

The Study on Upper West Integrated Agricultural Development
in the Republic of Ghana

Final Report

Appendix Q

Village Socio-Economic Survey Final Report

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CHAPTER 1

1 BACKGROUND AND INTRODUCTION OF STUDY

1.1 Introduction

This Village Socio-Economic survey is for the collection of data towards the preparation of the master plan for the JICA sponsored project, “The Study on Upper West Integrated Agricultural Development.”

The necessary bidding process for the selection and contracting of Post Agric Associates as the consulting firm to undertake the studies were done and finalized by the middle of June 2008 between Mr. Sammy Akagbor for Post Agric Associates and Hiroshi Okabe for Kaihatsu Management Consulting, Inc. The field work effectively commence on the 24th of June 2008 after all the deskwork was completed.

1.2 Purpose of Study

The main objective is to collect information necessary for the study. These include agric-related statistics, socio-economic and cultural indicators within the study area.

1.3 Scope of Work

The Scope of works as defined in the terms of reference and data to be collected is captured in the topics as below:

1. Participatory Rural Appraisal (PRA): The drawing of Community and Venn maps
 - Background community information on Social and economic indicators (land tenure, population, social structure, farmers organizations, non-agricultural income sources, etc.)
 - Dissemination of information, transportation/distribution infrastructure, market facilities, storage facilities, and financial system.

2. Collection and analysis of village data
 - Socio-economic conditions, household economy food and utility resources and facilities.
 - Household land tenure, agricultural production, food sufficiency and marketing.
 - Household Nutrition and food quantity

CHAPTER 2

2 APPROACH AND METHODOLOGY

2.1 The Survey Team

The team was led by Mr. Sammy Akagbor, the Managing Consultant of the company; it included Measures Chris Amedo, Seth Amedahe and Enam Akagbor as the appropriate consultants to conduct the data collection in the field. Miss Dela Akuetteh accompanied the team as a data input assistant. The team worked closely with a team of Agric. Staff from the study area. These included the District crop officers from Nadowli, Lawra and Jirapa Districts in the names of Measures Damian Tampoari, James Segtaa and Epiphanus Tuuroziin respectively.

The multistage sampling approach of sampling was adopted for the study. At the higher level, the four districts were selected to represent the socio-cultural diversity of the Upper West Region by the study Team and Regional Directorate of MOFA dully represented by the counterpart staff Mr. Abu Huudu.

Table 2.1 The survey team

Survey Teams	A	Chris Amedo & Epiphanus Tuuroziin with Lipoya Peter as AEA
	B	Enam Akagbor & Damian Tampoari with Bob Dala as AEA.
	C	Seth Amedahe & James Segtaa with Thomas Yelluvie as AEA

Supervisor s: Sammy Akagbor Team Leader, Mr. Abu Huudu and Mr. John Dasaah

Other AEAs in the areas of operation covering the various communities include Mercy Sanna, Daniel Gyema, Charles Yelli, Allan Gumor, Paul Dong, Emmanuel Safo and Richard Chireh

The village selection exercise was purposively to represent the various socio-economic and the agricultural diversity in the district and the Region. And in each district villages with active histories of agricultural intervention and interaction with the MOFA through the agric extension agents were selected

At the same meeting three distinct survey teams of A, B and C were formed to collect the field data. The meeting was purposely for discussions, comprehension, understanding and synchronization of the team members with respect to the questionnaire administration and data collection.

At the meeting it was decided that each of the teams should work independently in their respective districts of operation.

2.2 Details of the Study Area

Tab 2.2 Selected villages of the study area

District	Villages
Lawra	Puffien
	Tome-Kokoduor
	Zakpee
Nadowli	Tabiesi
	Daffiama
	Nanvill
Jirapa	Nyani
	Kogri
Lambusie	Naawuie

2.3 Survey Schedule of Activities

Accordingly the survey was conducted according to the terms of reference of 5 days per village from the 10th to the 26th of September as in the schedule bellow.

Tab 2.3 Questionnaire administration

DATE	TEAMS	VILLAGES
SEPTEMBER 10 TH – 15 TH	A	NYANI
	B	DAFFIAMA
	C	PUFFIEN
SEPTEMBER 16 TH – 20 TH	A	KOGRI
	B	TABIESI
	C	TOME-KOKODUOR
SEPTEMBER 22 ND – 26 TH	A	NAAWUIE
	B	NANVILL
	C	ZEGKPEE

2.4 Sampling Methods and Approach

The selection criteria for the individual household respondents were based on the earlier approach as in the Baseline survey. The system of random stratified sampling with respect to the financial status of the farmer respondents was adopted.

Section A of the questionnaire was administered with the PRA methodology where a cross section of the community members including the chiefs, the elite and opinion leaders the assembly members and other village committee members as well as other farmers all numbering between 25-40 were invited for participation in the discussions. In collaboration with the participants, the Team, the resident AEAs and opinion leaders of the selected villages, the different socio economic classes of the Rich, Medium and poor within the communities were defined.

And accordingly the numbers of individual household respondents were selected based on their socio-economic class status in the community as defined by the group. The synthesis of the class

definitions across the study area corresponds with the salient point as defined in the earlier study and captured as bellow.

2.5 The Respondents

The numbers of the respondents were from 12 households in each village with the couple (husband and wife) answering questions B. In total 108 questionnaires were administered with a sample size of 108 males and females.

In the field the twelve household respondents were selected by the team members before the commencement of the questionnaire administration. The resident AEAs provides a list of 20 families subdivided into classes as defined above. And according to the normal distribution of the sub classes, 2 respondents were selected at random from the poor, 2 from the rich and 8 from the average to sum up to the required 12. This process was repeated at all the selected villages for the questionnaire administration In effect the samples are the representatives of the population on the Upper West Region as captured in the districts and represented in the villages.

2.5.1 The Rich Farmer

He is a person generally a person with enough lands and other socio-economic resources such as other properties as farming tractors and equipments, car or motor cycle. His compound is invariably roofed with galvanized aluminium sheets produces enough food and is never with food security limitations and is usually married to two or more wives

2.5.2 The Average Farmer

He is generally a person with adequate land and other socio-economic resources such as a donkey cart and most farm tools needed for his farming operations. His household might sometimes face food security problems in harsh years and might resort to borrowing. At least part of the compound is sometimes roofed with the galvanized aluminium roofing sheet and generally owns a bicycle.

2.5.3 The Poor Farmer

He is generally farmer with limited land resources for cropping and always has food security problems that invariably results in the consumption of their seed for the following year. His compound is poor in outlook and roofed invariably with only local material. Most of the time he does not own evens a bicycle. Those who are lucky some times come by with an old and rickety one.

2.6 Data Processing and Analysis

Two sets of information were generated from the three districts. Data generated from Section A which was meant to solicit key information from the nine communities were compared among themselves by extracting information onto tables. In some cases graphs were used to compare relationships among the communities. On the other hand data from Section B were edited and entered

into a Statistical Software known as Statistical Package for Social Sciences (SPSS). The data entered were analyzed and information generated (included the total count of respondents that answered a particular question, the mean of that variable, the minimum and maximum as well as the standard deviation) were used to draw conclusions from the study.

2.6.1 Data Processing

After a critical study and appreciation of the questionnaire, the consultants came to the conclusion the SPSS soft ware was appropriate for processing and analysis. It was observed that the multiple variations and data embedded in most of the questionnaire had to be addressed by cross tabulation.

2.6.2 Data Input

The data input was therefore designed with coding and babbling strategies. Every question and sub variation under it was captured into the input data sheet in the SPSS software.

2.6.3 Data Output

The input data was then processed with the software for the output data to be compiled in the same software. Since the data was rather dispersed and difficult for interpretation, it was further expanded into the Microsoft word 2007. Tables which were too large for the word software were exported to Excel for the data interpretation. When ever necessary, the output data was again re-exported into the excel software to prepare the graphs (Appendix 2).

2.6.4 Indices

The major index for the data interpretation is the average (mean). The mean is a clear representation of the data as submitted by the respondents. It is either captured as percentages or absolute figures. As absolute figures the totals of the various questionnaires of the study data can be captured by multiplying the mean figures by the number of respondents.

2.6.5 The Standard Deviation

The standard deviation is the amplitude of the data as collected from the individual respondents in the districts. It is the range between the maximum and minimum values of the various data picked from the field.

CHAPTER 3

3 DETAILS OF THE STUDY AREA

The PRA survey is not much suitable for statistical analysis as it intends to make qualitative analysis but not quantitative. For example, the sampling is very subjective. Therefore, the characteristics of the PRA is understood but did not generally reflect the statistical analysis of the individual questionnaires since it is expected that the PRA would only be able to indicate some characteristics of the study area.

3.1 Background Information on the Communities

The pictorial layout of the salient areas including the Venn (Socio-cultural and economic) maps of the communities have been drawn and captured as in the appendix. This information comprises total population in the communities including total males and females, number of households, number of female headed households, types of religion and different types of tribes that can be found in each of the communities. Fig. 3.1 below shows total population within the nine communities.

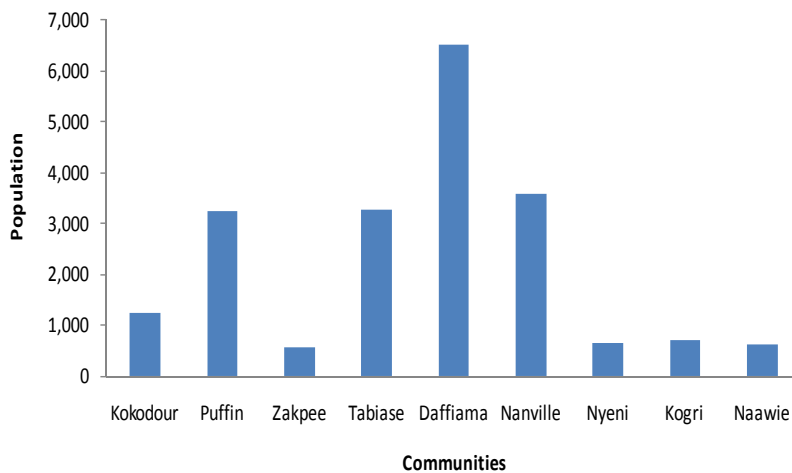


Fig. 3.1 Total population

The other variables are indicated in Table 1 in Annex I.

3.2 Community Layout, Socio-Economic Classes and Food Sufficiency

This section describes the land occupied by the communities and out of these lands portions are used for agriculture production, residential accommodation, forest area and reserved area as indicated in Table 2 in the Appendix. Table 3 describes the sections in each community, the distance of the community from the district capital and availability of power including electricity and other sources like the use of lantern, candles and rechargeable lights. Table 4 in the Annex indicates the distribution of socio-economic classes in the community and food sufficiency. Fig 3.1 shows the socio-economic classes in the various communities.

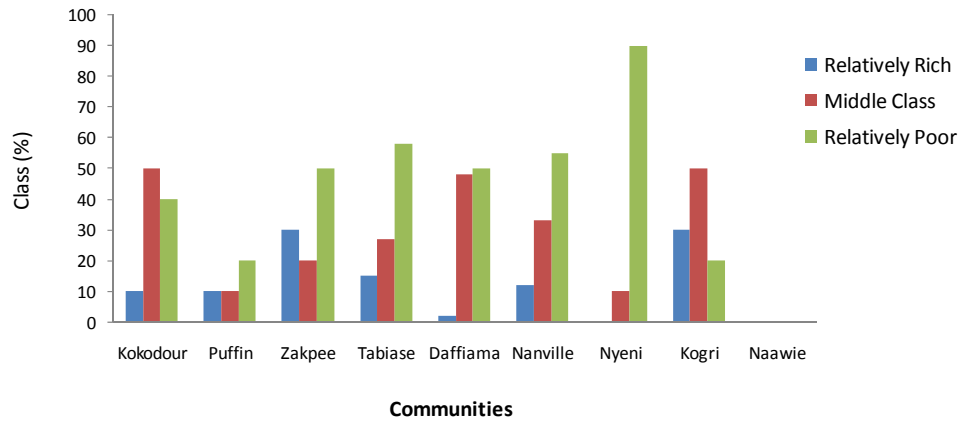


Fig. 3.2 Socio-economic classes

The other variables as indicated are presented in Table 4 in the Annex.

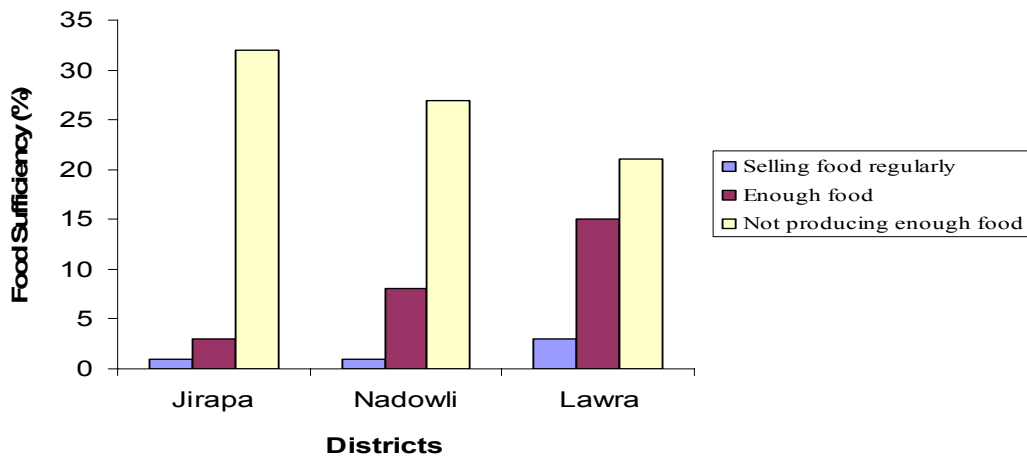


Fig. 3.3 Food self-sufficiency

3.3 Community Markets, Income and Expenditure Activities

The study showed that 22% of the communities surveyed have permanent market as indicated in Table 4.0 in the Annex. For example in Tabiesi one has to travel for about 45 kilometres before reaching the nearest market. Only one community out of the nine has a shop that sells agricultural inputs.

With regard to sale of agricultural products, only one community sells above 50% of what is produced from the farms. This means that whatever is produced is mostly consumed within the community. In terms of sale of livestock, about 90% of the communities sell below 50% of their livestock. Processed items are sold but on a small note. Other issues discussed included casual labour and seasonal migration which were on the low side. (Table 5 in Appendix). Expenditure items in the study area include payment of school fees, hospital bills, social responsibilities, purchase of food items and household appliances and other tools and equipment. The survey showed that the expenses on food, Agricultural labour and social commitments are predominant. Even though they vary from

village to village, expenditures on food can vary from as high as 50% at Zakpee to 20% at Puffin. Agricultural labour expenditures vary between 33% and 10% at Nanvill and Kokodour respectively and social commitments can also range between as low as 0.5% at Daffiama to as high as 20% at Nyani.

3.4 Public Institutions and Utilities

Only one community in the study has a bank/credit union as the others have to travel between 5-36 kilometres to have access to this facility. In terms of utilities, only one community reported of the availability of portable water that is pipe-borne water. The rest of the communities either use borehole, dams, wells, ponds and rain water for drinking, domestic chores and watering of their crops. Only a few communities reported of regular transportation. These are either mini-buses or occasional vehicles that ply their communities (Table 5.0 in Annex). Educational and health institutions are available in some of the communities. These include primary, Junior High School, Senior High School, technical and vocational schools and health facilities as can be seen in Table 6.0 in the Annex.

3.5 Land and Land Use Types

The survey showed that over 70% of all lands are upland on which crops are grown and valley bottom and hydro orphic lands constitute 20% and below in all communities. Again each community allocates desired acreages for crop cultivation, forest and some are left fallow. (Table 7.0 in Appendix)

3.6 Farming Systems, Self Consumption Rates and Incomes

The study showed that between 2-76 acres of land are cultivated for various crops including sorghum, millet, maize, rice, groundnut, cowpea, soybean and vegetables. The farming systems adopted include mounding, ridging and the use of flat land for planting. Over 70% of the farmers use their own seed in planting. Only a few farmers buy improved seed and others buy from other farmers.

Organic fertilizer is mostly used in fertilizing their crops. Insecticides and fungicides are occasionally used. The consumption rates of the various commodities indicate that sorghum is mostly consumed in the communities. Only two communities indicate that they sell about 90% of the sorghum. Millet, maize and cowpea are mostly consumed and groundnut is mostly sold. The rice is also either consumed or sold. Those communities that produce soybean and vegetables indicate they either sell or consume them (Table 8a-8h in the Appendix).

3.7 Crop Production in the Previous Five Years

Crop production in the last five indicated mixed results as shown in Table 9a-9c in the Annex. Some communities could not remember production for years back especially for 2003 and 2004 and others also gave estimates. The most devastating period was in 2007 when most

communities indicated severe drought and flood affecting their crops. Production was good, average or poor over the five year period. Diseases and pests were either light or severe for all the crops.

3.8 Livestock Production and Income Generation

The study showed that all the nine communities keep different livestock with various numbers. Livestock kept included Poultry, Guinea fowl, Pig, Goat, Sheep, Cattle and Donkey. The average price of poultry range between GHC1.00-GH¢6.00 and for guinea fowl it is between GH¢4.00-GH¢6.00. Average cattle costs between GH¢70.00-GH¢180.00 in the communities. The communities also recorded some deaths and there were theft cases also during the past year. (See Appendix for more details).

3.9 Determination of Information on Agricultural Policy

The communities indicated that they obtained most relevant policy change and technical agricultural production information through. These information and techno ledges are the necessary knowledge that will affect in their agricultural and other socio- economic and income generating activities that would reflect a change in their lifestyles and not necessarily the full policy documents. The information is obtained through radio, television, newspapers, agricultural extension agents, opinion leaders in communities, friends and colleagues, development partners and farmers' day celebrations. The extension officers also visit farmers fortnightly, monthly or occasionally (See Appendix on Agric Policy).

3.10 Community Based Organizations and Groups

There are several community based organizations identified in the study area. Each community has at least one organization which are either registered or supported by a Development Partner, Ministry of Food and Agriculture, World Vision International, National Council of Women and Development (NCWD). These organizations are involved in various economic activities including farming, trading, shea butter extraction, pito brewing, processing and other activities. Unfortunately most of these organizations are not registered. (See Appendix)

3.11 Processing Activities

Women in the study area are involved various processing activities. These include dawadawa, pito brewing, shea processing and soybean processing. From the rankings, it showed that pito brewing is most preferred followed by shea nut processing. Soybean is processed on a smaller scale. (See Appendix)

3.12 Women and Education

On the average 5 out of 10 women in Jirapa can read and write. However only 2 out of 10 went to school up to the primary level and none to the secondary level. Many of the NGOs that have responded to natural disasters in the area included food nutrition as a major aspect of the food security problem in the area. Most of the therefore undertook food processing and training activities of women

groups as a main intervention in addressing the food security problems and this has benefited 2 out of 10 women in the communities.. In the Lawra district, an average of 3 out of 10 can read and write even though only 2 have had primary education and less still at had a secondary education. Puffian has represented all the districts coupled with Tabiese and Nanville.

Nadowli has the lowest rate of women with education. There is no one with any education at all and neither can they read or write.

3.13 **Shea Butter Processing**

The shea butter industry is strictly indigenous with availability of the crop and accordingly 10 out of 10 women engage in shea nut collection in the Nadowli district. However only an average of about 8 undertake the processing the nut into butter producing about 4 bowls per period.

In the Lawra district an average of 6 out of 10 women engage in the shea nut collection industry. Out of which 4 are in the business of processing and about 3 bowls are produced.

