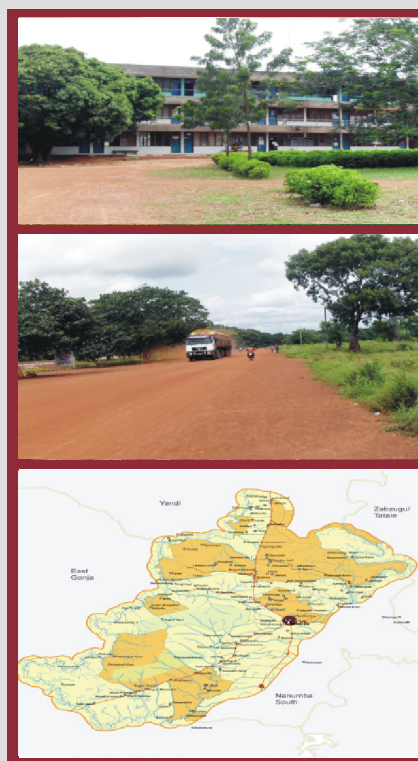


NANUMBA NORTH DISTRICT HUMAN DEVELOPMENT REPORT 2011

Resource Endowment, Investment Opportunities
and the Attainment of MDGs



Government of Ghana



United Nations Development
Programme Ghana Office
Accra

January 2011

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Foreword

Within the general framework of ensuring equity and overall development, the current set of the District Human Development Reports (DHDRs) cover a sample of 12 Metropolitan, Municipal and District Assemblies (MMDAs) in the three Northern Regions. This part of the country was selected as part of the grand strategy and intervention for the North, which feeds into the Government's Better Ghana Agenda and Savannah Accelerated Development Authority (SADA) framework. The selection of the MMDAs, which was done in consultation with the Regional Coordinating Councils, was based on equity for regional distribution and district characteristics.

The DHRs over the years serve as a catalyst through which MMDAs interpret their development agenda and focus. The reports tell the story of key human development indicators and MDGs status at the local levels. The impact and relevance of the District HDRs are evident in the shaping of the Medium-Term Development Plan of the districts and providing the districts with reliable and useful data, as well as providing information for policy making and further research. These set of twelve reports are no exception.

The main thrust of the report is to identify the resource endowments and investment opportunities of the selected MMDAs, and assess respective MDGs gaps to serve as basis for the preparation of Community Action Plans, informing the District Planning Process, and to serve as a baseline information for the evaluation of the policies and programs for the attainment of human development and the MDGs at the local levels.

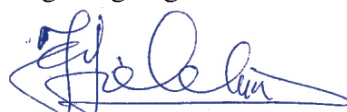
The Local Government and Rural Development Ministry sees the reports as a means to achieving equity and balanced growth in the country. It our hope and aspiration that UNDP would continue to

allocate more resources to the preparation of DHDRs, which to our minds and aspirations would be a rallying and/or focal point for MMDAs and the Central Government to focus development agendas.

Since resources are limited to cover all MMDAs at a go, with the support of UNDP, we cover very few selected MMDAs in the country. The likelihood is that we may not come back to the covered MMDAs. It is, therefore, imperative for the covered MMDAs to take it up from here and ensure continued data gathering and preparation of the reports on their own. It is in this direction that UNDP again provides equipment to support these twelve MMDAs including the Regional Economic Planning Units of the three Northern Regions to create the capacity to manage the process.

It is refreshing to also note that within the general framework, UNDP is to support the National Development Planning Commission (NDPC) to prepare training manuals for training in data management, planning and budgeting for all MMDAs in Ghana. I fully support this forward looking phenomenon because it hands over tools to our MMDAs to continuously use in addressing their development challenges and needs.

I recommend to all MMDAs to take a reading tour of the reports, to familiarize with it and on their own initiative, start working on how best to replicate this laudable idea of data collection and management to inform planning processes in their own domain. Evidence-based planning is the way to go. Let us do the useful by doing things right for a BETTER GHANA.



HON. JOSEPH YIELEH CHIREH (MP)
*Hon. Minister, Ministry of Local Government
and Rural Development*

Preface

The UNDP Ghana Country Office, in collaboration with stakeholders and other partners, has been facilitating the production and dissemination of Human Development Reports (HDRs) in Ghana since 1997. These reports aim to enrich policy and provide analytical basis to the Government of Ghana (GoG) and a wide range of development stakeholders in the analysis of and response to key development issues. This cooperative effort has significantly enriched development dialogue and helped to shape policy action at all levels. The HDRs have so far been produced at two levels, national and district levels and currently a pilot regional report has been initiated.

