?	Yes	A	1	No	A	2	Don't know	A	3
Does the school supply pens?	Yes	A	1	No	A	2	Don't know	A	3
Does the school have chalk?	Yes	A	1	No	A	2	Don't know	A	3
Does the school supply lunch?	Yes	A	1	No	A	2	Don't know	A	3

Question 9	About what proportion of the boys are enrolled at the primary school?	Tick one box only
a. Almost all of the boys	A 1	
b. More than a half, but not all	A 2	
c. Half of the boys	A 3	
d. less than half	A 4	
e. Only a few buys	A 5	
f. none	A 5	

Question 10	About what proportion of the girls are enrolled at the primary school?	Tick one box only
a. Almost all of the girls	A 1	
b. More than a half, but not all	A 2	
c. Half of the girls	A 3	
d. less than half	A 4	
e. Only a few girls	A 5	
f. none	A 6	

Question 11	What types of councils exist in the village?	It is okay to tick more than one box
Village development commitees/liberation counsils	A 1	
Village council of elders	A 2	
Women's union	A 3	
Youth organisations	A 4	
Village food security committee	A 5	
Religious institutions	A 6	
Sheik	A 7	
Other, specify	A 8	
Other, specify	A 9	
Other, specify	A 10	
Other, specify	A 11	

Question 12:	Description of the health facility in the area?								
How many doctors does the health facility have?									Doctors
How many medics does the health facility have?									Medics
How many nurses does the health facility have?									Nurses
Is the health facility inside a building with roof?	Yes	A	1	No	A	2	Don't know	A	3
Is the health facility in a building without roof?	Yes	A	1	No	A	2	Don't know	A	3
Does the health facility have sufficient medicine and medical supply?	Yes	A	1	No	A	2	Don't know	A	3
Is there sufficient accommodation for the health personnel?	Yes	A	1	No	A	2	Don't know	A	3

Annex 4: Data-collection team

Team leader:

- Adam Gibril

Surveyors:

- Awatif Nasser
- Black James
- Farah Philip
- Kuku Langori
- Malka Suliman
- Mashaer Mohammed
- Mohammed Haroon
- Tarig Mohammed

Annex 5: Field implementation

This annex shall shortly touch upon observations made during the implementation in the field. For a more detailed description of the planning of the project, consult the implementation plan by contacting Eva Veble, DCA, or the consultant. The section includes the following headings:

- Employment of interviewers

- Procurement

- The questionnaire

- Training of interviewers

- Field work (data collection)

Employment of interviewers

Employment of good quality interviewers with local knowledge was essential for the success of the project. A thorough recruitment process was completed holding interviews with 17 candidates before choosing 8. The interviewers were all from the area and recruited so that four was from the government side and four was from the SPLM side. This was essential for data-collection to go smoothly. In conclusion the recruitment process was not difficult and it was possible to find qualified people.

Procurement

Procurement is essential for the field to run smoothly. Items that were procured for the data-collection included:

- First aid kid

- Tents

- Beds

- Kitchen equipment

- Blankets

- Food

- Other necessities.

Delays in procurement meant delays in the field work. For optimal use of the international consultant, procurement should be in place before the arrival of the consultant.

Questionnaire

In the development of the questionnaire much was done to keep the questionnaire as short as possible. This proved valuable in the data-collection process, since a shorter questionnaire is easier for interviewers to handle. However, it was the judgement of the interviewers that the questionnaire could have been longer without causing any significant problems.

Training of interviewers

The training of interviewers lasted four days including intensive field testing in two villages.

The training had the following components:

- Short introduction to research methods

- Introduction to research techniques

- Discussions of the questionnaire

- Field testing

- Revision of the questionnaire based on the field testing

The training went smooth and the interviewers adapted quickly to the questionnaire and the field testing situation.

Actual data-collection

Apart from having well trained interviewers key to the data-collection was to deal probably with the communities that was being interviewed.

Each time a data-collection team entered a new community, they were careful to introduce themselves to the authorities. In the case of Nuba Mountains, most often people from the military. It helped significantly that the teams were mixed so that the teams included people from both sides. Only in one village data-collection was not allowed. Upon reaching permission from the military, talks were conducted with the village chiefs.

One day were allocated from moving to one village to another and setting up camp and retrieving the necessary permission in the villages. Each team

was allocated one vehicle, which was of paramount importance for the data-collection.

There were some differences in the efficiency of different interviewers, and one should continue monitoring the interviewers throughout the data-collection process to ensure quality.

Each interviewer had the capacity to collect 7-10 questionnaires a day.

Date entry

The interviewers required some training to be sufficiently equipped to conduct the data entry in a satisfactory manner. The interviewers in this case required basic computer training to be able to perform data entry.

At peak capacity each interviewer assigned to data-entry was able enter between 15-18 questionnaires a day. This indicates that amble time should be allocated for data-entry in future projects.

The data entry was done in Microsoft Access.

Analysis

Analysis was performed by the consultant via the Statistical package SPSS.