In the Jirapa district, 10 out of 10 collect shea nuts and they all go into the production of b the butter. About 6 – 10 bowls are produced.

CHAPTER 4

4 THE HOUSEHOLD AND THE SOCIO-ECONOMIC CONDITIONS

4.1 The Family Structure

The data is rather interesting. The data indicates that the mean ages of the population are between 23 – 26 years within the three districts. Indications are that, between 50 -60% of the population are below 20 years with 26 – 30% below the age of 10. Similarly those above the age 60 are about 7 – 9%. The strong able persons of between 20 -50 years to work effectively are only about 30% at Jirapa and Nadowli and 49% for Lawra.

Sex distribution across the districts is almost even with about 49% being males and 51% females. With the marital status, 56 – 63% across the districts is single whilst about 35% are married. It is only in Jirapa that widows contributed to about 10% of the population which is different from the 0.4% in other districts.

Occupations in the districts vary widely. It is hereby assumed that many of the wives also help their husbands on the farm and can convincingly be classified under that class. Accordingly 74.9% of respondents engage mainly in farming activities in Jirapa compared to 44 and 43% in Nadowli and Lawra respectively.

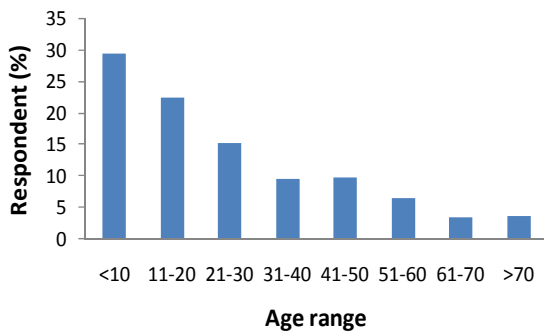


Fig 4.1 Age distribution in Jirapa

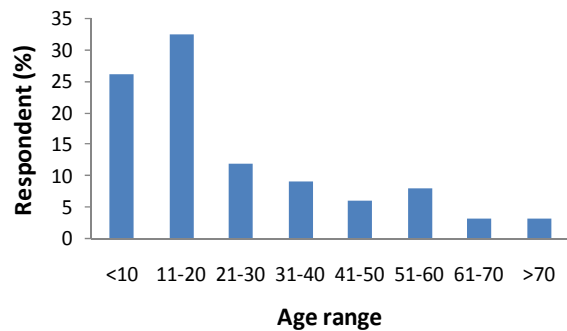


Fig 4.2 Age distribution in Nadowli

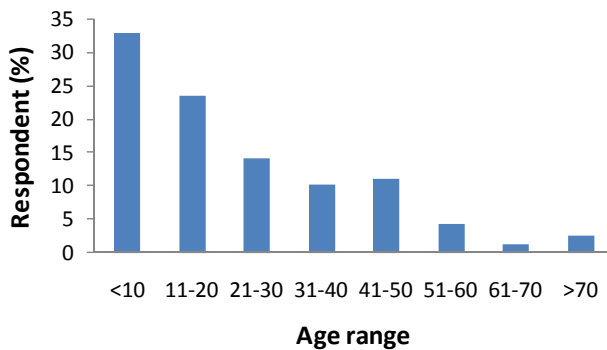


Fig 4.3 Age distribution in Lawra

The educational status is rather low with 82 – 90% of respondents either having no education at all or dropped out at the nursery or primary level. Those with secondary to tertiary education are few and are between 9 – 15% across the districts.

With respect to where they live, in Jirapa most of them live in the communities. Others have migrated to Oboase, Damongo, Bole and others at Nadowli and Lawra indicate that, Tamale and Wa are some of the areas people have migrated to. Other typical towns of migration from Lawra include Kumasi, Wenchi, and Begoro among others.

Household ownership of the individual respondents show that only 10 – 12% own lands. The other 80 – 90% generally has to request or borrow lands for cultivation.

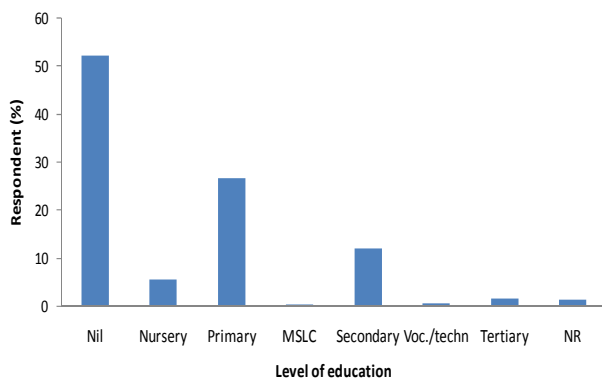


Fig 4.4 Educational status in Jirapa

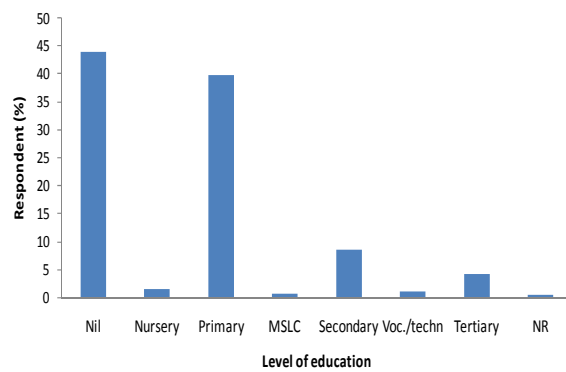


Fig 4.5 Educational status in Nadowli

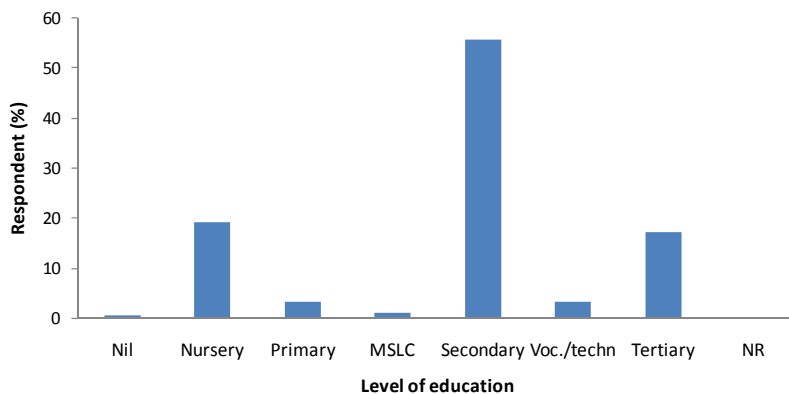


Fig 4.6 Educational status in Lawra

4.2 Income and Expenditure

4.2.1 Income

Generally average income earners per household for Jirapa and Nadowli are 3 and 2 for Lawra. The mean annual income for Jirapa and Lawra are below GH¢600 per household that for Nadowli is over GH¢2000 per year.

This high value of income at Nadowli is reflected by accruals from salaries and seasonal migrant labour. On the whole, the main income activities for the district are income from the sale of agricultural products, livestock and processed food items. The indications from the data are that the Nadowli district is far more endowed as compared to the other two.

The data indicates that the months of June, July and August are the months with minimum with money at hand. The months during which all the planting has been done and the crops are in their vegetative state of growth. And the months of December, January and February are months with abundant money at hand.

4.2.2 Expenditure

Out of the eight expenditure items, the values for Nadowli are far above the two other districts with Education values of GH¢614 compared with GH¢86 and GH¢76 for Jirapa and Lawra respectively. The other major expenditure items are Labour, clothing and expenditures towards ceremonies. However, expenditure on health care is very high in the Jirapa district.

Over 50% of respondents in Nadowli operate bank accounts compared with about 30 and 20% for Lawra and Jirapa respectively. The acts are held by only one or two members of the households.

4.3 Household Sustainability, Utilities and Assets

4.3.1 Food Sufficiency

Food security is of much concern in the study area. Across the three districts, between 60 – 90% of respondents do not produce enough food to feed them. It is only in the Lawra district that about 40% of respondents responded in the affirmative.

And between 90 – 97% do not make any food sales. Usually the food shortage is experienced between 3 – 5 months of the year. However individuals do experience food shortages over longer periods of 10 – 12 months.

Different households respond to lack of food in various situations. The main source of income to enable them procure food at such periods is the sale of livestock. However others receive support from seasonal migrant labour, some react by reduction of food intake or in extreme cases supplement food with wild leaves and borrowing from friends and family members.

4.3.2 Water Resources

The bore hole is the main source of water for drinking and for domestic use in the districts. However sources from rivers, streams, ponds and hand dug wells supplement sources of domestic water. The time distance to both sources of water resources is between 20 to 30 minutes in all areas which indicate that they are generally not too far from the various villages. However for agricultural purposes respondents have to travel between 50 minutes to 1 hour to the farming areas.

4.3.3 Sources of Power

Within the three districts 72 – 100% of respondents do not have access to electricity except 28% and 14% in Nadowli and Lawra respectively who receive power from the National grid. In the absence of electricity the lantern is the main source of power at night. Many supplement it with the torch light. The main source of power for cooking is fire wood and its products of charcoal. Both of these account for between 97 – 100% of the fuel source for domestic use.

4.3.4 Properties and Assets

Between 80 – 95% of respondents in the three districts live in their own houses. The radio is the major household electrical appliance used by 67 -73% of respondents. About 30%of respondents own television sets in Nadowli compared to 2.8% and 8.3% in Jirapa and Lawra.

The bicycle is the main vehicle used for travelling and 75 - 90% of respondents own bicycle, whilst 44, 25 and 11% of respondents have motor cycles in Nadowli, Jirapa and Lawra respectively. Only a few own cars.

The cell phone quite a recent innovation in the communication industry has caught up in the study area as relevant for their daily activities, with 20 – 60% of respondents owning phones. Agricultural machinery and equipments such as donkey carts, milling machines, power tillers, knapsack sprayers and ploughs can all be found in all the three districts in limited quantities.

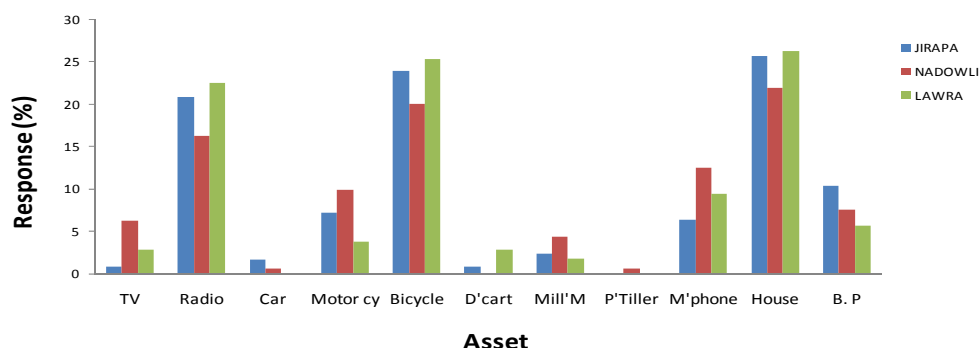


Fig. 4.7 Assets owned by members

4.3.5 Tools

As far as agricultural tools are concerned most of the common tools such as cutlasses, hoes, machetes, knives, sickles and the like respondents own between 4 – 8 pieces in quantity. Tools that are sparingly used such as pick axes, shovels, rakes, buckets and watering cans are procured in smaller quantities about two to four by the household, whilst those like wheelbarrow and Wellington boots are very few.

4.3.6 Social Status and Perception

Borrowing is a system that is much entrenched in the study area. Between 60 – 70% of respondents have ever borrowed outside the household and 36 – 45% is in monetary form from friends.

The general observation is that borrowing from family members and co-operatives is rather on the low side accounting for about 3 – 30% borrowing from family and 3 – 6% from co-operatives. There is generally no borrowing from community leaders and employers. While borrowing from the banks is less than 3% in Lawra and Jirapa it is about 25% in Nadowli.

The amount of money borrowed generally varies. However, even though few respondents go for loans of periods less than a year, most take it on yearly bases. Many a time the loans are taken without interest, however 30% for respondents obtain the loans with interest that has to be paid in cash.

Between 20 – 25% of respondents believe they in the rich class, 42 – 58% think they belong to the middle class and 22 – 33% believe they are in the poor class. A very few thought they were getting richer whilst 30 – 40% believe they are getting richer.

The graph below indicates the responses as to the changes to their standards of living with respect to changes in income levels over some period of years. Some respondents between 20 – 45% of respondents within the study area see no change in themselves whilst 20 – 30% believe they are getting poorer. However, about 2-8% of respondents in Lawra and Nadowli believe they are certainly getting richer and generally across the study area between 30-40% of all respondents perceive themselves to be getting richer gradually.

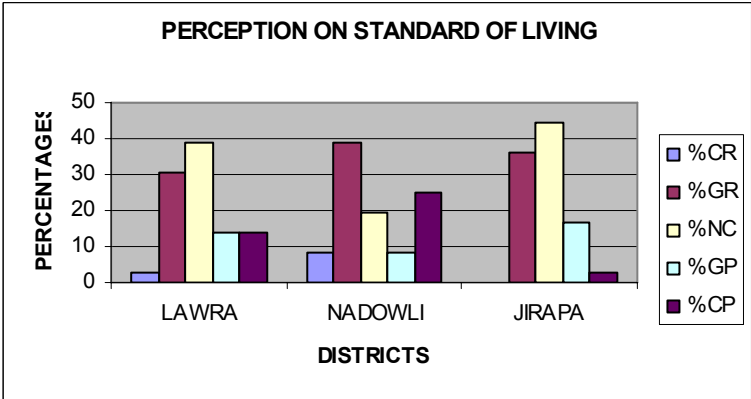


Fig 4.8 Perceptions on Standard of Living

Respondents that have generally have certainly or gradually noticed improvements in their income and lifestyles include those that worked hard to either secure enough lands for cultivation or also undertake other income generating activities including some retirees in the communities. Their socio-economic resources have either from bicycles to motorcycles. There is also an improvement in his compound where parts of the buildings are invariably roofed additional with galvanized aluminium sheets. His produces enough food and usually increases his marriage status.

Many of the respondents who do not see any change in their lives are people who are not prepared to change with the times. Even though they might have adequate land and other socio-economic resources they are seldom put into income generating activities. His household might sometimes face food security problems in harsh years and might resort to borrowing.

For this category of respondents, they usually experience exclusion of any progressive activity in the community. Usually they are faced with ill-health and limited land resources for cropping and always have food security problems. They are individuals with no honour and neither are they able to secure loans and credit for sustenance. They are most a time not even able to refurbish their households in times of disasters and end up living with relatives

CHAPTER 5

5 THE AGRICULTURAL ENVIROMENT

5.1 Land Tenure and Land Use

Generally, the lands in the region are held in trust for the community members by the *Tindana*, the “land chief”. However individual families and households are entitled to own portions of land that are inherited through the family line. In the Jirapa district the mean size of land owned by respondents is 29.6 acres out of which 8 acres were cropped and 25 acres on the average left to fallow. An average area of residential land covers 3 acres and 1.5 acres used for others as forest reserves and grooves as well as shrines.

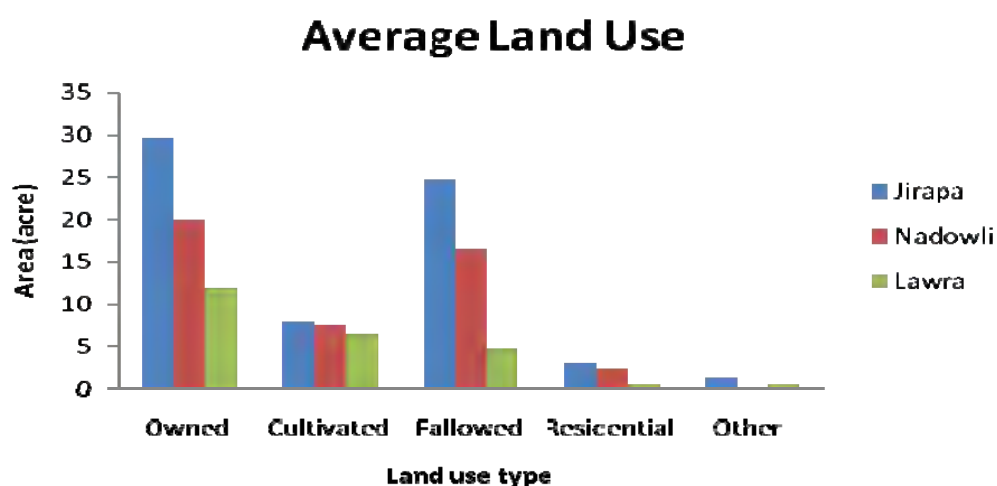


Fig 5.1 Average Land Use

In the Nadowli district the average land owned by respondents is around 20 acres with 7.5 acres under cultivation whilst 16.3 acres are under fallow. Residential area covers 2.4 acres.

For Lawra, land owned is 12 acres, with 6.5 acres being cultivated and 4.7 acres under fallow. The residential areas, forest grooves and shrines cover 0.5 acres and 0.6 acres respectively.

5.2 Farming Systems and Crop Production

The farming systems in the study area is largely small scale farming mainly annual crops under both intensive cropping around the compound and shifting cultivation practices. The graphs below indicate the average cropping areas, yields and production figures.

Various types of land preparation practices are adopted for the cultivation of the different crops i.e. mound, ridges or flat ground. The land preparation is generally to prepare the ground in a suitable condition for crop growth. Indications are that the indigenous cereals of sorghum and millet are mostly planted on mounds and ridges, whilst most of the maize is planted on prepared flat ground.

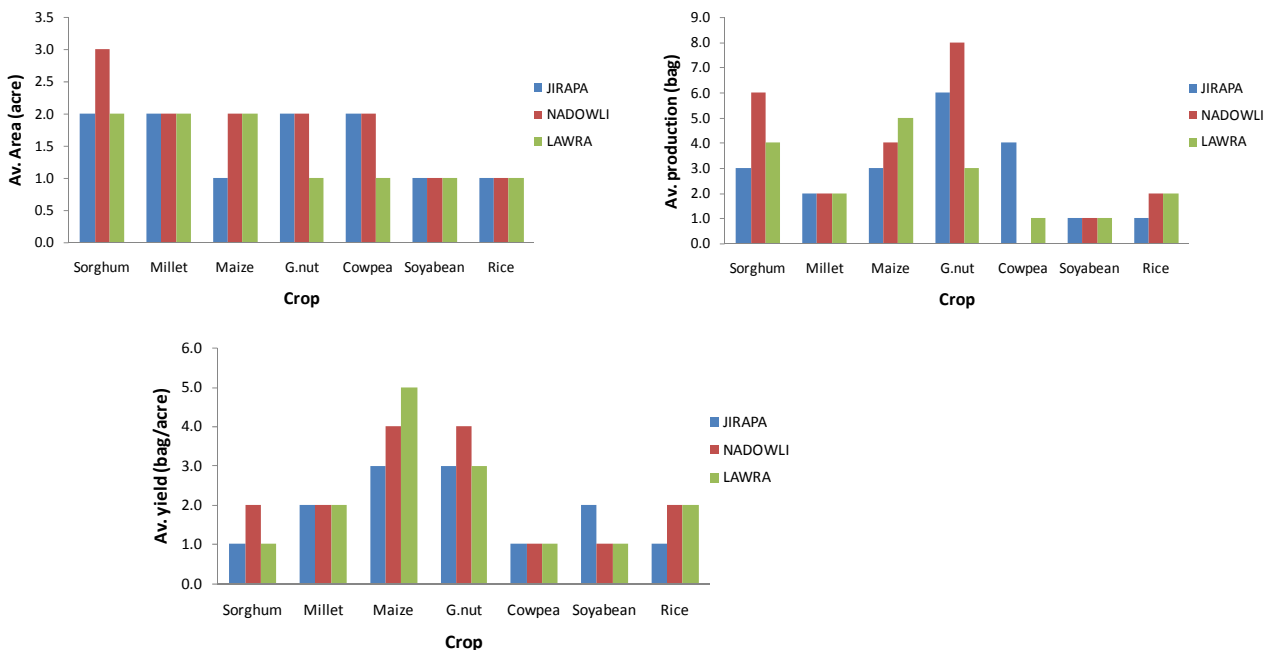
The legumes i.e. groundnuts and cowpeas are mainly cropped on flat ground similar to rice and vegetables.