The current set of the District HDRs cover 12 districts, namely, Karaga, Tamale Metro, Bole, East Mamprusi, Nanumba North, Zabzugu Tatale (in the Northern Region); Bolgatanga, Bawku West, Lawra (in the Upper East Region); and Sissala East, Wa Municipal, Kasena Nankana (in the Upper West) on the theme "*Resource Endowment, Investment Opportunities and the Attainment of the MDGs*". In the context of regional disparity, the choice of these districts is deliberate in order to analyse the human development situations and assess the progress of the district towards the realization of the MDGs. With barely five years to the deadline set to meet the MDG targets, the reports provide a unique opportunity to examine possible resource gaps that challenge local level efforts to meet and improve performance on the MDGs. The reports further discuss the resource endowments and investment opportunities in the districts and how these impinge on the

attainment of MDGs and improvement of human development at the local level.

The reports provide baseline district level data, information for policy making, and opportunity for further research for formulation and implementation of District Medium-Term Development Plans. It is the fervent aspiration and hope of UNDP that the findings of these reports would go a long way not only to inform the UNDP's Local Economic Development program in some selected districts in Northern Ghana but also provide insight to Government and other partners in their support at the decentralized level in these districts. These Human Development Reports should therefore lead to building of synergies and further improve programming to serve the needs of the people.

It is my hope that the District Human Development Reports (DHDRs) would serve as entry points for policy dialogue by serving as analytical tools for the Government of Ghana and other development stakeholders including investors in their responses to key development issues and investment opportunities at the grassroots level.

These reports are clear reference points for the development agenda of the Metropolitan, Municipal, and District Assemblies (MMDAs) covered and serve as building blocks as they formulate strategies of intervention to make an improvement in people's lives.



RUBY SANDHU-ROJON
UNDP Resident Representative

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Initiation, Sponsorship and Report Writing: This is the third set of the District Human Development Reports but a maiden one for Nanumba District initiated and funded by the United Nations Development Programme (UNDP). Many people contributed to the realization of this report. We acknowledge the efforts of Mr. Marshall Kala, the consultant for the field work and the writing of this report.

Secondary and Field Research: We appreciate the enormous contribution (information and validation) from the leadership of the Nanumba District Assembly especially Officers-in-Charge of the following departments and services: Coordinating Directorate, Planning, Agriculture, Cooperatives, Works, National Disaster Management Organization (NADMO), Ghana Education Service (GES) and Ghana Health Service (GHS). We also appreciate the contributions of the following personnel of the Northern Regional Administration: Mr. Gregory A. Addah — Regional Economic Planning Officer, Mr. Habib Shahadu — Assistant Development Planning Officer, and Mr. Selasi Asemsro — Regional Statistician.

To all the respondents we say *thank you*.

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of UNDP), Mr. Paul Derigubaa (former Programme Specialist — Strategy and Policy Unit), Ms. Ruby Sandhu-Rojon (the Resident Coordinator of the UN System and the Resident Representative of UNDP); K. K. Kamaluddeen (Country Director, UNDP), Pa Lamin Beyai (Economic Advisor, UNDP); Shigeki Komatsubara (Deputy Country Director — Programmes, UNDP); Ms. Mary Ankrah (Programme Assistant); Ms. Coretta Jonah (Economic Analyst — Strategy and Policy Unit, UNDP); Kordzo Sedegah (Economic Specialist and the Report Coordinator — Strategy and Policy Unit, UNDP); and Mr. Magnus Ebo Duncan (Head, Economic and Industry Statistics Division, Ghana Statistical Service).

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Abbreviations

AIDS	Acquired Immune Deficiency Syndrome
APR	African Peer Review
BDA	Bole District Assembly
BECE	Basic Education Certificate Education
CBO	Community Based Organizations
CBRDP	Community Based Rural Development Programme
CERSGIS	Centre for Remote Sensing and Geographic Information Services
CHPS	Community-Based Health Planning and Services
CIFS	Community-Driven Initiatives on Food Security
CWIQ	Core Welfare Indicators Questionnaire
DA	District Assembly
DACF	District Assembly Common Fund
DHDR	District Human Development Report
EA	Enumeration Area
FBO	Farmer Based Organizations
FGD	Focused Group Discussion
GDHS	Ghana Demographic and Health Survey
GPI	Gender Parity Index
GDP	Gross Domestic Product
GER	Gross Enrolment Ratio
GIS	Geographic Information System
GLSS	Ghana Living Standards Survey
GMH	Ghana Macroeconomics Health
GPRS I	Ghana Poverty Reduction Strategy
GPRS II	Growth and Poverty Reduction Strategy
GPS	Global Positioning System
GSS	Ghana Statistical Service
HDI	Human Development Index
HIV	Human Immunodeficiency Virus
HPI-G	Human Poverty Index
ISSER	Institute of Statistical, Social and Economic Research
ITN	Insecticide Treated Nets
JHS	Junior High School
KVIP	Kumasi Ventilated Improved Project
LUT	Land Utilization Types
MDA	Ministries, Departments and Agencies
MDGs	Millennium Development Goals
MOFA	Ministry of Food and Agriculture
MOH	Ministry of Health
MTDPs	Medium Term Development Plans
NA	Not Applicable
NNDA	Nanumba North District Assembly

NDPC	National Development Planning Commission
NEPAD	New Partnership for African Development
NER	Net Enrolment Ratio
NGO	Non-Governmental Organization
NHIS	National Health Insurance Scheme
NORPREP	Northern Region Poverty Reduction Programme
ORS	Oral Rehydration Salt
PPP	Purchasing Power Parity
RBA	Roll Back Malaria
SHEP	Self Help Electrification Project
SHS	Senior High School
STME	Science Technology Mathematics Education
TBA	Traditional Birth Attendants
UNDP	United Nations Development Programme
UNICEF	United Nations Children's Fund
ZTDA	Zabzugu Tatale District Assembly

Contents

<i>Foreword</i>	iii
<i>Preface</i>	iv
<i>Acknowledgements</i>	v
<i>Abbreviations</i>	vi
<i>List of Tables</i>	xi
<i>List of Illustrations</i>	xiii
<i>Executive Summary</i>	xv
1 INTRODUCTION	1
Human Development	1
Classification of Resources	3
Resources, Investment Opportunities and MDGs	4
Objectives and Scope of Assignment	4
Data and Methodology	5
2 PROFILE OF NANUMBA NORTH DISTRICT ASSEMBLY	8
Physical Characteristics	8
Climatic Conditions	8
Vegetation and Soils	9
Demographic Characteristics	9
Housing Conditions and Socio-Economic Characteristics	13
Formal Financial Services	16
Security and Legal Services	16
3 ECONOMIC ACTIVITY AND POVERTY	17
Introduction	17
Employment	17
4 EDUCATION AND LITERACY	21
Introduction	21
Educational Infrastructure	22
Access to Education	22
School Enrolment	23
Educational Quality	26
Non-Formal Education	26
5 HEALTH, WATER AND SANITATION	28
Introduction	28
Health Care Infrastructure and Personnel	28
Health Status of Mothers and Children	30

	Incidence of Diseases	31
	HIV/AIDS and Other Diseases	32
	Use of the National Health Insurance Scheme	33
	Access to Safe Water and Sanitation	33
6	RESOURCE ENDOWMENTS AND INVESTMENT OPPORTUNITIES	35
	Introduction	35
	Natural/Environmental Resources	35
	Physical Resources	40
	Socio-economic Resources	41
	Human Resources	44
	Institutional Structure and Governance	45
7	RESOURCE UTILIZATION AND CONSTRAINTS	49
	Introduction	49
	Access and Utilization of Resources	49
	Constraints to Resource Utilization	51
8	INVESTMENT OPPORTUNITIES AND RISK FACTORS	55
	Introduction	55
	Investment Opportunities	55
	Investments at the Household Level	56
	Contributions to Community Development Projects	58
	Risk Factors and Environmental Hazards	59
9	SUMMARY AND RECOMMENDATIONS	62
	APPENDICES	64
	Appendix 1: Human Poverty Index (Hpi-G).....	64
	Appendix 2: A Compilation of Household Assets.....	66
	REFERENCES	67

List of Tables

1.1	Resource Classification	3
2.1	Projected Total Population, 2000–2008	9
2.2	Basic demographic indicators in 2000	11
2.3	Ethnic Composition of the Population	12
2.4	Religious Affiliation (%)	12
2.5	Household Characteristics	13
2.6	Energy Source for Lighting	14
2.7	Energy Source for Cooking	14
2.8	Household Toilet Facilities	14
2.9	Solid Waste Disposal	15
2.10	Liquid Waste Disposal	15
2.11	Main Source of Drinking Water	16
3.1	Distribution of the Population by Industry of Economic Activities (%)	18
3.2	Main Employment by Sector (%)	18
3.3	The Underemployed and Industry of Activity	19
3.4	Average Yield of Selected Crops Under Rain-fed Conditions	20
4.1	Number of Educational Institutions	22
4.2	Proportion of Households and Time Taken to Reach the Nearest Primary School (%) ...	23
4.3	Proportion of Households and Time Taken to Reach the Nearest JHS (%)	23
4.4	Proportion of Households and Time Taken to Reach the Nearest SHS (%)	23
5.1	Health-Care Facilities in Nanumba North District	30
5.2	Health Workers in Nanumba North District	30
5.3	Infant Mortality Rate	30
5.4	Maternal Mortality	31
5.5	Top Five Causes of Morbidity in Nanumba North District	31
5.6	Household Measures to Prevent Malaria in Nanumba North District	32
5.7	Utilization of the National Health Insurance Scheme	33
5.8	Main Source of Drinking Water	34
6.1	Matrix of Land Cover/Land Use Distribution in the District	37
6.2	Attributes of Land Utilization Types	39
6.3	Area Planted to Selected Food Crops (ha)	39
6.4	Qualification of District Assembly Staff	45
6.5	Priorities and Specific Objectives of Nanumba North District Medium-Term Development Plan, 2006–2009	47
7.1	Ownership of Selected Resources (%)	50
7.2	Relevance of Resource to Household (%)	50
7.3	Payment for the Use of Resources	51
7.4	Willingness to Pay for the Use of Resources	51
7.5	Source of Fertilizer Used by Farmers, 2007 and 2008	53
8.1	Investments in Seeds Used by Farmers, 2007 and 2008	57
8.2	Investments in Fertilizer (%).....	57