With respect to seeds, the traditional crops of sorghum and millet most respondents use seeds either from own crop or from friends. There is however a definite increase in the introduction of improved seeds for maize, groundnut and cowpeas.

As far as other crop inputs are concerned the main soil amelioration input added is organic manure where 50 – 70% of respondents across all three districts apply it to all the crops. Chemical fertilizers are scarcely used except sparingly on maize, cowpea and soybeans. Other agrochemicals such as fungicides and insecticides are used only on cowpea.

Crop cultivation is one of the main industries in the study area. Generally an average production area for sorghum and millet cropping in the three districts is between 2 – 3 acres of land. Yields figures are also similar except in Nadowli where it is 2bags/acrea and 6bags/acrea are got for millet and sorghum respectively. It was understood that in Nadowli improved varieties of sorghums for the brewery industry are being cultivated on large scales. The maize crops follow the trend of the two indigenous cereals with similar production indices.

Groundnut and cowpea are major leguminous crops. They are also cropped averagely on two acres of land on the average with yields of about 3 or 4bags/ acre for groundnut and 1bag/acre for cowpea. And rice 1-2 bags of rice/acre. Usually vegetables of various types are grown not purposively but rather intercropped and yields and production figures not generally monitored.

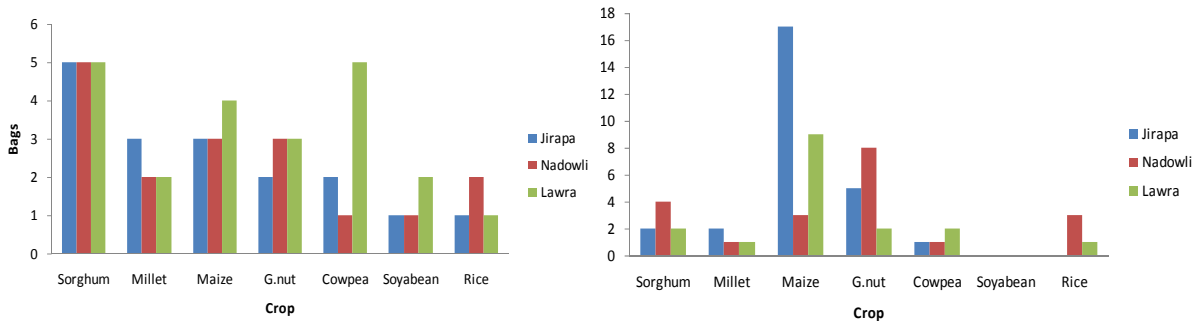


Figs 5.2 – 4 Crop production statistics (area, production and yield)

5.3 Food Sufficiency and Sales

It was deduced from the data that, food security is a major concern for the respondents and their main objective for crop production is to feed the family. For all the major food items such as cereals and legumes, the self consumption rates are more than twice the amount sold, except for groundnut where the amount sold were higher. With respect to the weight per bag of the various crops, both millet and sorghum weigh 106 kg/bag. Rice also weighs 100 kg/bag just as maize and groundnut.

The price of the products varies from district to district and also at the time of sale. Prices are usually low at the time of harvest when the produce is abundant and high at times of scarcity in the lean periods, consequently income to the respondents vary accordingly. This confirms that there is wide amplitude of crop prices within the year and discrepancies of the different prices by the respondents.

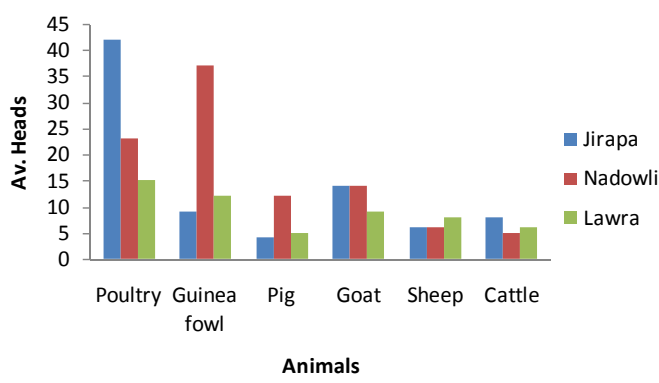
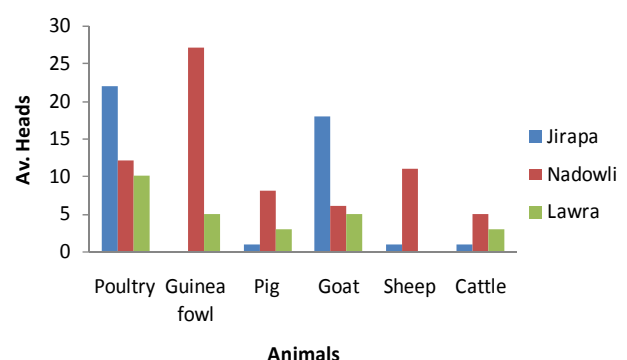
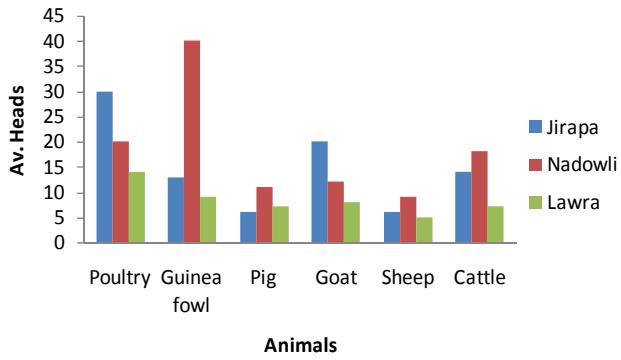


Figs 5.5 – 6 Food sufficiency (quantity consumed and quantity sold respectively)

5.4 Livestock Production and Sales

The table below indicates that the types of livestock and production capacity within the districts. Also in the table is the quantity sold and prices. Livestock is lost monthly through diseases, and high figures generally indicate incidences of disease outbreak generally the open outdoor system of rearing is practiced in the industry. The livestock are allowed in the open space to fend for themselves. However at certain periods of the day they are fed purposely to control and direct them.

The most popular feed mentioned is pitoh marsh, domestic food and crop residue. Poultry and pigs are mostly fed with the pitoh marsh whilst food and crop residues are mostly used by he all types' livestock. Hay and groundnut husks are used by the ruminants mainly goats, sheep and cattle.



Figs 5.7 – 9 Livestock Production (quantity consumed, sold and lost respectively)

CHAPTER 6

6 HOUSEHOLD FOOD AND NUTRITION

6.1 Meals Taken Per Day

On the whole, the average percentage of meals taken per day in the household made up of the husband, wife and children. Note that of all the meals, the rates for lunch are lower than that of breakfast and supper in all situations except for the Lawra district.

6.2 Types of Meals and Quality (Staples)

The staples comprise of the main source of energy for the body. These are derived from the major crops as cereals, roots and tubers. The major food item indicated in the data is “TZ” made from any cereal except rice. It is eaten very frequently in all the three districts with various frequencies, above six times a week. The data indicated that the respondents eating “TZ” at frequencies of 13 and above range between 20 – 25%.

“*Tubani*” the next meal is taken only once or twice a week in all districts except in Jirapa where frequencies of up to six times a week are observed. “*Kenkey*” and “*Banku*” are also not common and taken only once a week except in Nadowli district where frequencies at up to seven times are observed.

Yam is a major food source in the area. More than 50% of respondents take yam as food up to three times a week. In Nadowli frequencies of up to 10 times weekly were encountered. The frequencies of rice are similar to that of yam between 50 – 70% respondents take it up to three times a week.

“*Pitoh*” and “*Koko*” are both a derivation of cereals, whilst “*Koko*” is porridge, “*Pitoh*” is a brew considered as food. For both of them 30 – 70% of respondents take it seven times a week (daily). Some even take it thirteen or more times. The food outlay for wives and children follow the same patterns as that of husbands.

6.3 Types of Meals Taken (Meat and Leguminous Proteins)

The data indicates that between 70 – 90% of respondents do not take in beef as a source of meat. Generally only few respondents of about 10 – 30% take beef products up to three times a week. Sheep and goats also follow the same trend as beef, about 70 – 90% of respondents do not eat their products and only 20% take them account three times a week. . Pork is more common and an average of 60% of respondents takes it up to five times a week.

Chicken is taken very frequently with about 40% of respondents taking it for about twelve times a week. However respondents who do not eat chicken or any poultry products are quite high as

much as 60 – 65%. Only about 25% on the average respond to taking eggs. About 70 – 80% does not take eggs.

Legumes serve as a source of protein in the diets. Groundnuts are taken very frequently up to twelve times with an average of 70 – 90% of respondents. Bambara beans are also another source with 40 – 60% taking it up to six times a week. However in the Lawra district up to 70% do not take it. Soya beans are not very common and up to 90% do not eat it. It is only in Nadowli that up to 30% of respondents have access to it.

6.4 Types of Meals Taken (Vegetables)

Vegetables feature prominently in the diet in the study area. Tomatoes, okra and onions are the main vegetables taken very frequently up to over thirteen times on weekly basis. The leafy vegetables either domestic or wild are also very frequently taken and up to 95% of respondents indicate so.

Baobab leaves is only taken slightly at Jirapa but taken much up to seven times a week Lawra and Nadowli where about 80 – 90% respondents indicate so. Garden eggs, cabbage and carrots are not so common in the dish and are either not taken at all or taken sparingly as indicated by the wives at Nadowli.

CHAPTER 7

7 OBSERVATION AND INTERPRETATION

7.1 Introduction

The Village Socio-Economic Survey was conducted according to the scope of work towards the preparation master plan for the Upper West Integrated Agricultural Project.

The purpose is to gather the necessary information towards the scope work as defined in the TOR. The survey team included both local Ministry of Food and Agriculture staff and consultants from Postagric Associates. The study area and schedule of activities were handled judiciously as in the TOR.

Two approaches of the data collection were adopted.

- i. The participatory forum appraisal
- ii. The administration of individual questionnaire to the individual household respondents

The data entry, analysis and processing was done using the Statistical Package for Social Sciences (SPSS), due to the complexity of the questionnaires.

7.2 The Overall Characteristics Of The Area

Participatory Rural Appraisal

The Participatory Rural Appraisal (PRA) which represents the Section A of the questionnaire and the development of the community and vent maps indicated the socio-economic layout within the villages as well as the socio-cultural and economic interactions between the communities that are indicative of the socio-cultural linkages between the communities. And the result and interpretation from the PRA is only a qualitative guide to the socio-economic conditions of the study area.

The discussions indicate that, with respect to the population and perception of social status, the poor classes are predominant followed by the middle class with very few considered to be rich. However, one must realise that the scale of rich to poor is a shade of grey and not exactly black and white as there are various grades of richness within the ranges defined.

Indications were that, food sufficiency is a major issue and most of the cereals and roots are produced purposely for consumption and food security. Propositions were that many households have food shortages over long periods in the year and only a minority of the respondents are able to make any food sales for monetary gains.

And at the time of food shortages livestock sales and processed items as *pitoh* are the major sources of income to augment procurement of food during the lean periods.

The area is lacking in many public and institutional utilities indications are that many of the communities have public schools only at the primary stage whilst few are endowed with the secondary

institutions. Invariably, all of them have to travel to the district centres to access other socio economic institutions such as banks, hospitals, training and cultural centres including larger markets.

Also the major source of water for all domestic purposes is mainly the borehole which has been developed in each community even though ponds and streams are used in extreme situations.

Again, lands and land use systems indicate that families do own lands which are inherited over the generations. Much of the land is upland and mainly for cereals and leguminous crops. Even though hydromorphic landscapes are common, they are not utilised to the fullest for rice production.

The traditional system of cropping prevails in the study area. The systems of land preparation varies greatly either mounds, ridges or on flat grounds. Yields are rather low since farmers do not use recommended inputs and improved crop varieties except for maize and cowpeas which is on the increase.

As a consequent of the low input and cropping systems, yields are low and therefore as stated earlier most of the food is for food security and apart from groundnuts for which over 50% of produce is sold all the other food items less than 20% of the produce is sold since it is consumed.

It was clear during the discussion that, crop production over the past 5 years has encountered various adverse weather condition and disasters as flood and drought and consequent food insecurity in the communities.

Even though livestock is a vibrant industry in the region, indications are that diseases of livestock are on the increase. And as such not many numbers of livestock was observed during the data collection.

With respect to the dissemination of information, many of the respondents were of the view that only information in their socio-cultural activities is relevant to them. Even though some get the information from radio, it is mostly the Agric Extension agents through forums that bring the messages across.

Many community based organisation and groups have evolved over the periods. But whether they have the bonding and cohesion and are still operating is the issue. It will be worthwhile to continuo to empower these groups to become more sustainable in order for them to make and impacts in the communities in which they operate.

7.3 The Household and Socio-economic Conditions

The data indicates that, even though the average households are large, the average working age population is only that of 30% of within the community. The sex distribution of male and female is about even whilst the major socio-economic income generating industry is agriculture.

Consequently the main income generation activities in the study area are mainly through agriculture and processing. Even though agricultural income is not clearly reflected as in livestock output and other sources of income. However income flows follows the crop cycles where there is less money during seeding time and abundance at harvest periods.

The major expenditure items are on food, farm labour and social responsibilities. Detailed analysis has confirmed the earlier impressions that food production is purposely for consumption and food security and only about 10% of respondents make any food sales, indications are that food shortages are experienced between 3 – 5 months per year on the average. At times of food shortages livestock is the main source of income to procure food.

Similarly, there are only few utilities for domestic uses, virtually there is no power from the national grid and the lantern is mostly used for lighting neither is there potable water other than boreholes.

The bicycle and radio are the most common assets in the household and also the cell phone which is catching up rapidly. Various agricultural tools are used for the farming activities.

In the deprived area of the study, there are urgent needs of many respondents and borrowing either in kind or cash is very common mostly done outside the family and mainly from friends. The loan is either with or without interest. Very few approach the banks or co-operatives for assistance.

Despite earlier indications, the data analysis and interpretation in the study indicates that about 60% of the respondents are in the middle social class, 25% in the poor class and 15% in the rich class. Even though some believe their social status is changing for the better, many see no change and other believe they are getting worse off.

7.4 Agriculture

Even though land is communally owned individual households and families do have lands that are passed on to family members. The farming system that prevails is small scale farming of major food with either intensive or shifting cultivation. The major types of land preparation especially ridges and mounds leads to land degradation and exposure of iron pan.

As far as inputs are concerned, for most crops little or no inputs are used to augment soil fertility; neither do they look for improved crop seed varieties except for maize and cowpea which are

even on the low side. It therefore follows that the average yields are resulting in low production of food and food insecurity.

Consequently, under such severe climatic conditions and agricultural production systems, the consequences are that, crop yields are low and therefore there is little or no crops produced for sale except for groundnut. And with farming as the major industry in the area and incomes are low the result is the poverty.

Livestock even though is another major industry that can thrive well in the district, observations are that it is not given much attention and care. The livestock numbers indicated in the data are rather low and need much to be desired. Virtually there is no adequate management programme to produce the livestock for income generation. No wonder incomes generated from livestock sales to supplement food are low.

7.5 Household Food and Nutrition

Generally three meals are eaten daily for most of the respondents. Even though there is a slight variation of meals eaten by husbands, wives and children, there is no significant difference since the meal is prepared from the same pot from the family.

The major meal of staples is the *Tuozañi* (TZ) made from cereals except rice and followed by yam which is a root crop. *Pitoh* and *koko* also derivations of cereals are also taken on daily bases. Food items like *banku* and *kenkey* also made from cereals are not prominent in their culture.

As far as meat products are concerned, cattle are considered on wealth and property and not as a meat product for food. Sheep and goats are also reared mainly for sale to generate income and are accordingly not much used as meat product in the diet.

The major meat product in the diet is pork, poultry and poultry products. Much of the proteins in the diet are also obtained from leguminous products as groundnuts and cowpea mainly and also Bambara beans and Soya beans which have also been introduced and are on the increase.

As far as vegetables are concerned tomatoes, okra and onions are the main ingredients. In the study area leafy vegetables both from domestic and wild sources including the baobab leaves are very prominent in the diet. The exotic vegetables like cabbage and carrots are not common in the area.

7.6 Similarities and Differences within the Districts

The data indicates clearly that, the total populations of communities in the Nadowli districts are all above 3000 compared with less than 500 persons in Jirapa and Lawra Districts with only Puffien having about 3000.

However, the socio-economic classes of the rich, middle class and poor do not differ much between the three districts. The incidence of food shortage and insecurity also cuts across all the districts. Invariably the sale of livestock, processed items and income from migrants are the sources of food supplements in times of need. On the whole public utilities and institutions are very few in the study area.

7.6.1 Land Use Types and Agriculture

In all the districts, the lands are communally owned by the “*Tindana*”, even though individuals own parts of the land around their compounds. The farming systems of traditional low input farming systems are practiced within the districts. However the Nadowli district is marginally ahead in the production of improved varieties of sorghum. The cultivation of maize a recent introduction is also on the increase. Groundnut is the main crop which is produced mainly for cash.

Household income of Lawra and Jirapa are below GH¢600 per year, that of Nadowli is above GH¢2000 annually, this indicates the rich socio-economic resource and culture of the district. Accordingly Nadowli spends more money on education and over 50% of respondents operate bank accounts.

7.6.2 Household Sustainability and Assets

Food security is the major limitation in the area as indicated by up to 90% of respondents. Only Lawra respondents of about 40% indicate food sufficiency. In all the districts almost no food sales were made and food limitations last for 3-5 weeks.

The borehole is a major source of drinking water and is generally not far from the communities. In the absence of electricity, the lantern is the only source of light. The bicycle and the radio remain the most common properties owned by the various households in the study area. Another observation was that borrowing is part of the social system in the study area. However respondents are of the opinion that situations are changing whilst they are getting richer.

7.6.3 Livestock Production and Sales

Even though livestock sales is one of the major sources of income for food supplements in many households, its production capacity and approach is still not well planned in all the three districts. And rearing them on free range is one of the situations that must be addressed.

7.6.4 Household Nutrition

Generally three meals are taken daily in all the three districts. *TZ*, *pitoh*, *koko* (all cereals products) and yams are the most common. *Kenkey*, *banku* is found sparingly in the diets of respondents of Nadowli. Across the three districts there is not much difference between what the husband, wife and children eat, since the meal is prepared from the one pot they all eat from. Beef is

invariably absent from the meals. Pork is the main meat product patronised by the people in the study area. Groundnuts and cowpea are also the major leguminous protein sources. Vegetables are prominent in all the diets especially onion, tomatoes, okra. Leafy vegetables of all types are present in all diets.

CHAPTER 8

CONCLUSION AND RECOMENDATIONS

The study area is rather deprived in both climatic-vegetative and social conditions. Food insecurity is the major limitation and adequate interventions and pragmatic approaches and developmental programmes are required to address the problem.