8.3	Investment in Agrochemicals (%).....	57
8.4	Contributions to Community Development Projects	58
8.5	Household Environmental Risks and Coping Strategies	59

List of Illustrations

BOXES

1.1 Calculating the Human Development Index	2
4.1 The MDGs and Human Development Indicators for Education	21
5.1 The Health Component of the MDGs and Human Development	28

FIGURES

1.1 Relationship between Endowed Resources, Investment Opportunities and the Attainment of MDGs	4
2.1 Total Amount of Rainfall in Nanumba North, 1996–1005	8
2.2 Religious Background of Households, 2008	12
2.3 Energy Source for Lighting, 2008	13
2.4 Source of Energy for Cooking, 2008	14
2.5 Toilet Facilities for Households	14
2.6 Solid Waste Disposal, 2008	15
2.7 Liquid Waste Disposal, 2008	15
2.8 Drinking Water Sources, 2008	16
3.1 Problems Confronting the Economically Active in their Main Economic Activities	19
3.2 Production of Major Crops in Nanumba North District	19
4.1 Total Enrolment in Nanumba North District, 2005/06–2008/09	23
4.2 School Enrolment by Gender in the Nanumba North District, 2005/06–2008/09	24
4.3 Kindergarten Enrolment by Gender, 2005/06 to 2008/09	24
4.4 Primary School Enrolment by Gender, 2005/06 to 2008/09	25
4.5 JHS Enrolment by Gender, 2005/06 to 2008/09	25
4.6 SHS Enrolment by Gender, 2005/06 to 2008/09	26
5.1 Tuberculosis Incidence in Nanumba North District Assembly, 2006–2006	33
6.1 Area Planted to Major Crops, 2000 to 2006	40
7.1 Seed Sources Used by Farmers, 2007 and 2008	52
7.2 Seed Types Used by Farmers, 2007 and 2008	52
7.3 Storage Sources for Harvested Farm Products, 2007 and 2008	53
7.4 Type of Agrochemicals Used by Farmers, 2007 and 2008	53

MAPS

2.1 Population Distribution of the Nanumba North District Assembly	10
5.1 Distribution of Health Facilities in the Nanumba North District	29
6.1 Distribution of Soil Types	36
6.2 Distribution of Land Cover and Land Use	38
6.3 Distribution of Educational Facilities	42
6.4 Distribution of Market Facilities	43

PICTURES

4.1	Administration Block of Bimbila (Training College) College of Education	22
6.1	Main Bimbila Yendi Road	41
6.2	Community Information Centre, Bimbila	41
6.3	Nanumba North District Assembly, Bimbila	45

Executive Summary

Introductory Overview

The Government of Ghana signed up to the Millennium Development Goals (MDGs), which came into effect in 2000 and has since made conscious efforts at integrating the MDGs into the overall national development framework and poverty reduction in the country. Although considerable amount of progress has been made towards achieving the poverty, hunger and education related MDGs, progress towards achievements within the health related targets have stagnated. Most often, assessments on the MDGs are made based on national aggregate, which do not give a true reflection of what is happening at the regional and district levels. In order to make an accurate assessment of progress made in the district towards the MDGs, there is the need for a more disaggregated district level data. Hence the use of district level secondary data and ISSER's 2008 survey results in this report has enabled an analysis of the district's progress towards attaining the targets set out in Ghana's MTDPs as well as the MDGs.

This Human Development Report (HDR) for the Nanumba North District Assembly is one of the 12 human development reports for 2011 sponsored by the United Nations Development Programme (UNDP) in Ghana. The 12 reports cover Bole, Nanumba North, Zabzugu Tatale, Tamale, Karaga and East Mamprusi all in the Northern Region; Bolgatanga, Bawku West, and Kassena Nankana in the Upper East Region; and Wa, Lawra and Sissala East in the Upper West Region.

The Nanumba North District report analyzes the human development situation

and assesses the progress of the assembly towards the realization of the MDGs. It also discusses the resource endowments and investment opportunities in the assembly and the possible effects on the attainment of MDGs and improvement in human development. The report examines how the findings could influence the assembly in Community Action Plans, inform the District Planning Process, and serve as baseline information for the evaluation of the programme and policies for the attainment of the MDGs. It also inputs into UNDP's proposed support for the development of the Long Term National Development Plan and reinforces the capacity of the assembly and community institutions for MDG-based assessment, planning, monitoring and evaluation. The argument is that, the three dimensions of human development, longevity, knowledge and standard of living, as well as the eight MDGs are all dependent on effective resource development and utilization. The question is whether the Nanumba North District Assembly has recorded some progress in all the components of the human development index in recent times.

Research Methods Adopted

Both quantitative and qualitative methods were applied to gather data from different sources for the preparation of this report. Information was obtained from official documents such as various censuses conducted in Ghana, and the district-based Core Welfare Indicators Questionnaire (CWIQ) survey that was conducted in 2003. ISSER, in close collaboration with the Nanumba North District Assembly also

conducted a socio-economic survey (including focus group discussions) in the district in November-December 2008 and consulted various stakeholders to ensure that their interests were addressed and technical omissions minimized. Some aspects of the district's profile were obtained from documents that had been prepared by the Assembly for their programmes, particularly the Medium-Term Metropolitan Development Plan (2006–2009) prepared for the implementation of the MTDPs. In addition, information from the two sets of three District Human Development Reports (DHDRs) already produced and launched, was used extensively to obtain and inform the district-level information on population dynamics, housing characteristics, employment and education.

Interviews were conducted in the district using qualitative and quantitative techniques, principally to gather information on various dimensions of the MDGs and human development indicators and also for the assessment of the resource endowments and investment opportunities component of the report. Two main questionnaires were used for this purpose: the community questionnaires and household questionnaires. The community questionnaire was completed during focal group discussions with leaders of the communities, members of the town committees' resident in the community and opinion leaders. The objective of the questionnaire was to obtain information about the socio-economic development of the communities visited, resources available and utilized and investment opportunities, among others. The household questionnaire is separated into different modules but is answered by the head of household or his/her representative. The questionnaire covered information on the structure of the household, employment, assets of the household, health (maternal and child), education, household consumption patterns

and expenditures, resource endowments and utilization including agriculture, non-farm investments; access to services, political participation, migration (scope and reason) and natural hazards and environmental impacts.

A two-stage sampling procedure was employed with the objective of generating results that are representative of the district. The approach was multi-stage probability sampling, clustered, and stratified with probability proportional to the size of the district. The sampling design was prepared by personnel of Ghana Statistical Service (GSS) who randomly selected well-defined Enumeration Areas (EAs) from the GSS database of the metropolis. The stratification of the frame was based on the size of the locality the enumeration area was chosen from: whether urban, semi-urban or rural. In all, 244 households were chosen from 15 EAs in the district. Focal group discussions were conducted in the district assembly with selected staff and representatives from various departments in the district.

The Main Findings of the Study

The study unearthed myriad of findings. The key ones are follows:

1. The Nantumba North district is a relatively poor district with a computed HPI of 75 per cent compared to 35 per cent for Ghana (see Appendix 1). However, the poverty situation is relatively higher in the rural compared to the urban communities.
2. The economy of the district is agriculture based and the sector is the most significant employer in the district, although there have been a declining trend in the proportion of the population employed by the sector over the past five years. For example, agriculture employed about 65.6 per cent of the economically

active population in 2008 compared to 80.1 per cent in 2003.

3. Production of root and tuber crops such as yam and cassava was fairly stable while the production of major cereals fluctuated over the period 2002–2006. The exception being maize and millet which achieved increasing production trends over the period 2004–2006. Production of leguminous crops such as groundnuts, soybeans and cowpeas were fairly stable from 2000–2003 with some fluctuations occurring over the period 2004–2006.
4. Generally, progress was very slow in the area of health-care although tremendous amount of progress have been realized in the eradication of the guinea worm disease in the district due mainly to improvement of safe water supply. Significant amount of progress have also been made in reducing infant mortality rate due to improvements in immunization programmes. Maternal mortality has been deteriorating over the years (725 per 100,000 live births by the half year count of 2006) due to limited access to health-care services especially within the rural communities of the district. Malaria still occupies the unenviable position of being the number one cause of morbidity and mortality within the district.
5. Considerable amount of progress have been achieved in the provision of potable drinking water in both urban and rural communities of the district. Over 80 per cent of the population now has access to safe drinking water and about 89 per cent of this proportion reaches the source of drinking water within thirty minutes.
6. Progress within the education sector has been mixed. Steady progress has been achieved in the provision of kindergarten and primary schools while the number of senior high schools and teacher training

colleges has consistently remained the same (one each) over a long period of time. Enrolment at the preschool level is low although steady progress has been achieved over the years. Considerable amount of progress has been achieved in enrolment rates at the primary school level but progress at bridging the gender gaps in enrolment has been slow. Gross enrolment rate for males compared to females was 125.5 per cent and 112.2 per cent for males and females in 2007/2006 respectively. Progress in enrolment rates at the junior high school and senior high school levels has been steady with very slow progress being realized in efforts towards bridging the gender gap in enrolments at both levels. Net enrolment rate for boys was 67.7 per cent and 49.0 per cent for girls in the 2006/2007 academic year.