It is true that many projects were under taken over the years with very little impacts to reflect their activities. The incidence of building cohesive and strong community based organisations and groups on sustainable bases where the individual members are trained to comprehend and play their roles and responsibilities effectively is one of the critical strategies of uplifting their standards of living as individuals and communities in general. It is recommended that, the activities of the Agric Extension Agents are supplementary to any training programme of the donor project to continue for about 5 years at the end of the project.

New approaches of farming methodology techniques by improving on the present cultural processes and adequate and appropriate use of inputs should be emphasised to improve income generation.

Income generating crops especially maize and groundnuts should be encouraged in terms of increase in area of production and technology. Similarly the current situation where livestock are virtually left to cater for themselves is not adequate. A major programme of livestock production including training, care and building of infrastructures and development of pastures and other types of feed is necessary if the industry is to survive the test of time.

Land degradation especially around the communities is on the increase mainly due to the land preparation method adopted where the soils are virtually scooped up in the preparation of mounds and ridges. And the consequences of deforestation and desertification cannot be underemphasised. Afforestation programmes especially the planting of income generating indigenous trees species such as dawadawa, cashew, and shea nut should be encouraged in any developmental programme.

Finally as expressed earlier the formation and sustainability of viable community groups is very essential since it is only through such associations that much training including the nutritional change and inclusion of non-traditional food items can be included in the menu and reduce the food insecurity problems. The group sustainability and cohesion of the community is a prerogative dissemination of strategies and ideas to enable them lift up their income and standard of living.

APPENDIX 1

Village Socio-Economic Survey
Community Information

Table 1: Background information on community

District	Lawra			Nadowli			Jirapa		
Community	Kokodour	Puffin	Zakpee	Tabiase	Daffiama	Nanville	Nyeni	Kogri	Naawie
Total Population	1,240	3,240	564	3,270	6,528	3,586	647	718	607
No of Males	651	1,400	265	1,572	3,144	1,703	294	366	304
No of Females	589	1,840	299	1,698	3,384	1,883	353	352	303
No of Households	215	200	73	153	258	215	75	86	69
No of female headed households	5	32	3	86	87	86	6	1	3

Type of Religion									
Religion	1.Christian-60% 2.Traditional-40%	1.Christian-60% 2.Traditional-40%	1.Christian-60% 2.others-40%	1.Moslem-20.99% 2.Chris-46.38 3.Trad-32.63%	1.Christian-80.2% 2.Moslem-0.57% 3.Traditional-19.08% 4.Others-0.15%	1.Christian-95% 2.Moslem-Trace 3.Traditional-5%	1.Chris-80% 2.Trad-20%	1.Chris-50% 2.Trad-30% 3.muslim-20%	1.Christian-65% 2.Muslim-30% 3.Traditional-5%
Types of Tribes									
Tribes	Dagaaba-100%	Dagaaba-100%	Dagaaba-100%	1.Dagaaba-99.97% 2.Fulani-0.03% 3.Akan-Trace	1.Dagaaba-99.5% 2.Akan-0.3% 3.Kusaasi-0.2%	1.Dagaaba-99.9% 2.Lobis-Trace 3.Akan-Trace	Dagaati-100%	1.Dagaati-70% 2.Sisaala-29% 3.Fulani-1%	1.Sisaala-68% 2.Dagaati-31% 3.Fulani-1%

Table 2: Agricultural area in communities

District	Lawra			Nadowli			Jirapa		
Community	Kokodour	Puffin	Zakpee	Tabiase	Daffiama	Nanville	Nyeni	Kogri	Naawie
Total Land Area of Community (sq km)	118	152	65.0	324.0	153	33.75	35.0	84.8	48.8
Agricultural Area (sq km)	65.0	64.0	38.0	289.0	84.0	25.5	20.0	56.5	25.0
Residential Area (sq km)	50.5	32.0	26.0	25.0	64.0	6.75	10.0	17.5	15.2
Forest Area (sq km)	1.5	0	0	1.5	5.0	0.75	0	2.8	0
Reserved Area (Sq km)	1.0	1.0	0.5	8.0	0	0.5	5.0	6.0	2.6
Others (sq km)	0	1.0	0.5	0.5	0	0.25	0	2.0	6.0

Table 3: Sections, distance from capital and availability of electricity in communities

District	Lawra			Nadowli			Jirapa		
Community	Kokodour	Puffin	Zakpee	Tabiase	Daffiama	Nanville	Nyeni	Kogri	Naawie
Sections in Community	NA	7	4	10	5	2	5	3	4
Distance from Capital (km)	22	35	6.4	45	16	36	5	35	13
Source of Energy									
Electricity	No	Yes	No	No	Yes	No	No	No	No
Lantern	Lantern	-	Lantern	Lantern	-	Yes	Lantern	Lantern	Lantern
Candles	-	-	-	-	-	-	-	-	-
Rechargeable Light	-	-	-	-	-	-	-	-	-

Table 4: Socio-economic class groups, food self sufficiency and availability of market

District	Lawra			Nadowli			Jirapa		
Community	Kokodour	Puffin	Zakpee	Tabiase	Daffiama	Nanville	Nyeni	Kogri	Naawie
Class group									
Relatively Rich (%)	10	10	30	15	2	12	0	30	-
Middle Class (%)	50	10	20	27	48	33	10	50	-
Relatively Poor (%)	40	20	50	58	50	55	90	20	-
Food self – sufficiency									
% of Household producing enough food	20	50	20	70	20	5	10	50	25
% of household selling food regularly	40	10	20	25	10	0	0	10	45
% of household not producing enough food	40	45	50	5	70	95	90	40	30
Market									
Permanent market in community	No	No	No	No	Yes	Yes	No	No	No
Distance to nearest permanent market (km)	2.5	5	6.4	45	NA	NA	5	10	6
No of Shops selling fertilizer in community	Nil	1	Nil	Nil	Nil	Nil	Nil	Nil	Nil
No of shops selling agric tools	Nil	1	Nil	Nil	Nil	Nil	Nil	Nil	Nil

Table 5: Income generating activities, expenditure, availability of banks, water resources and transportation

District	Lawra			Nadowli			Jirapa		
Community	Kokodour	Puffin	Zakpee	Tabiase	Daffiama	Nanville	Nyeni	Kogri	Naawie
Type of Income generating activities and % of each type									
Sale of Agric Products	20	12	20	80	40	28.5	0	30	45
Sale of Livestock	10	12	20	10	30	45	70	30	30
Sale of Processed items	10	14	10	2	13	15	10	20	15
Casual Labour	5	18	0	0	5	0.5	10	10	5
Seasonal Migrant Labour	50	28	40	5	2	11	5	5	3
Others	5	16	10	3	10	-	5	5	2
Total	100	100	100	100	100	100	100	100	100
Items of expenditure and % of each type									
School Fees	10	30	20	10	42.5	7	5	10	10
Hospital Fees	10	15	20	19	2	5	5	30	15
Social Responsibilities	20	10	10	12	0.5	20	20	5	15
Food Items	40	20	10	17	22	30	50	30	45
Agric Labour	10	20	30	3	30	33	5	20	10
Household Appliances	0	2	0	7	1	3	10	2	2
Tools & Equipment	10	2	10	5	2	2	5	2	2
Others	0	1	0	0	0	0	0	1	1
Total	100	100	100	100	100	100	100	100	100
Availability of banks and credit unions									
Banks and Credit Unions in Community	Nil	Nil	Nil	Nil	1	Nil	Nil	Nil	Nil
Distance to nearest Bank or Credit Union (Km)	14	5	6.4	7	-	36	5	35	13

District	Lawra			Nadowli			Jirapa		
Community	Kokodour	Puffin	Zakpee	Tabiase	Daffiama	Nanville	Nyeni	Kogri	Naawie
Water sources									
Drinking Water	Borehole	Borehole	Borehole	Borehole, wells	Pipe-borne, borehole	Borehole, wells	Borehole	Borehole,	Borehole
Domestic Use	Borehole	Borehole, stream	Dugout	Boreholes, wells	Dams, wells, ponds	Well, pond	Rain water, borehole	Borehole	Borehole
Agriculture	Rain-fed	Rain-fed	Rain-fed	Wells	Dams, ponds	Wells, pond, rain-fed	Rain-fed	Rain-fed	Rain-fed
Transportation									
Long Distance Bus in Community	Nil	Yes	Nil	Nil	Yes	Nil		No	No
Mini-van routes in Community	Nil	Yes	Nil	Nil	Yes	Nil		No	No
No of operational vehicles plying community frequently	Occasional vehicles	10	Occasional	Nil	9	3		NA	1 (bus0

Table 6: Number of education and health institutions in the communities

District Category	Lawra						Nadowli						Jirapa					
	Kokodour		Puffin		Zakpee		Tabiase		Daffiama		Nanville		Nyeni		Kogri		Naawie	
	No	Km	No	Km	No	Km	No	Km	No	Km	No	Km	No	Km	No	Km	No	Km
Primary	1	1.6	1	-	-	1.6	1	-	2	-	1	-	1	0	1	-	1	-
JHS	1	1.6	1	-	-	1.6	1	-	1	-	1	-	-	5	1	-	1	-
SHS	1	5.0	0	3	-	6.4	0	35	1	-	0	18	-	5	0	10	-	6
Technical	1	14.0	0	5	-	14.4	0	7	0	24.0	0	18	-	35	0	35	-	19
Vocational	1	14.0	0	5	-	14.4	0	36	1	-	0	18	-	45	0	35	-	19
Health Centre/Clinic	1	2.0	1	-	-	6.4	-	7	1	-	1	-	-	-	1	12	-	6
Other		-	1	-	-	1.6	-	-	-	-	-	-	1	0	-	-	-	-

Table 7: Land type and land use in the communities

District Community	Lawra			Nadowli			Jirapa		
	Kokodour	Puffin	Zakpee	Tabiase	Daffiama	Nanville	Nyeni	Kogri	Naawie
Land type									
Total Area (Acres)	119	152	76sq km	315.8	147sq km	33sq km	35	108.3	48.8
Upland (%)	70	80	70	69	80	80	75	70	70
Hydro orphic (%)	10	10	10	5	5	10	10	20	25
Valley Bottom (%)	20	10	20	26	15	10	15	10	10
Land use type (Acres)									
Cultivation/Cropped	79	64	38	289	84	25.5	20	56.5	25
Fallow	12	10	5	89	10	2	10	11.5	19
Bush /Forest	1.8	5	3	18	48	5	3	26	-
other	2	2	2	10	5	1.5	2	11.3	36

Table 8a: Crop Cultivation, cultivation method, self consumption rate and income from crops

District	Lawra			Nadowli			Jirapa		
Community	Kokodour	Puffin	Zakpee	Tabiase	Daffiama	Nanville	Nyeni	Kogri	Naawie
Commodity: Sorghum									
Cultivated Area (Acres)	25	12	5	72	16	5	3	10	5
Production (bags)	25	6	4	614	24	25	15	471	84
Yield (bags/acre)	1	0.5	0.8	8.5	1.5	5	5	47.1	16.6
Cultivation method for sorghum (%)									
Mound	100	20	60	20	60	30	40	43	40
Ridge	-	70	30	5	20	30	60	15	10
Other	-	10	10	75	20	20	0	42	50
% Of farmers using inputs (Seed)									
Own seed (local seed)	80	75	80	90	80	80	80	100	70
Buy from other farmer	20	15	20	10	20	20	20	-	30
Improved seed	0	10	0	0	-	-	-	-	-
others	-	-	-	-	-	-	-	-	-
Fertilizer (%)									
Chemical	0	-	-	-	-	-	-	-	-
Organic	100	100	80	10	-	100	-	-	100
Agro-chemical (%)									
Insecticide	-	-	-	0	-	80	-	-	-
Fungicide	-	-	-	0	-	-	-	-	-
Others	-	-	-	0	-	-	-	-	-
Rates of produce used for self consumption and sold for cash (%)									
Consumption	90	80	100	70	10	50	100	90	10
Sold	10	20	-	30	90	50	-	10	90

Table 8b: Crop cultivation, cultivation method, self consumption rate and income from crops

District	Lawra			Nadowli			Jirapa		
Community	Kokodour	Puffin	Zakpee	Tabiase	Daffiama	Nanville	Nyeni	Kogri	Naawie
Commodity: Millet									
Cultivated Area (Acres)	5	4	7	15	16	2	2	10	5
Production (bags)	5	3	4	344	24	2.5	1	53	74
Yield (bags/acre)	1	.75	0.57	22.9	1.5	1.25	0.5	5.3	14.8
Cultivation method for millet (%)									
Mound	100	20	60	20	70	20	80	60	30
Ridge	-	70	30	2	10	60	20	5	20
Other	-	10	10	78	20	-20	-	35	60
% of Farmers using inputs (Seed)									
Own seed (local seed)	80	95	80	90	80	100	80	100	100
Buy from other farmer	20	5	20	10	20	-	20	-	-
Improved seed	-	-	-	-	-	-	-	-	-
others	-	-	-	-	-	-	-	-	-
Fertilizer (%)									
Chemical	-	-	-	-	-	-	-	-	-
Organic	100	100	70	100	-	100	-	-	100
Agro-Chemical (%)									
Insecticide	-	-	-	-	-	-	-	-	-
Fungicide	-	-	-	-	-	-	-	-	-
Others	-	-	-	-	-	-	-	-	-
Rates of produce used for self consumption and sold for cash (%)									
Consumption	100	80	100	99	90	99	100	100	95
Sold	-	20	-	1	10	1	-	-	5

Table 8c: Crop cultivation, cultivation method, self consumption rate and income from crops

District	Lawra			Nadowli			Jirapa		
Community	Kokodour	Puffin	Zakpee	Tabiase	Daffiama	Nanville	Nyeni	Kogri	Naawie
Commodity: Maize									
Cultivated Area (Acres)	20	13	8	76	12	6	4	18	8
Production (bags)	60	39	16	792	48	18	12	208	86
Yield (bags/acre)	3	3	2	10.4	4	3	3	11.5	10.7
Cultivation method for maize (%)									
Mound	40	20	30	3	20	30	70	61	-
Ridge	60	70	60	7	10	30	30	4	-
Other	-	10	10	90	70	40	-	35	100
% of Farmers using inputs (Seed)									
Own seed (local seed)	60	65	20	20	40	40	30	60	60
Buy from other farmer	20	25	20	10	10	0	-	10	-
Improved seed	20	-	60	70	50	60	70	30	40
others	-	5	-	-	-	-	-	-	-
Fertilizer (%)									
Chemical	90	80	50	50	30	50	30	70	60
Organic	100	20	60	100	-	50	70	30	40
Agro-chemical (%)									
Insecticide	-	-	-	-	-	-	-	-	-
Fungicide	-	-	-	-	-	-	-	-	-
Others	-	-	-	-	-	-	-	-	-
Rates of produce used for self consumption and sold for cash (%)									
Consumption	50	90	100	75	90	80	100	60	-
Sold	50	10	-	25	10	20	-	40	-

Table 8d. Crop cultivation, cultivation method, self consumption rate and income from crops

District	Lawra			Nadowli			Jirapa		
Community	Kokodour	Puffin	Zakpee	Tabiase	Daffiama	Nanville	Nyeni	Kogri	Naawie
Commodity: Groundnut									
Cultivated Area (Acres)	20	20	8	64	12	6	5	12	5
Production (bags)	80	80	18	1835	60	30	15	104	62
Yield (bags/acre)	4	4	2.25	28.6	5	5	3	8.7	12.4
Cultivation method for groundnut (%)									
Mound	-	-	-	10	10	15	-	10	-
Ridge	-	-	20	5	10	15	-	8	-
Other	100	-	80	85	80	70	100	7.2	100
% of farmers using inputs (Seed)									
Own seed (local seed)	80	65	50	70	80	80	80	80	60
Buy from other farmer	20	25	50	20	20	20	20	20	40
Improved seed	-	-	-	10	-	-	-	-	-
others	-	5	-	-	-	-	-	-	-
Fertilizer (%)									
Chemical	-	-	-	-	5	10	-	-	-
Organic	-	-	-	100	-	70	-	-	100
Agro-chemical (%)									
Insecticide	-	-	-	-	-	-	-	-	-
Fungicide	-	-	-	-	-	-	-	-	-
Others	-	-	-	-	-	-	-	-	-
Rates of produce used for self consumption and sold for cash (%)									
Consumption	80	50	80	10	10	10	10	10	60
Sold	20	50	20	90	90	90	90	90	40

Table 8e: Crop cultivation, cultivation method, self consumption rate and income from crops

District	Lawra			Nadowli			Jirapa		
Community	Kokodour	Puffin	Zakpee	Tabiase	Daffiama	Nanville	Nyeni	Kogri	Naawie
Commodity: Cowpea									
Cultivated Area (Acres)	5	8	5	30	8	3	-	-	2
Production (bags)	5	4	8	826	8	3	-	-	6
Yield (bags/acre)	1	0.5	1.6	27.5	1	1	-	-	3
Cultivation method for cowpea (%)									
Mound	100	5	60	50	20	-	-	-	40
Ridge	-	-	30	10	10	20	-	-	-
Other	-	15	10	40	70	-	-	-	60
% of Farmers using inputs (Seed)									
Own seed (local seed)	60	60	60	25	40	80	-	-	60
Buy from other farmer	20	25	30	15	10	-	-	-	40
Improved seed	20	-	10	60	50	20	-	-	-
others	-	15	-	-	-	-	-	-	-
Fertilizer (%)									
Chemical	-	-	-	-	-	-	-	-	-
Organic	-	-	-	100	-	100	-	-	100
Agro-chemical (%)									
Insecticide	20	40	20	30	-	80	-	-	60
Fungicide	-	-	-	-	-	-	-	-	-
Others	-	-	-	-	-	-	-	-	-
Rates of produce used for self consumption and sold for cash (%)									
Consumption	50	100	70	70	70	20	-	-	70
Sold	50	-	30	30	30	80	-	-	30

Table 8f: Crop cultivation, cultivation method, self consumption rate and income from crops

District	Lawra			Nawdoli			Jirapa		
Community	Kokodour	Puffin	Zakpee	Tabiase	Daffiama	Nanville	Nyeni	Kogri	Naawie
Commodity: Soybean									
Cultivated Area (Acres)	-	3	1	10	4	1	-	-	-
Production (bags)	-	3	2	75	1	1	-	-	-
Yield (bags/acre)	-	1	2	7.5	0.25	1	-	-	-
Cultivation method for Soybean (%)									
Mound	-	-	-	1	10	-	-	-	-
Ridge	-	20	80	1	-	100	-	-	-
Other	-	80	20	98	90		-	-	-
% of farmers using inputs (Seed)									
Own seed (local seed)	-	80	100	80	100	100	-	-	-
Buy from other farmer	-	10	-	15	-	-	-	-	-
Improved seed	-	-	-	5	-	-	-	-	-
others	-	10	-	-	-	-	-	-	-
Fertilizer (%)									
Chemical	-	-	-	-	-	10	-	-	-
Organic	-	-	-	100	-	90	-	-	-
Agro-Chemical (%)									
Insecticide	-	-	-	-	-	-	-	-	-
Fungicide	-	-	-	-	-	-	-	-	-
Others	-	-	-	-	-	-	-	-	-
Rates of produce used for self consumption and sold for cash (%)									
Consumption	-	100	100	20	3	1	-	-	-
Sold (Income)	-	-	-	80	97	99	-	-	-

Table 8g: Crop cultivation, cultivation method, self consumption rate and income from crops