7. The situational analysis of the resource endowment and investment opportunities within the Nanumba North district indicate that the district is endowed with a lot of resources both natural and physical that can be used to promote development and improve upon the poverty situation in the district. However, these resources have not been utilized effectively to generate adequate incomes that will bring about improvements in the average well-being of the population.
8. Generally, investment on household farms is very low. In 2008 for instance, only 14.9 per cent of all farming households invested in improved seedlings on their farms compared to 13.2 per cent in 2007 and over 50 per cent of farming households in 2008 and 2007 made no investment in fertilizer. Progress on household investments in agrochemicals is very slow with 51.3 per cent and 54.7 per cent of households making no investments at all in

agrochemicals for the same period respectively. Non-farm investment is also very low among households with only 17.6 per cent making investments in this area over the past five years in land and housing development, and human resource development.

9. Besides, investment opportunities are unlimited in the district and this is aided by favourable climatic or physical conditions, land availability and abundant raw material base. These conditions are critical for large-scale mechanized crop production, fish farming and livestock rearing.
10. It is instructive that about 59 per cent of households contributed regularly to community development projects in the district. Some of these projects include school building and their maintenance, electricity, water and road maintenance.
11. Some constraining factors to resource utilization include the overdependence on rain-fed agriculture, limited use of improved seeds and fertilizer, limited and inappropriate use of agrochemicals, financial constraints, rudimentary farming practices such as shifting cultivation and continuous cropping leading to environmental degradation, lack of appropriate storage facilities and increasing production costs.
12. Over the past two years, some households were exposed to risks and environmental hazards that threatened livelihood activities, living conditions and investments. Examples of these hazards include windstorms, drought, flooding and bushfires. These hazards contributed to loss of crops, removal of households roofing and destruction of household buildings. However, a lot of households affected by these hazards took no measures or strategies in

coping, reduce or prevent the impact of these occurrences.

The Way Forward

The way forward for utilization of natural resources to meet MDGs in the district lies in the following:

1. Agricultural practice in the district is heavily dependent on simple methods and technology and lacks the requisite skills and inputs to improve yields. In addition, poorly functioning markets for agricultural outputs have often led to post-harvest losses. There is, therefore, the need for the district's infrastructure to be developed to improve the storage, processing and marketing of farm produce. There is also an urgent need for redesigning and innovating farming systems in a more sustainable manner. Creating the right synergy between labour, land and irrigated area will impact positively on the efficient use of farm resources that will bring about improvements in household incomes and living conditions.
2. Over a long period of time, farmers within the district have relied heavily on rain-fed agriculture. This has exposed farmers to risks and uncertainties in the production process, which have affected household incomes and food security. To overcome this challenge, farmers should be encouraged and assisted by the Ministry of Food and Agriculture and the district assembly to go into the production of tree crops and non-traditional exports such as mangoes, pawpaw (papaya) and cashew as this will provide a reliable source of income for farmers. Success of the initiative will require wells or dams for watering to avoid stunting.

3. The role of extension services in typical farming communities is crucial for a viable agricultural production process. There is therefore the need for extension service personnel to be engaged closely with farmers. This calls for reduction in the farmer-extension officer ratio which will enable farmers to effectively utilize their services to improve production processes and post-harvest technology.
4. As much as possible, there should be adequate provision of fertilizers and other chemical supplements, viable seeds and seedlings all at affordable prices to farmers. There is also the need for investment in irrigation facilities, dams and wells which will facilitate farming during the dry season.
5. Individual households should be encouraged and assisted to form groups and associations to engage in the production and processing of non-farm activities such as sheanut extraction and gari processing. With group formation, it will be relatively easy to secure funding for these production activities. This will eventually go a long way in addressing the unemployment problem in the district.
6. It is important to stress that marketing arrangements and improvements in road infrastructure are critical for the sustainability of these activities; hence the need to improve and expand marketing infrastructure in the district.
7. Any programme that aims at diversifying agricultural production activities and household income sources will require the necessary human resources to effectively manage these programmes. In line with this, there is the need for a comprehensive human resource development policy for the district. The District's Medium Term Plan throws some light on education and some training programmes but this is not comprehensive enough. The human development policy should be consistent with the broader development goals of the district and must be responsive to new economic developments as well. All stakeholders must, therefore, be involved in the formulation and implementation of the policy.
8. The District's Medium Term Development Plan has outlined an exhaustive list of targets over the life span of the plan, which aims to improve the living conditions of the people and reduce poverty. Some minimal amount of successes has been achieved. However, the overall success of these targets and programmes depends on the ability of the district assembly to raise enough funds for implementation. The district assembly need to be strengthened in order to develop the infrastructure which is critical to attaining the MDGs and the MTDP goals.

CHAPTER 1

Introduction

Human Development

Human development has often been equated with improvements in people's incomes. Although income constitutes a very important determinant of people's access to food, clothing and other basic necessities of life, the correlation between well-being and income levels is not perfect. An increase in incomes does not necessarily lead to improvements in people's well-being. This is because people, in accessing their living circumstances, do not focus only on the purchasing power of their incomes. There are other factors (family, social capital, peaceful atmosphere etc.), which contributes immensely in determining the well-being of people, especially among the poor and vulnerable. It is in line with this that the UNDP has extended the definition of the concept of human development beyond the narrow view of income to incorporate other dimensions of living or being. The UNDP therefore defines human development as a process of enlarging people's choices. The most critical of these choices are: the option to lead a long and healthy life, to be knowledgeable and to enjoy a decent standard of living.

Over the years, UNDP has been working with governments and other development agencies and stakeholders in promoting human development in Ghana. In line with this initiative, UNDP since 1990 has been providing a quantitative measure of human development through the production

of the National Human Development Reports. The main objective of these reports is to offer guidance and policies required at various levels by different actors to keep development interventions within the country focused, coordinated and effective. This is usually carried out by presenting a systematic account and assessment of social and economic developments in Ghana from a sustainable human development point of view (UNDP 2007).

The quantitative measures of human development focus on the three dimensions identified as critical to enlarging people's choices (Box 1.1). *Longevity* is measured by life expectancy at birth. *Knowledge* is a composite of adult literacy and gross enrolment at the primary, secondary and tertiary levels. *Standard of living* is measured by income per capita in purchasing power parity dollars. The Human Development Index (HDI) is a composite of these three variables. Ghana's HDI is estimated to have risen from 0.515 in 1990 to 0.537 in 1995. The index rose again to 0.560 in 2000 to 0.568 in 2002 before declining to 0.532 in 2004. In 2006, the index rose to 0.540.

These national aggregate figures do not give a clear picture of critical information at the regional and district levels and their variations. There is also inadequate information on whether progress is being made by different groups in the country. To address these lapses, regional and district level indicators of human development are needed to provide information critical for

making decisions on how resources are to be allocated.

Box 1.1: Calculating the Human Development Index

The Human Development Index (HDI) is a summary measure of human development. It measures the average achievements in a country in three basic dimensions of human development:

- A long and healthy life, as measured by life expectancy at birth.
- Knowledge as measured by the adult literacy rate (two-thirds weight) and the combined primary, secondary and tertiary gross enrolment ratio (one-third weight).
- A decent standard of living as measured by GDP per capita (PPP US\$).

Before the HDI is calculated, an index needs to be created for each of the dimensions. To calculate these dimension indices, minimum and maximum values (goalposts) are chosen for each underlying indicator.

Performance in each dimension is expressed as a value between 0 and 1, applying the following general formula:

$$\text{Dimension} = \frac{\text{actual value} - \text{minimum value}}{\text{maximum value} - \text{minimum value}}$$

The HDI is calculated as a simple average of the dimension indices

Goal Posts for calculating the HDI

Indicator	Maximum Value	Minimum Value
Life Expectancy at Birth	85	25
Adult Literacy Rate (%)	100	0
Combined Gross Enrolment Ratio (%)	100	0
Gross Domestic Product per capita (PPP US\$)	40,000	100

In line with the overall government development policy framework and decentralization objectives, UNDP Ghana, has since 2004 been preparing the Human Development Report at the district level. The District Human Development Reports (DHDRs) are mainly geared towards capturing developmental issues at the grassroots level in order to provide a detailed diagnostic analysis on key human development issues; inform planning and resource allocation at the district level; and strengthen the link between national and district development planning frameworks (UNDP 2007). The first round of DHDRs was prepared in 2004 in the districts of Tema, Atwima and Builsa in the Greater Accra, Ashanti and Upper East Regions respectively on the theme “Vulnerability”. The second set

of DHDRs was prepared in 2007 in the districts of Ahanta West, Offinso, and West Gonja in the Western, Ashanti and Northern Regions respectively on the theme “*Vulnerability and the Attainment of the MDGs at the Local Level*”.