District	Lawra			Nadowli			Jirapa		
Community	Kokodour	Puffin	Zakpee	Tabiase	Daffiama	Nanville	Nyeni	Kogri	Naawie
Commodity: Rice									
Cultivated Area (Acres)	3	4	3	22	10	2	2	6	-
Production (bags)	6	8	2	312	20	4	4	193	-
Yield (bags/acre)	2	2	0.66	14.2	2	2	2	32.1	-
Cultivation method for rice (%)									
Mound	-	-	-	-	-	-	-	-	-
Ridge	-	-	-	-	-	-	-	-	-
Other	100	100	100	100	100	-	100	100	-
% of farmers using inputs (Seed)									
Own seed (local seed)	100	90	20	90	100	100	90	100	-
Buy from other farmer	-	5	80	10	-	-	-	-	-
Improved seed	-	0	-	-	-	-	10	-	-
others	-	5	-	-	-	-	-	-	-
Fertilizer (%)									
Chemical	-	-	-	-	-	-	-	-	-
Organic	-	-	-	100	-	100	-	-	-
Agro-chemical (%)									
Insecticide	-	-	-	-	-	-	-	-	-
Fungicide	-	-	-	-	-	-	-	-	-
Others	-	-	-	-	-	-	-	-	-
Rates of produce used for self consumption and sold for cash (%)									
Consumption	50	50	80	40	50	10	100	60	-
Sold (Income)	50	50	20	60	50	90	-	40	-

Table 8h. Crop cultivation, cultivation method, self consumption rate and income from crops

District	Lawra			Nadowli			Jirapa		
Community	Kokodour	Puffin	Zakpee	Tabiase	Daffiama	Nanville	Nyeni	Kogri	Naawie
Commodity: Vegetables									
Cultivated Area (Acres)	1	-	1	15	6	0.5	-	0.5	-
Production (bags)	8 crates	-	20 crates	280 crates	48 crates	40 crates	-	210 crates	-
Yield (bags/acre)	8	-	20 crates	18.6	6	80	-	420	-
Cultivation method for vegetables (%)									
Mound	40	-	-	90	10	-	-	15	-
Ridge	50	-	90	3	-	100	-	7	-
Other	10	-	10	7	90	-	-	78	-
% of Farmers using inputs (Seed)									
Own seed (local seed)	50	-	40	20	20	50	-	5	-
Buy from other farmer	50	-	40	10	20	-	-	5	-
Improved seed	-	-	20	70	60	50	-	90	-
others	-	-	-	-	-	-	-	-	-
Fertilizer (%)									
Chemical	-	-	50	-	-	30	-	-	-
Organic	100	-	50	100	-	70	-	100	-
Agro-Chemical (%)									
Insecticide	100	-	50	-	-	-	-	40	-
Fungicide	-	-	50	-	-	100	-	60	-
Others	-	-	-	-	-	-	-	-	-
Rates of produce used for self consumption and sold for cash (%)									
Consumption	50	-	60	70	30	10	-	10	-
Sold (Income)	50	-	40	30	70	90	-	90	-

Table 9a: Production for the past 5 Years

Write (G) for good; (A) for average; and (P) for poor if the figure is not clear

District	Lawra			Nadowli			Jirapa		
Community	Kokodour	Puffin	Zakpee	Tabiase	Daffiama	Nanville	Nyeni	Kogri	Naawie
Sorghum-2003									
Area (Ha)	-	P	-	A	28	A	P	12	A
Production (B)	-	-	-	A	38	A	P	318	A
Yield (B/Ha)	-	P	-	A	1.3	A	P	26.5	A
2004									
Area (Ha)	-	A	-	P	24	P	P	12	A
Production (B)	-	-	-	P	32	P	P	315	A
Yield (B/Ha)	-	A	-	P	1.3	P	P	26	A
2005									
Area (Ha)	G	P	40	341	23	A	P	10	A
Production (B)	G	-	P	639	46	A	P	430	A
Yield (B/Ha)	G	P	P	1.8	2	A	P	43	A
2006									
Area (Ha)	G	A	45	312	20	G	P	8	A
Production (B)	G	-	A	618	36	G	P	461	A
Yield (B/Ha)	G	A	A	1.9	1.8	G	P	57.6	A
2007									
Area (Ha)	G	P	50	307	25	A	P	10	A
Production (B)	G	-	A	614	54	A	P	471	A
Yield (B/Ha)	G	P	A	2	1.3	A	P	47.1	A

Did any type of disaster occur within the six years? (Mark X if no)

(If yes, denote the severity by the following; S for severe; M for Moderate; and L for slight)

District	Lawra			Nadowli			Jirapa		
Community	Kokodour	Puffin	Zakpee	Tabiase	Daffiama	Nanville	Nyeni	Kogri	Naawie
2003									
Drought	-	L	L	L	L		L	L	L
Flood	-	L	L	L	L		L	-	-
Disease and insect	-	S	L	L	L		L	L	L
Others								-	
2004									
Drought	-	M	M	L	L	S	L	L	L
Flood	-	M	M	L	L	L	L	-	-
Disease and insect	-	S	L	L	M	L	L	L	L
Others									
2005									
Drought	L	L	S	L	L		L	L	L
Flood	L	L	S	M	M		L	-	-
Disease and insect	M	S	-	L	M		L	L	L
Others	-		S						
2006									
Drought	L	S	M	M	M	L	L	L	L
Flood	L	L	S	M	M	L	L	-	-
Disease and insect	M	S	-	L	L	L	L	L	L
Others									
2007									
Drought	X	S	S	S	S	S	S	M	S
Flood	L	S	S	M	S	S	S	M	S
Disease and insect	L	S	-	L	L	L	S	M	S
Others	-					L	-	-	

Table 9b. Production for the Past 5 Years

Write (G) for good; (A) for average; and (P) for poor if the figure is not clear

District	Lawra			Nawdoli			Jirapa		
Community	Kokodour	Puffin	Zakpee	Tabiase	Daffiama	Nanville	Nyeni	Kogri	Naawie
Millet- 2003									
Area (Ha)		-		A	20	A	A	14	P
Production (B)		-		A	32	A	A	419	P
Yield (B/Ha)		-		A	1.8	A	A	29.9	P
2004									
Area (Ha)		-		P	25	P	A	13	P
Production (B)		-		P	38	P	A	430	P
Yield (B/Ha)		-		P	1.5	P	A	33	P
2005									
Area (Ha)	G	-	40	216	28	A	A	14	P
Production (B)	G	-	P	209	57	A	A	93	P
Yield (B/Ha)	G	-	P	1.4	2.03	A	A	6.8	P
2006									
Area (Ha)	G	-	45	236	30	G	A	10	P
Production (B)	G	-	A	218	54	G	A	108	P
Yield (B/Ha)	G	-	A	1.35	1.8	G	A	10.8	P
2007									
Area (Ha)	P	-	50	229	29	A	A	10	P
Production (B)	A	-	A	344	43	A	A	53	P
Yield (B/Ha)	A		A	1.5	1.5	A	A	5.3	P

Did any type of disaster occur within the six years?

(Mark X if no) (If yes, denote the severity by the following; S for severe; M for Moderate; and L for slight)

District	Lawra			Nawdoli			Jirapa		
Community	Kokodour	Puffin	Zakpee	Tabiase	Daffiama	Nanville	Nyeni	Kogri	Naawie
2003									
Drought		L	L	L	L		L	L	L
Flood		L	L	L	L		L	-	-
Disease and insect		S	L	L	L		L	L	L
Others								-	
2004									
Drought		M	M	L	L	S	L	L	L
Flood		M	M	L	L	L	L	-	-
Disease and insect		S	L	L	M	L	L	L	L
Others									
2005									
Drought	L	L	S	L	L		L	L	L
Flood	L	L	S	M	M		L	-	-
Disease and insect	M	S	S	L	M		L	L	L
Others									
2006									
Drought	L	S	M	M	M	L	L	L	L
Flood	L	L	S	M	M	L	L	-	-
Disease and insect	M	S	-	L	L	L	L	L	L
Others									
2007									
Drought	X	S	S	S	S	S	S	M	S
Flood	L	S	S	M	S	S	S	M	S
Disease and insect	L	S	-	L	L	L	S	M	S
Others						L			

Table 9c. Production for the Past 5 Years

Write (G) for good; (A) for average; and (P) for poor if the figure is not clear

District	Lawra			Nawdoli			Jirapa		
Community	Kokodour	Puffin	Zakpee	Tabiase	Daffiama	Nanville	Nyeni	Kogri	Naawie
Maize-2003									
Area (Ha)		A		G	41	A	P	16	G
Production (B)				G	174	A	P	206	G
Yield (B/Ha)				G	4.2	A	P	18.5	G
2004									
Area (Ha)		A		A	40	A	P	15	G
Production (B)				A	152	A	P	210	G
Yield (B/Ha)				A	3.8	A	P	14	G
2005									
Area (Ha)	G	P		338	38	G	P	14	G
Production (B)	G			764	143	G	P	198	G
Yield (B/Ha)	G		G	2.26	3.8	G	P	14.1	G
2006									
Area (Ha)	G	A		218	35	A	P	16	G
Production (B)	G			741	142	A	P	240	G
Yield (B/Ha)	G		P	3.4	4.1	A	P	15	G
2007									
Area (Ha)	P	P		198	39	P	P	18	G
Production (B)	P			782	186	P	P	208	G
Yield (B/Ha)	P		A	3.9	4.7	P	P	11.5	G

Did any type of disaster occur within the six years?

(Mark X if no) (If yes, denote the severity by the following; S for severe; M for Moderate; and L for slight)

District	Lawra			Nawdoli			Jirapa		
Community	Kokodour	Puffin	Zakpee	Tabiase	Daffiama	Nanville	Nyeni	Kogri	Naawie
2003									
Drought		L	L	L	L		L	L	L
Flood		L	L	L	L		L	-	-
Disease and insect		S	L	L	L		L	L	L
Others									
2004									
Drought		M	M	L	L	S	L	L	L
Flood		M	M	L	L	L	L	-	-
Disease and insect		S	L	L	M	L	L	L	L
Others									
2005									
Drought	L	L	S	L	L		L	L	L
Flood	L	L	S	M	M		L	-	-
Disease and insect	M	S		L	M		L	L	L
Others (STORM)			S						
2006									
Drought	L	S	M	M	M	L	L	L	L
Flood	L	S	S	M	M	L	L	-	-
Disease and insect	M	L	-	L	L	L	L	L	L
Others (army worm)							L		
2007									
Drought	X	S	S	S	S	S	S	M	S
Flood	L	S	S	M	S	S	S	M	S
Disease and insect	L	S	-	L	L	L	S	M	S
Others (army worm)							S		

Table 9d. Production for the Past 5 Years

Write (G) for good; (A) for average; and (P) for poor if the figure is not clear

District	Lawra			Nawdoli			Jirapa		
Community	Kokodour	Puffien	Zakpee	Tabiase	Daffiama	Nanville	Nyeni	Kogri	Naawie
Groundnut-2003									
Area (Ha)	-	P	-	G	52	A	A	170	G
Production (B)	-	P	-	G	302	A	A	2034	G
Yield (B/Ha)	-	P	-	G	5.8	A	A	11.9	G
2004									
Area (Ha)	-	A	-	G	56	P	A	160	G
Production (B)	-	A	-	G	316	P	A	2120	G
Yield (B/Ha)	-	A	-	G	5.6	P	A	13.2	G
2005									
Area (Ha)	G	P	-	487	49	A	A	160	G
Production (B)	G	P	-	1896	319	A	A	2142	G
Yield (B/Ha)	G	P	-	3.9	6.5	A	A	13.3	G
2006									
Area (Ha)	G	A	-	438	48	G	A	98	G
Production (B)	G	A	-	1875	416	G	A	2180	G
Yield (B/Ha)	G	A	-	4.2	8.6	G	A	22	G
2007									
Area (Ha)	G	P	-	367	53	G	A	125	G
Production (B)	G	P	-	1835	418	G	A	1045	G
Yield (B/Ha)	G	P	-	5	7.8	G	A	8.4	G

Did any type of disaster occur within the six years?

(Mark X if no) (If yes, denote the severity by the following; S for severe; M for Moderate; and L for slight)

District	Lawra			Nawdoli			Jirapa		
Community	Kokodour	Puffien	Zakpee	Tabiase	Daffiama	Nanville	Nyeni	Kogri	Naawie
2003									
Drought	-	L	L	L	L	-	L	L	L
Flood	-	L	L	L	L	-	L	-	-
Disease and insect	-	S	L	L	L	-	L	L	L
Others									
2004									
Drought	-	M	M	L	L	S	L	L	L
Flood	-	M	M	L	L	L	L	-	-
Disease and insect	-	S	L	L	M	L	L	L	L
Others									
2005									
Drought	L	L	S	L	M		L	L	L
Flood	L	L	S	M	M	-	L	-	-
Disease and insect	M	S	-	L	M	-	L	L	L
Others						-			
2006									
Drought	L	S	M	M	M	L	L	L	L
Flood	L	L	S	M	M	L	L	-	-
Disease and insect	M	S	-	L	L	L	L	L	L
Others									
2007									
Drought	X	S	S	S	S	S	S	M	S
Flood	L	S	S	M	S	S	S	M	S
Disease and insect	L	S	-	L	L	L	S	M	S
Others									

Table 9e. Production for the Past 5 Years

Write (G) for good; (A) for average; and (P) for poor if the figure is not clear

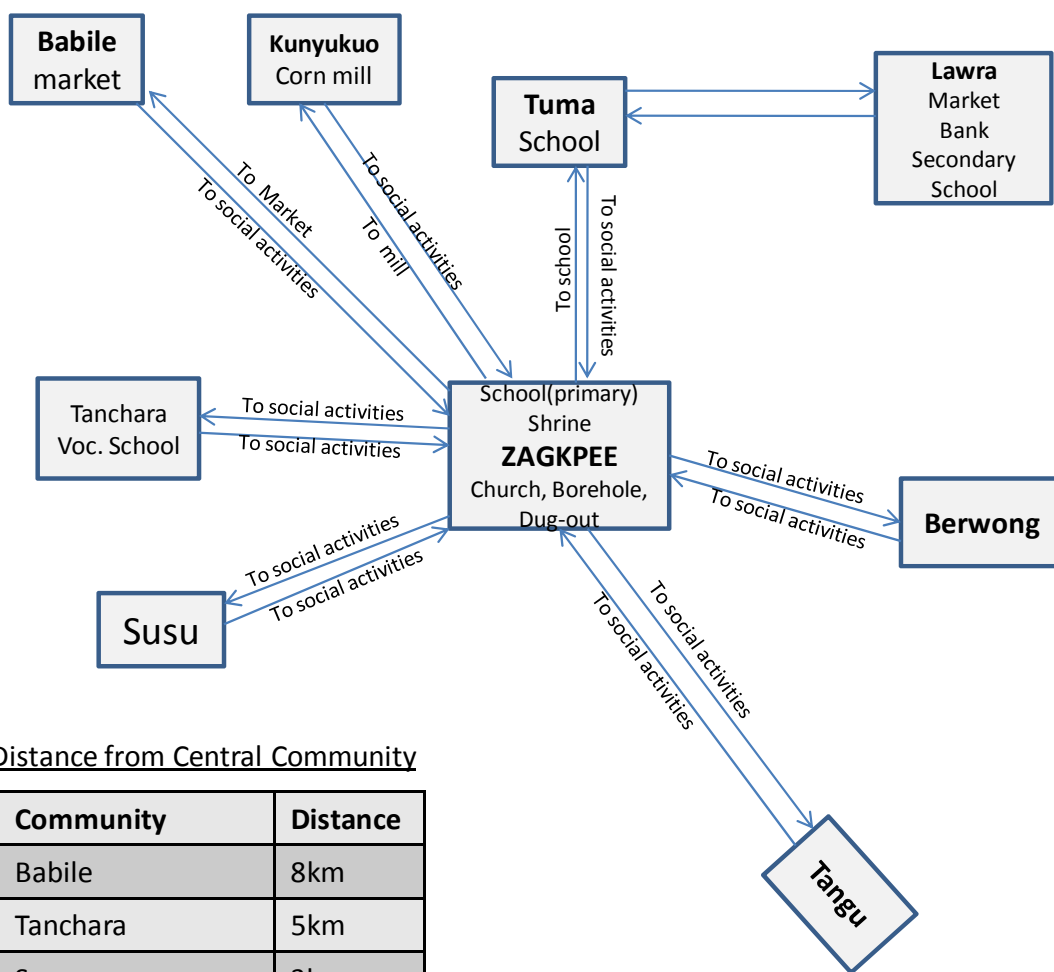
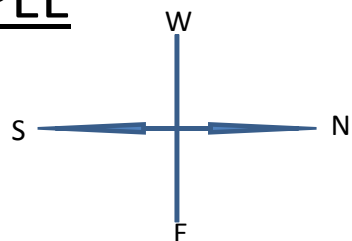
District	Lawra			Nawdoli			Jirapa		
Community	Kokodour	Puffien	Zakpee	Tabiase	Daffiama	Nanville	Nyeni	Kogri	Naawie
Cowpea-2003									
Area (Ha)	-	P	-	G	25	-	P	110	P
Production (B)	-	P	-	G	38	-	P	2911	P
Yield (B/Ha)	-	P	-	G	1.5	-	P	26	P
2004									
Area (Ha)	-	P	-	A	27	-	P	100	P
Production (B)	-	P	-	A	47	-	P	3001	P
Yield (B/Ha)	-	P	-	A	1.7	-	P	30	P
2005									
Area (Ha)	G	P	-	717	29	-	P	100	P
Production (B)	G	P	-	932	51	-	P	3100	P
Yield (B/Ha)	G	P	-	1.3	1.7	-	P	31	P
2006									
Area (Ha)	G	A	-	618	31	G	P	120	P
Production (B)	G	A	-	831	42	G	P	3118	P
Yield (B/Ha)	G	A	-	1.35	1.5	G	P	25.9	P
2007									
Area (Ha)	P	P	-	549	23	G	P	80	P
Production (B)	P	P	-	826	46	G	P	3035	P
Yield (B/Ha)	P	P	-	1.8	2	G	P	37.9	P

Did any type of disaster occur within the six years?

(Mark X if no) (If yes, denote the severity by the following; S for severe; M for Moderate; and L for slight)

District	Lawra			Nawdoli			Jirapa		
Community	Kokodour	Puffien	Zakpee	Tabiase	Daffiama	Nanville	Nyeni	Kogri	Naawie
2003									
Drought	L	L	-	L	L	-	L	L	L
Flood	L	L	-	L	L	-	L	-	-
Disease and insect	M	S	-	L	L	-	L	L	L
Others									
2004									
Drought	L	M	-	L	L	S	L	L	L
Flood	L	M	-	L	L	L	L	-	-
Disease and insect	M	S	-	L	M	L	L	L	L
Others									
2005									
Drought	X	L	-	L	L	-	L	L	L
Flood	L	L	-	M	M	-	L	-	-
Disease and insect	L	S	-	L	M	-	L	L	L
Others									
2006									
Drought	--	S	-	M	M	L	L	L	L
Flood	-	L	-	M	M	L	L	-	-
Disease and insect	-	S	-	L	L	L	L	L	L
Others									
2007									
Drought	-	S	-	S	S	S	S	M	S
Flood	-	S	-	M	S	S	S	M	S
Disease and insect	-	S	-	L	L	S	S	M	S
Others									

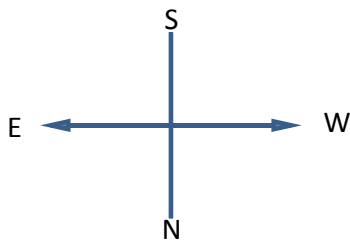
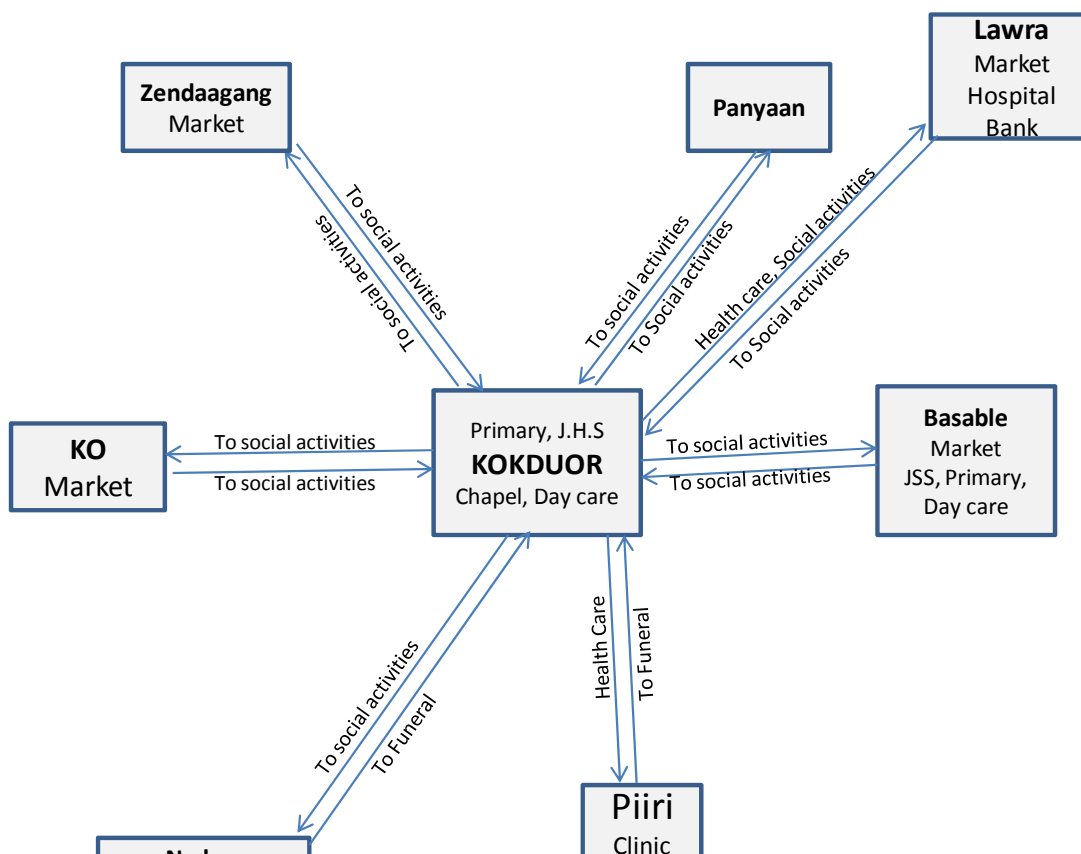
SOCIAL MAP - ZAGKPEE



Distance from Central Community

Community	Distance
Babile	8km
Tanchara	5km
Susu	3km
Tangu	100m
Berwong	5km
Lawra	10km
Tuma	100m
Kunyukuo	5km

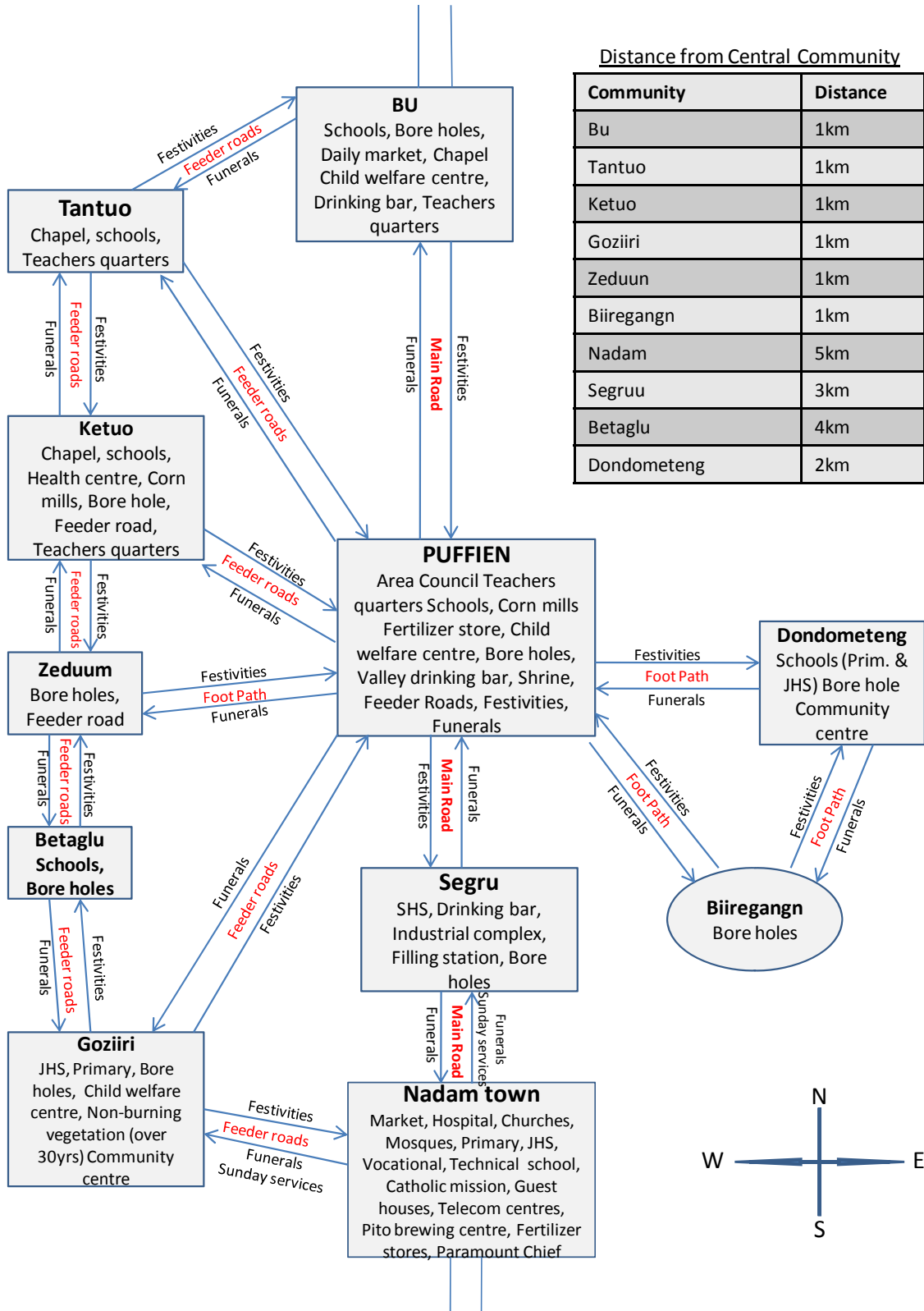
SOCIAL MAP - KOKODUOR



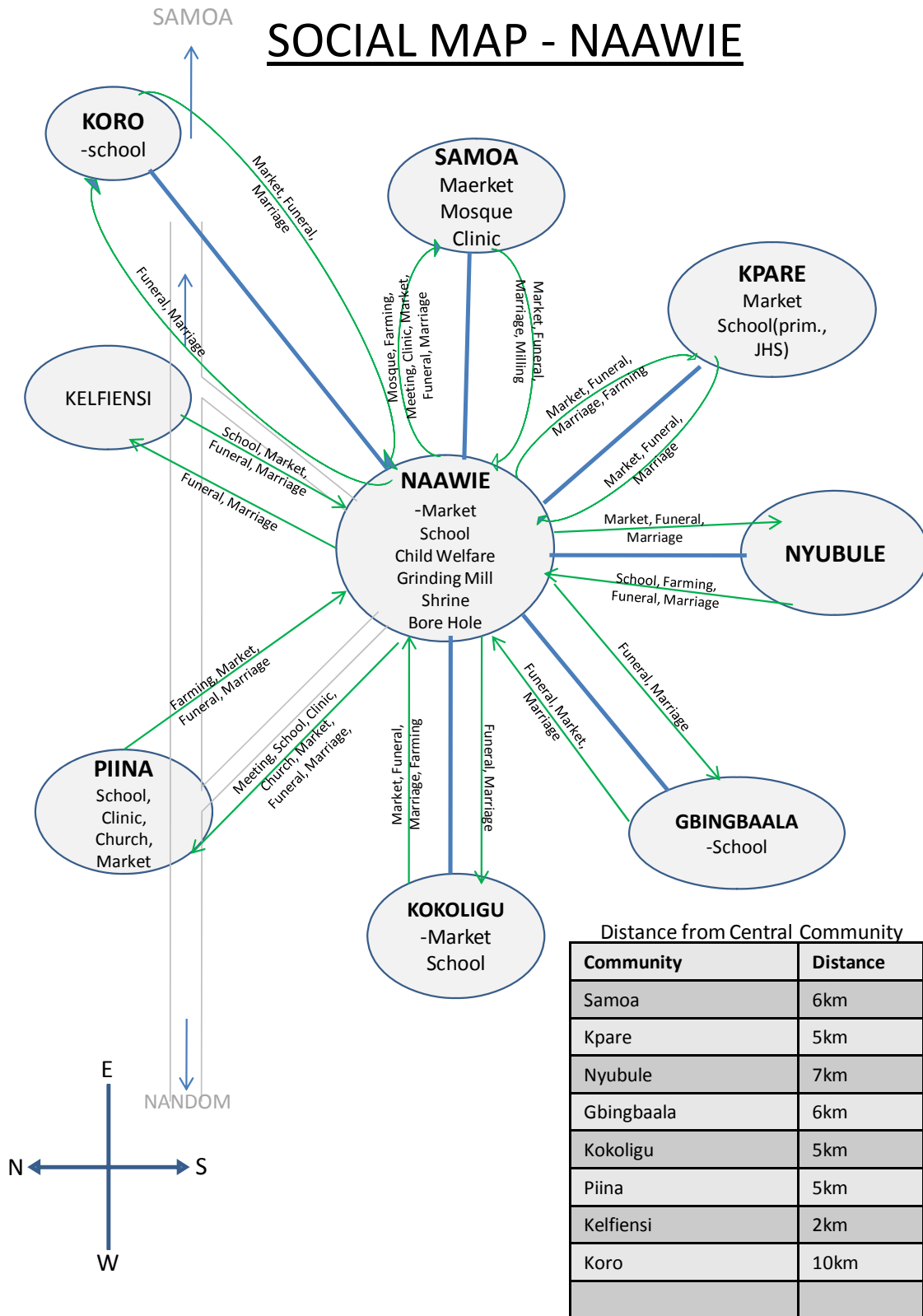
Distance from Central Community

Community	Distance
Zendaagagn	1km
Panyaan	1km
Basable	2km
Piiri	2km
Nadam	5km
Ko	3km
Lawra	15km

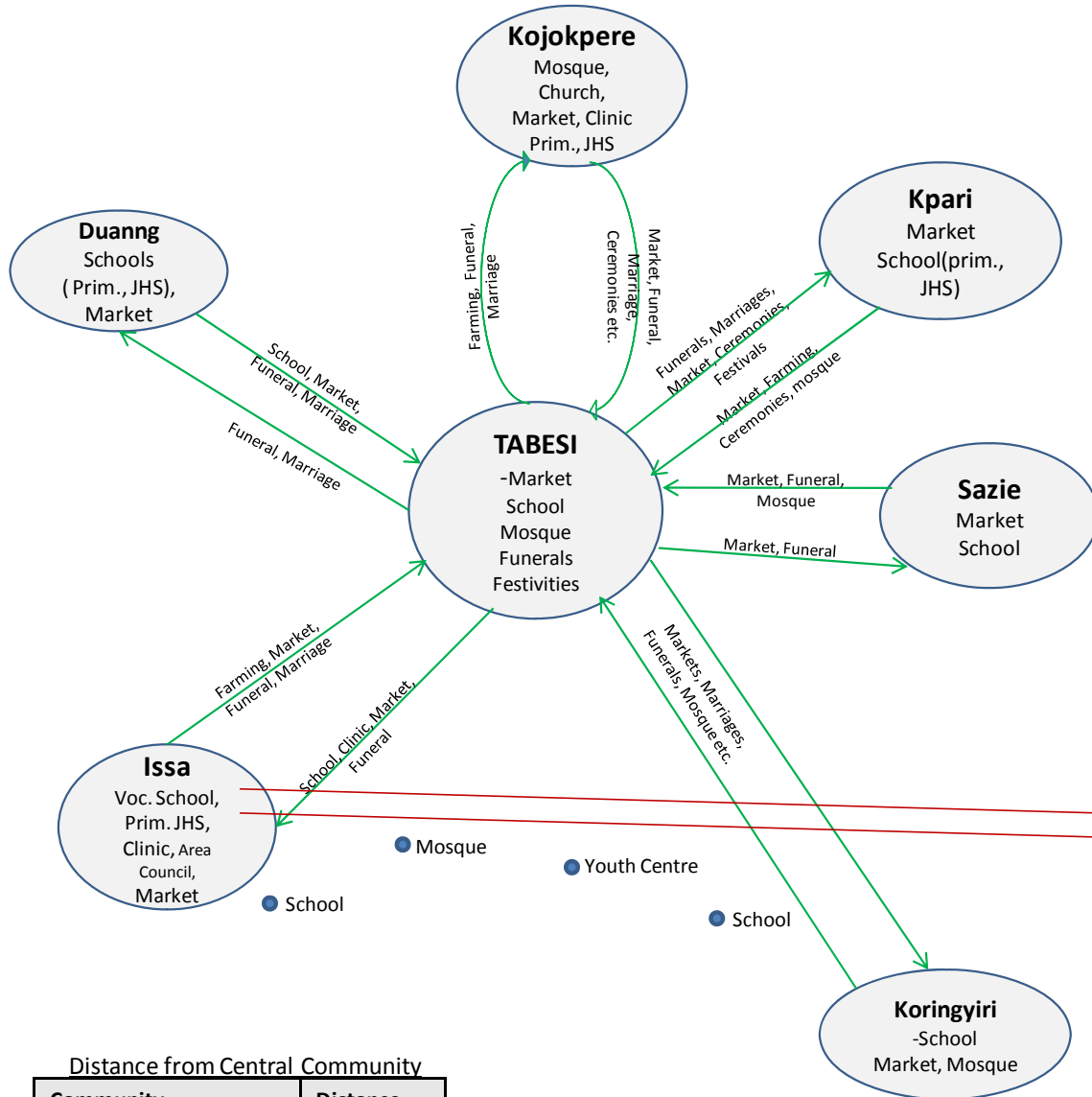
SOCIAL MAP - PUFFIEN



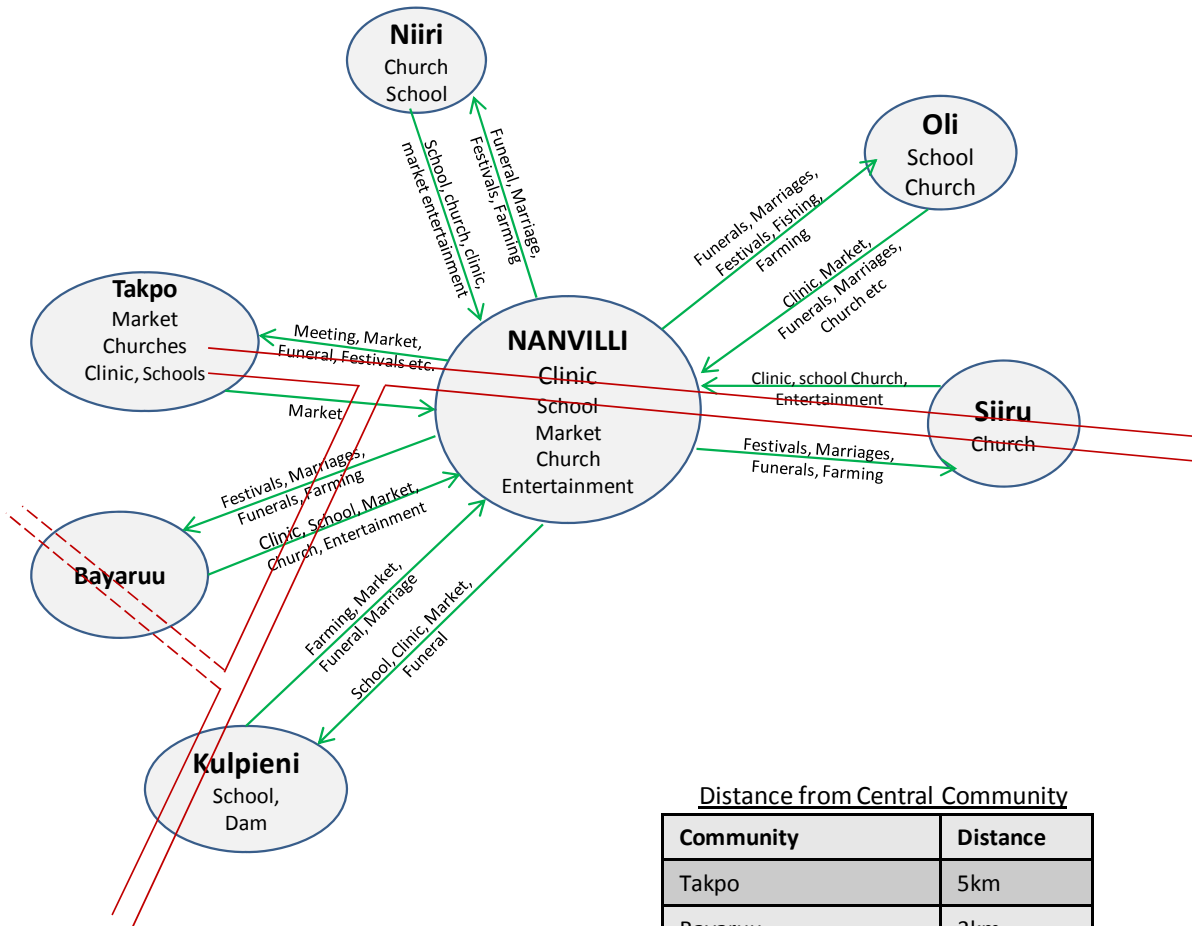
SOCIAL MAP - NAAWIE



SOCIAL MAP - TABESI



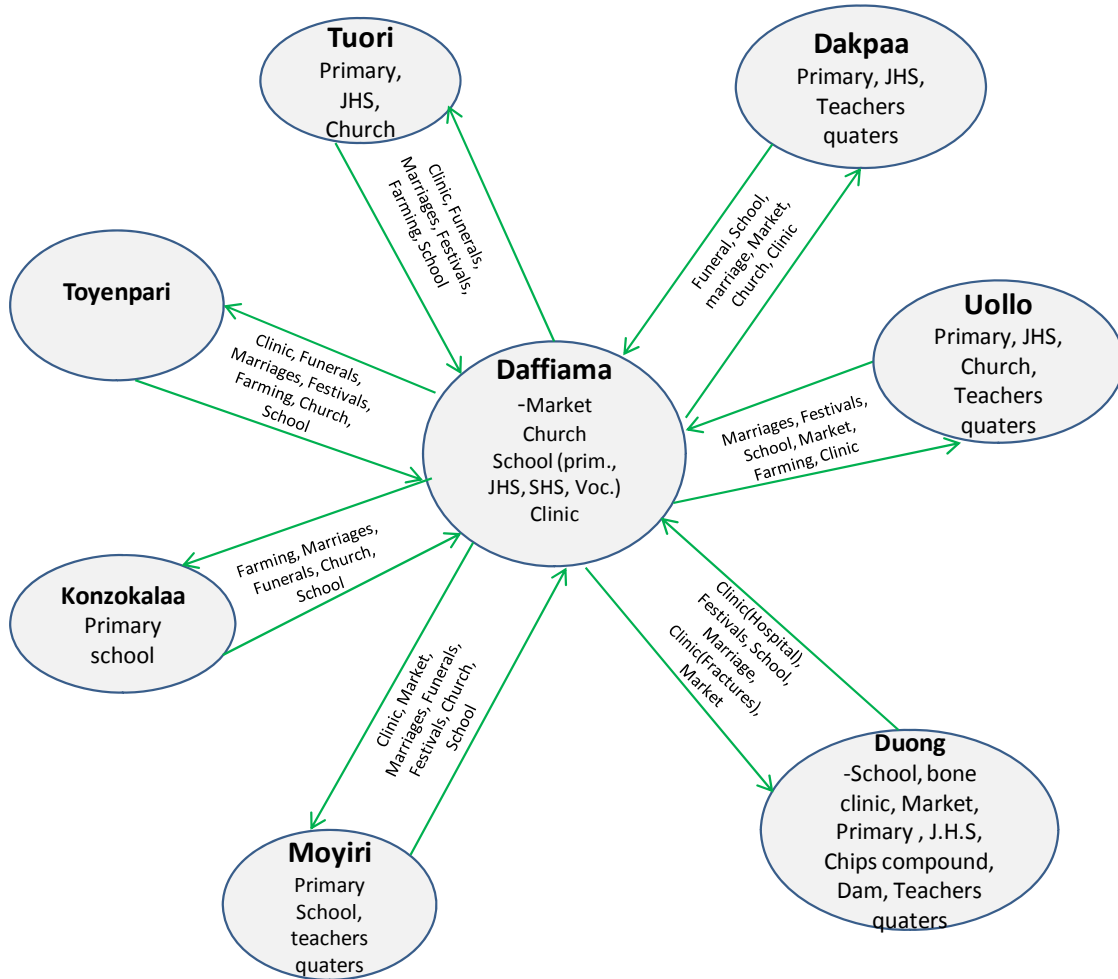
SOCIAL MAP - NANVILLI



Distance from Central Community

Community	Distance
Takpo	5km
Bayaruu	3km
Kulpieni	3km
Siiru	1km
Niiru	4km
Oli	6km

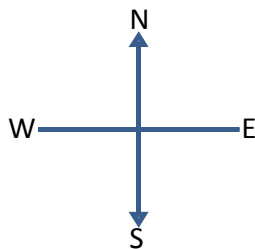
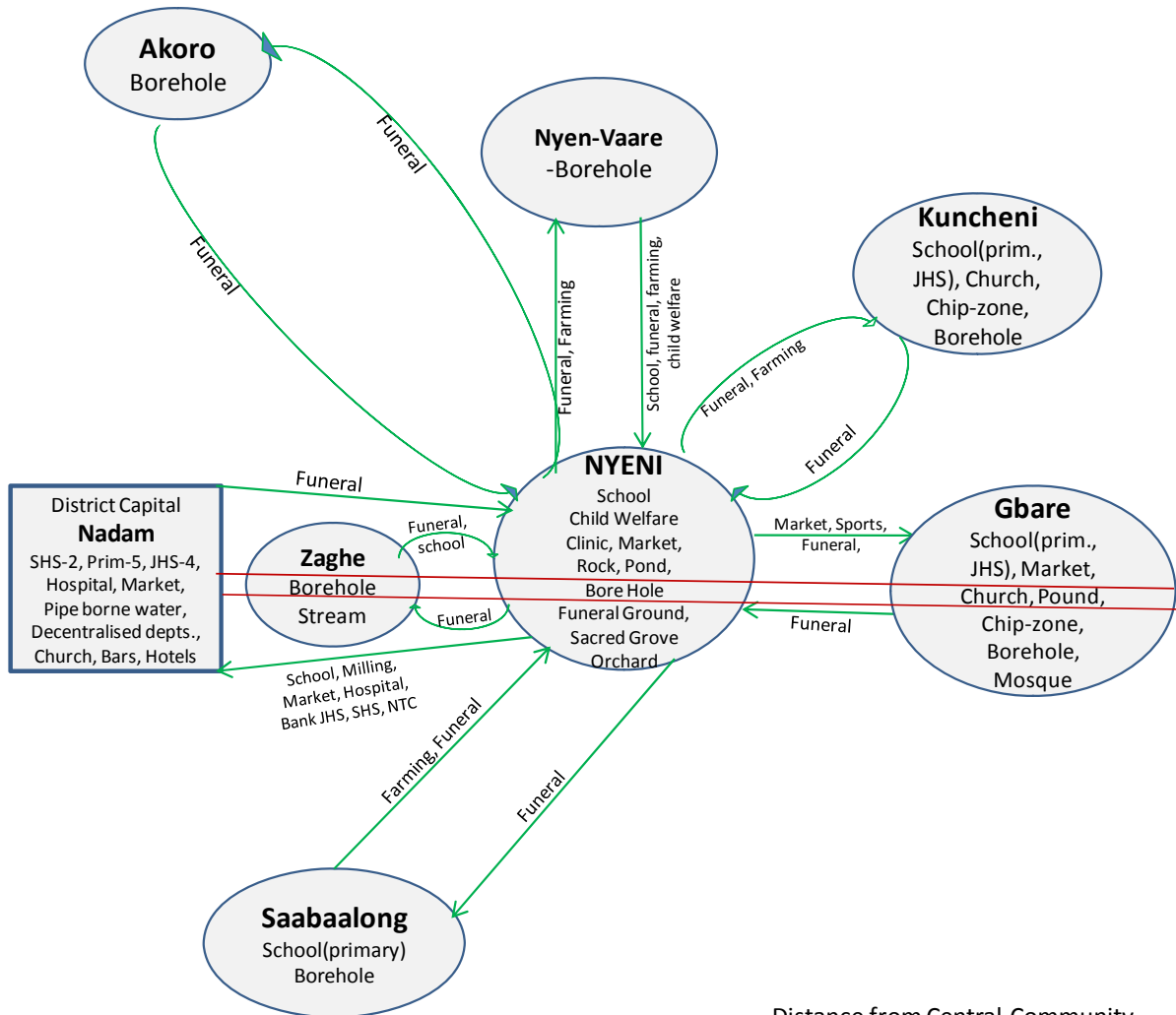
SOCIAL LINKAGES - DAFFIAMA



Distance from Central Community

Community	Distance
Tuori	5km
Dakpaa	6km
Uollo	7km
Duong	9km
Toyenpari	7km
Konzokalaa	8km
Moyiri	8km

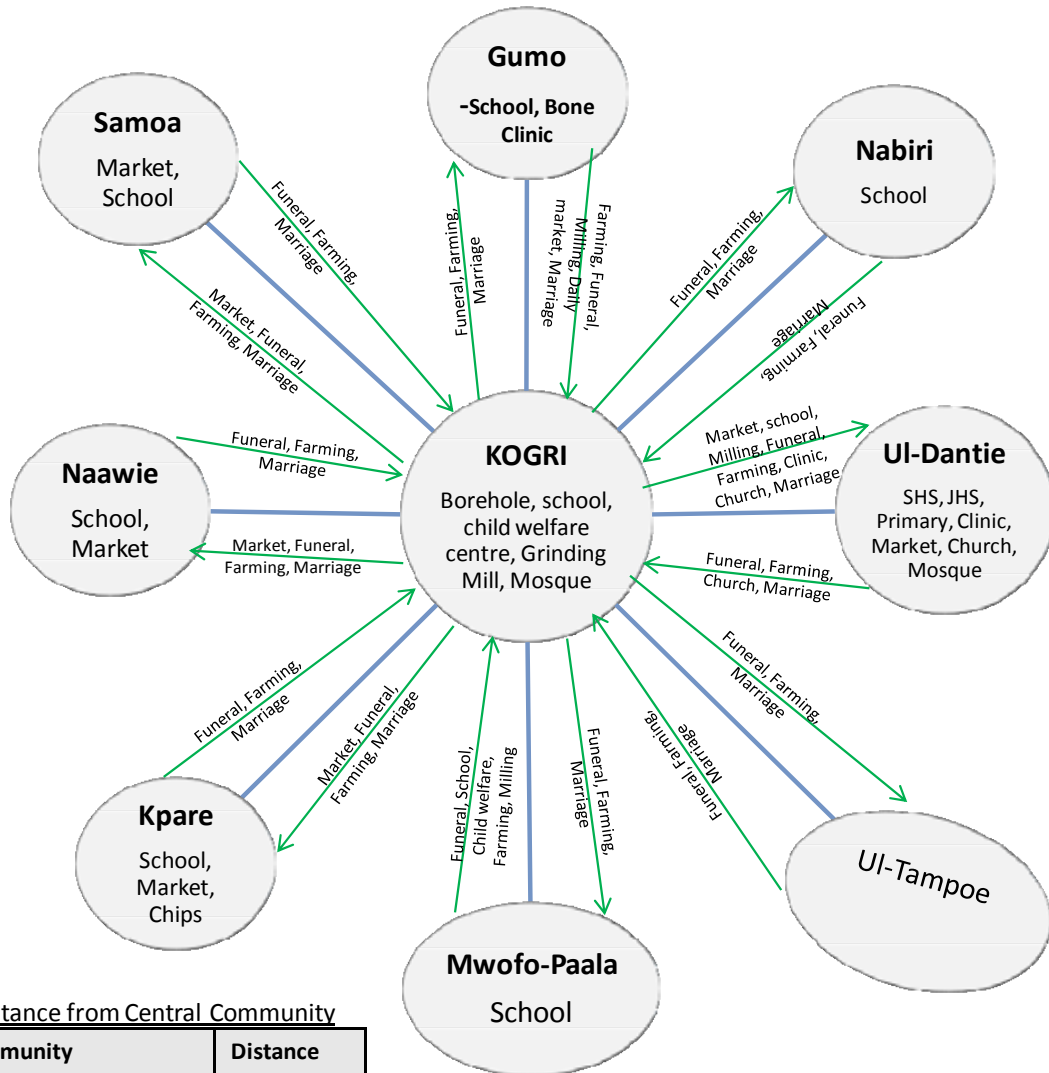
SOCIAL MAP - NYENI



Distance from Central Community

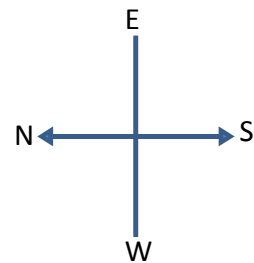
Community	Distance
Nyen-Vaare	3km
Gbare	4km
Zaghe	1km
Saabaalong	4km
Jirapa	5km
Kuncheni	6km
Akoro	2km

SOCIAL MAP - KOGRI

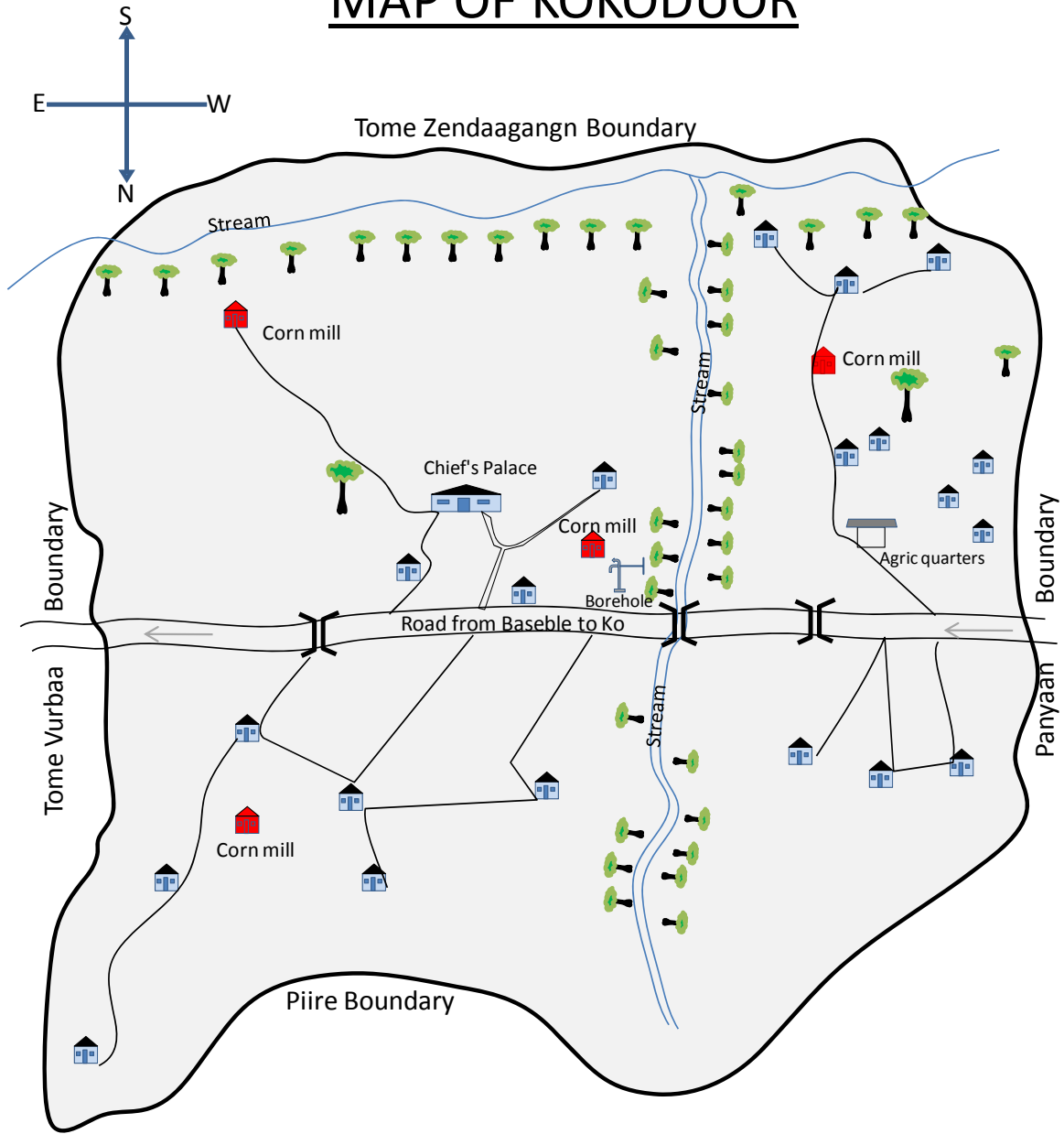


Distance from Central Community






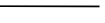



Community	Distance
UI-Dantie	5km
UI-Tampoe	7km
Mwofo-Paala	2km
Kpare	3km
Naawie	6km
Samoa	7km
Gumo	11km
Nabiri	6km



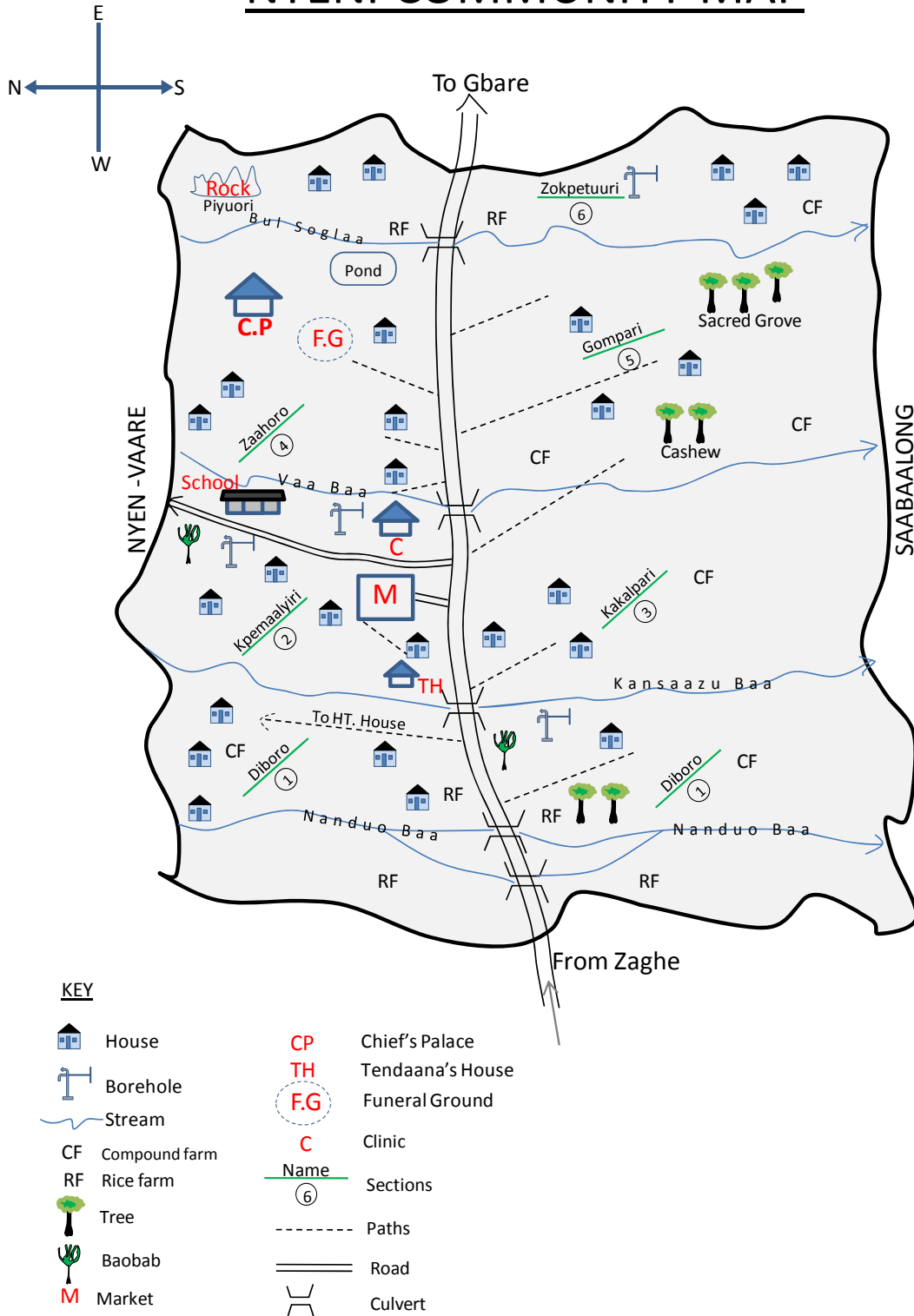
MAP OF KOKODUOR



KEY

	House		Major Stream
	Tree		Minor Stream
	Borehole		Major road
	Agric quarters		Minor road
	Culvert		









NYENI COMMUNITY MAP

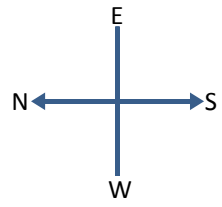


MAP OF NANVILLI

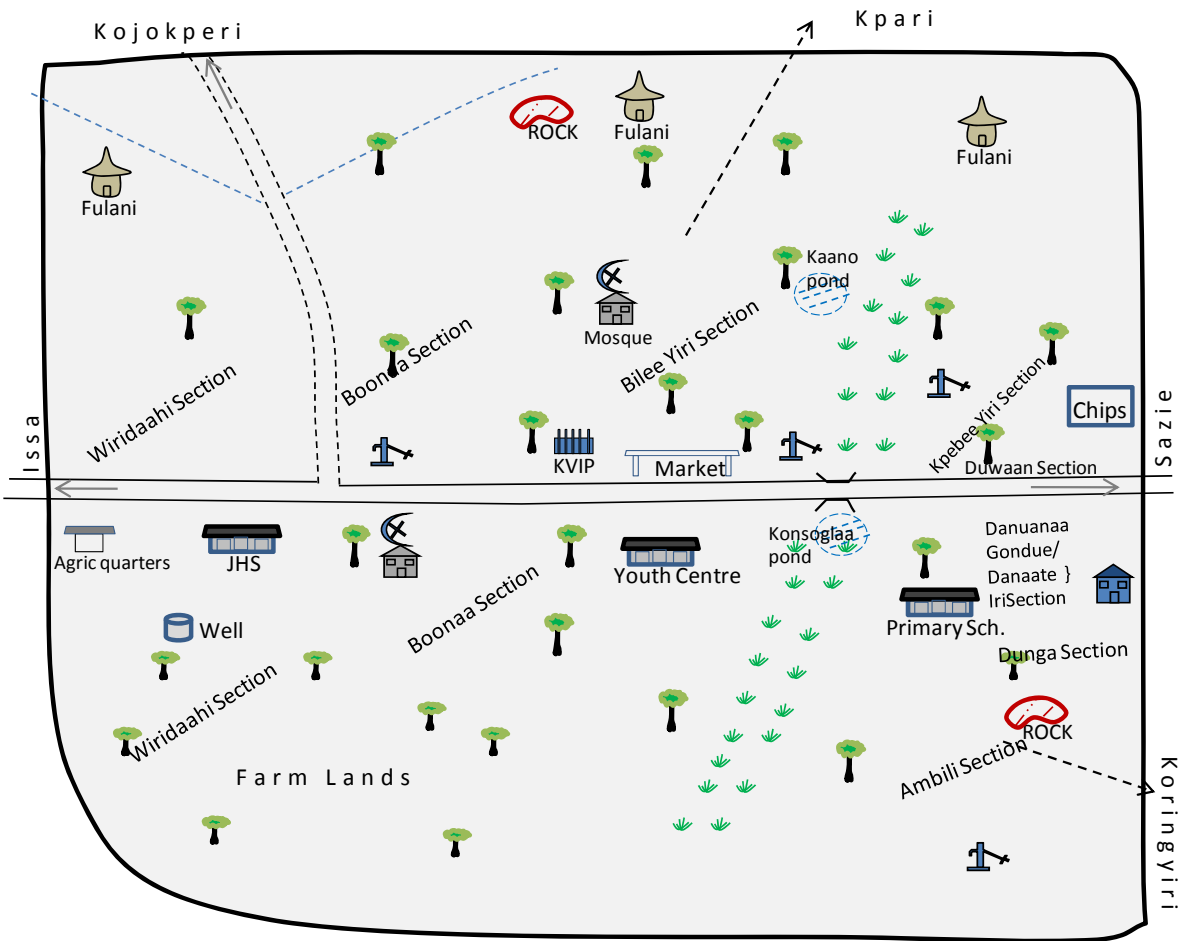


KEY







	House		Main Road
	Borehole		Paths
	Shrine		
	Trees		
	Farm		
	Clinic		

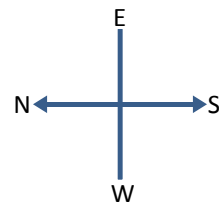


TABESI COMMUNITY MAP

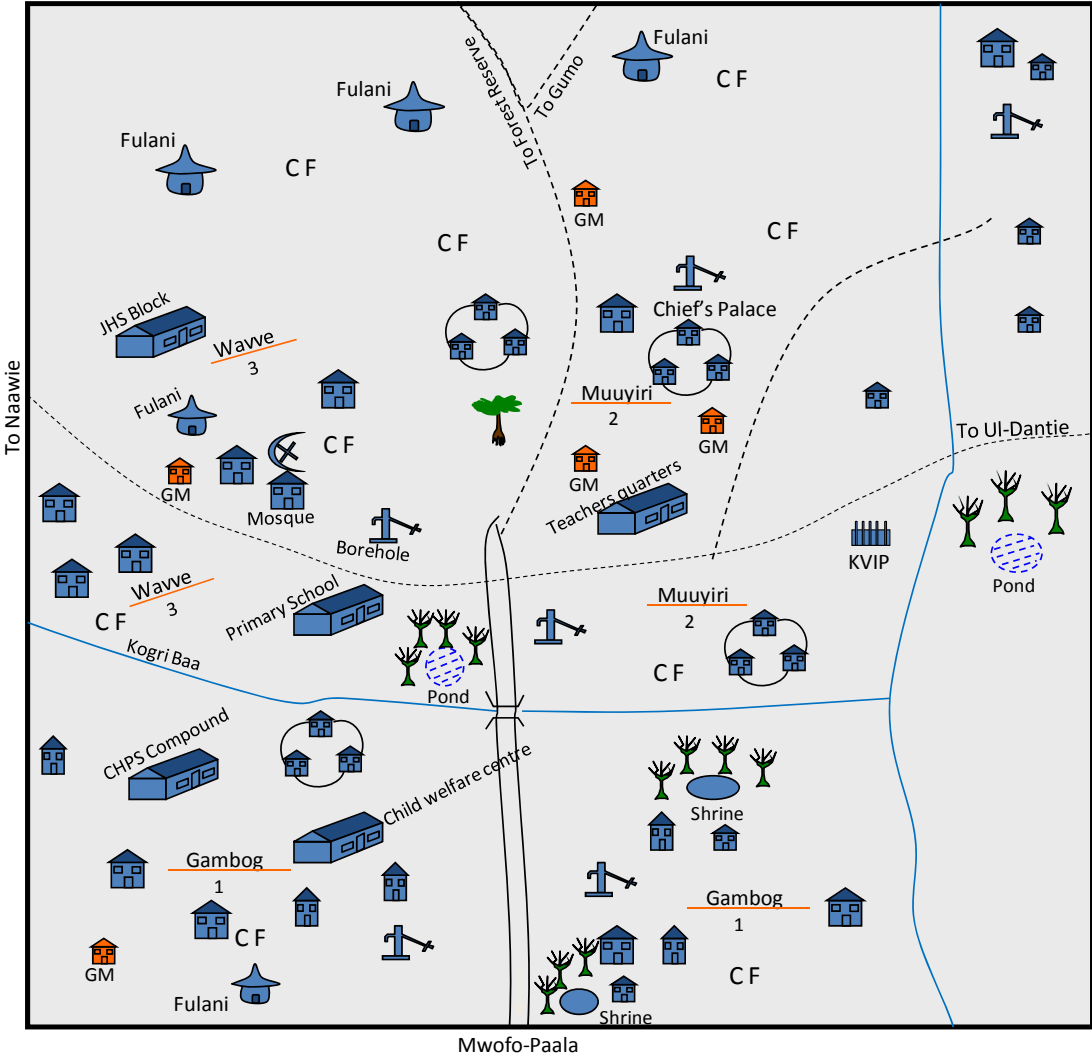
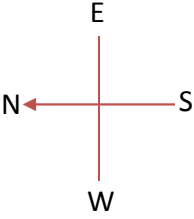


KEY

-  Tree
-  Fulani settlement
-  Borehole
-  Marshy lowland
-  Pond
-  Rock

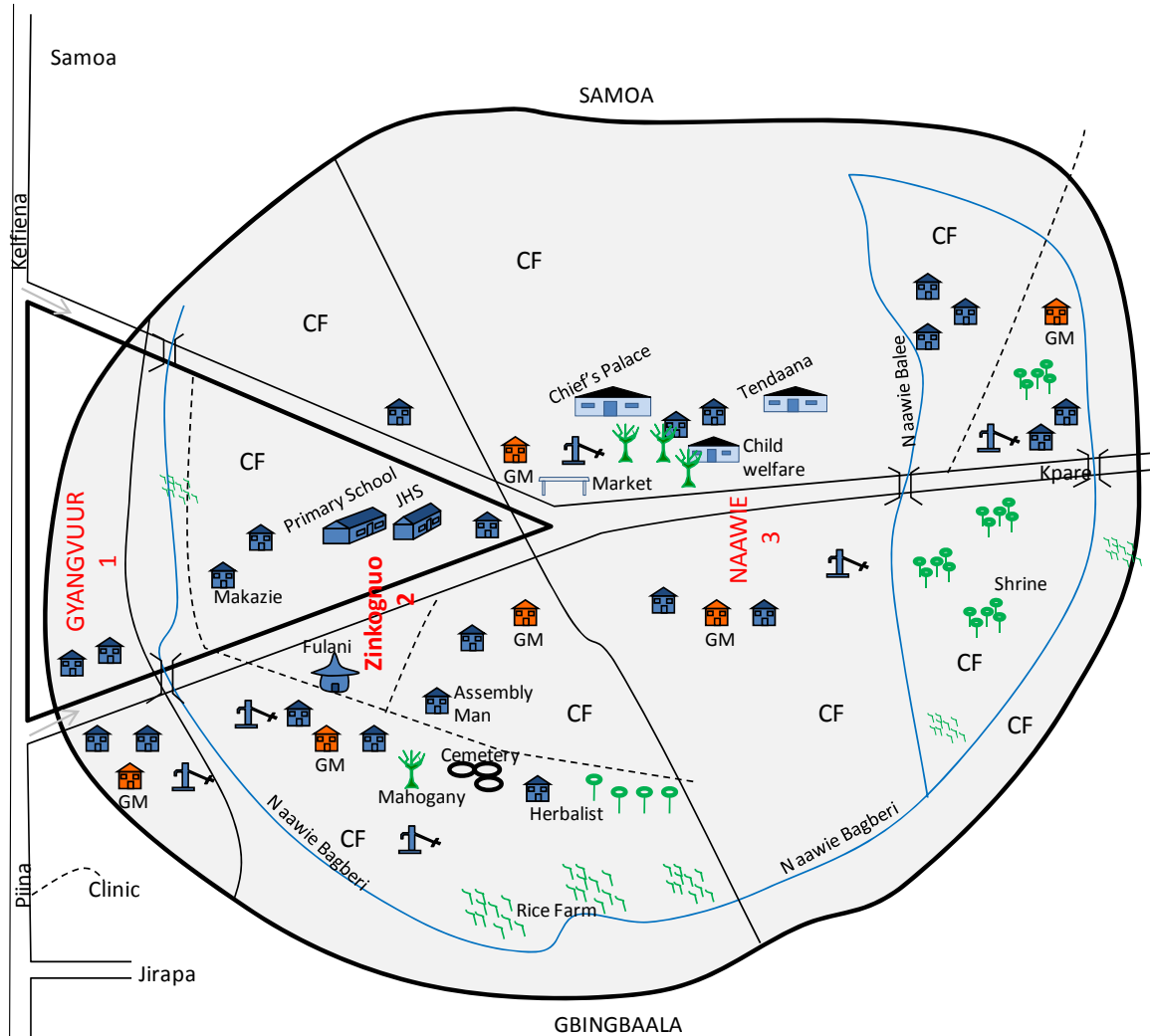








KOGRI COMMUNITY MAP




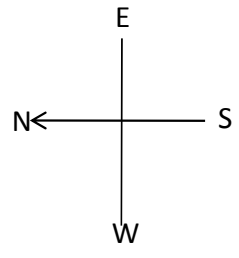
- KEY**
- Stream
 - Compound Farm
 - Path
 - Main road
 - Bridge
 - Grinding Mill
 - Name Sections
 - 1

NAAWIE COMMUNITY MAP

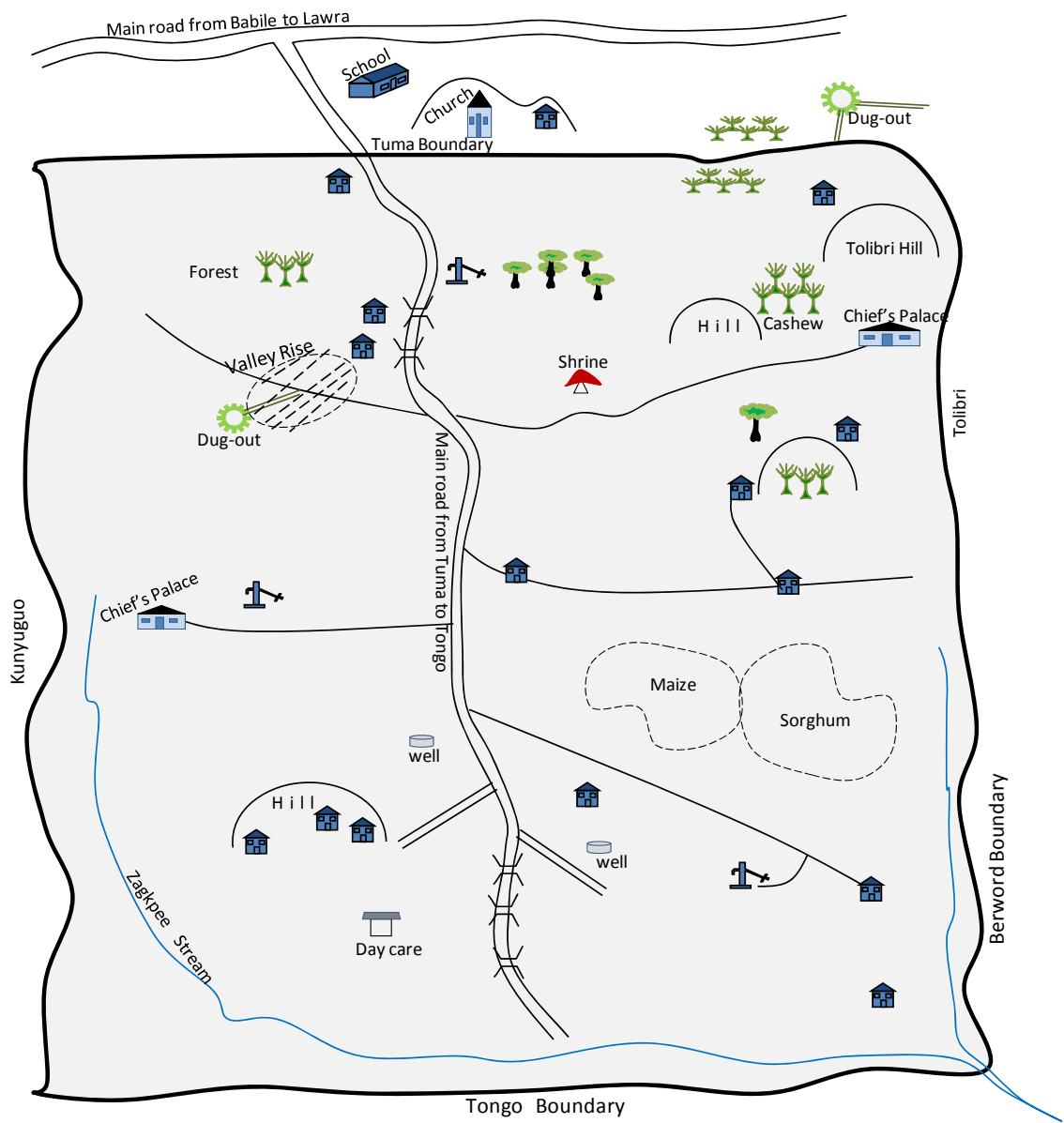


- KEY**
-  Stream
 -  CF
 -  Path
 -  Main road
 -  Bridge
 -  Grinding Mill
GM
 - Name Sections
 - 1


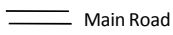

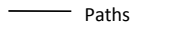

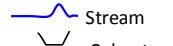






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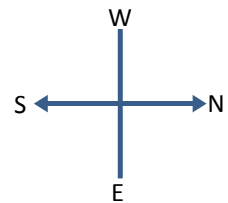


ZAGKPE COMMUNITY MAP

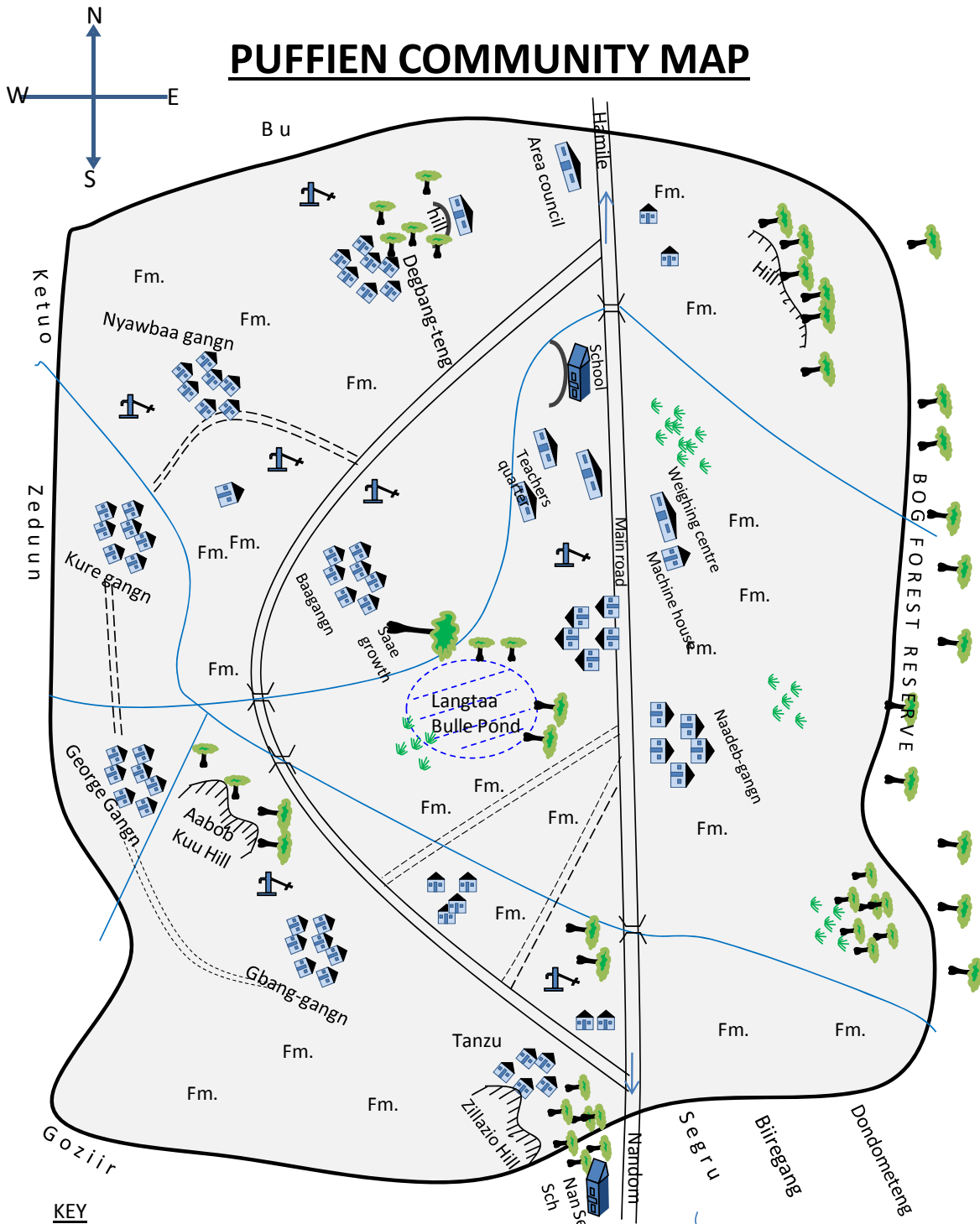


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







- | | | | |
|---|----------|---|-----------|
|  | House |  | Main Road |
|  | Borehole |  | Paths |
|  | Shrine |  | Stream |
|  | Trees |  | Culvert |
|  | Hill |  | Dug-out |
|  | Valley |  | well |



PUFFIEN COMMUNITY MAP



KEY

	Tree		Main Road
	Pond		Feeder Road
	Borehole		Stream
	Grassland		Bridge
	House		

DAFEIAMA COMMUNITY MAP