The 2009 DHDRs, which constitutes the third set of DHDRs covers the districts of Bole, Nanumba North, Zabzugu/Tatale, Tamale, Karaga and East Mamprusi all in the Northern Region; Bolgatanga, Bawku West and Kasena-Nankana in the Upper East Region; and Wa, Lawra and Sissala East in the Upper West Region. The theme for these reports is Resource Endowment, Investment Opportunities and the Attainment of the MDGs.

What is a Resource?

The definition of resource has often been linked with the “stock” concept. The stock of resources refers to the sum total of the living and non-living endowment of the Earth. A stock does not become a resource until value has been placed on it and it can be exploited with the available technological and managerial skills in the satisfaction of human need (Jones, G. and Hollier, G. 1997). This definition, however, and most other definitions places too much emphasis on economic resources at the expense of the

other dimensions of resource. The word resource is a dynamic term, which often cuts across the subject areas of economics, socio-cultural and political science. Resources generally impact directly or indirectly on the well-being of people.

Bringing all these facets into consideration, the term resource can be defined as “anything or substance located within a particular locality, community or region that can be used to enhance or improve upon the living standards or well-being of people”.

Table 1.1: Resource Classification

Resource Category	Examples
1. Natural Resources	Minerals (gold, diamond, manganese, bauxite, iron ore, salt etc.) Forest (quality of soil and vegetative cover, wildlife) Water (sea, rivers/streams, lakes and ponds) Climatic conditions (adequacy and patterns of rainfall, wind, temperature and humidity)
2. Physical Resources	Transportation & communication infrastructure Irrigation facilities
3. Socio-economic Resources	Finance Health infrastructure (hospitals, clinics, health posts, etc.) Social capital Technology Peace & security Educational infrastructure Regulatory & institutional framework Settlements Religious organizations
4. Political Resources	Governance at various levels Chieftaincy institutions Political stability
5. Human Resources	Adequate supply of quality labour Population

Classification of Resources

Five broad categories of resources can be distinguished (Table 1.1): The first group involves *natural/environmental resources* and examples include minerals (gold, diamond, manganese, bauxite, iron ore, salt etc.); forest resources (quality of soil and vegetative cover, wildlife among others);

water resources (sea, rivers/streams, lakes and ponds); and climatic conditions (adequacy and patterns of rainfall, wind, temperature and humidity). The second category is the *physical resources*. Examples of this group include transportation and communication infrastructure, irrigation facilities, energy infrastructure, among others. The third group are *socio-economic*

resources and examples of these include financial capital, health infrastructure, social capital, state of technological advancement, peace and security, educational infrastructure, settlements, regulatory framework among others. *Political resources* represent the fourth group of resources and examples of this group include governance at various levels, chieftaincy institution and political stability. Finally, there are *human resources*. Examples include the quality of labour supply and population.

Resources, Investment Opportunities and MDGs

The various categories of resources considered above (natural/environmental, physical, socio-economic, political, and human), and their availability and quality is a determining factor in the level of development, and therefore well-being, of a given locality, community or region relative to others. Resources have a direct impact on investment opportunities within localities as they tend to attract investments. An increase

in investment within localities is likely to impact on the living conditions of people through the creation of jobs which in turn impacts on incomes (Figure 1.1).

Additionally, investment can also impact on the quantity and quality of the endowed resources of a locality. For instance, an increase in investments in a locality is likely to impact on local resources such as infrastructure, revenue mobilization and skills acquisition at the local level. It is also important to note that the nature and quality of the investments can impact on the environment in either a positive or negative way. For example, investments in natural resource exploitation in a locality can lead to environmental degradation. All the linkages above ultimately influence the attainment of MDGs. For example, in localities or communities where resource endowments are lacking in terms of quantity and quality, investment opportunities are limited and this adversely affects the living conditions or life chances of people in the locality and ultimately the attainment of MDGs and vice versa.



Figure 1.1: Relationship between Endowed Resources, Investment Opportunities and the Attainment of MDGs.

Objectives and Scope of Assignment

The report aims at achieving the following:

- Provide reliable data and information on the status of human development by investigating trends in the different components of human development.
- Provide detailed analytical situation analysis of the resource endowment and investment opportunities of the districts and how they impinge upon the attainment of the MDGs at the local levels in Ghana.
- Identify the different types of resources available to individuals, communities and group of persons for investment and human development.
- Identify and analyze the different ways that different entities used the resources to enhance their lots.
- Assess the impact of the resource endowment of districts on individuals, communities and the nation at large for investment opportunities.
- Set the stage for or enhance the process of ensuring the preparation of a well conceived community action plan, district development plan and create links with the GPRS and the budgetary process.
- Facilitate information sharing and coordination among stakeholders.
- Assist decision makers in identifying priority issues and formulating strategies for the attainment of the MDGs.
- Enhance national and local dialogue to address the link between resource endowment, investment opportunities and Sustainable Human Development, and contribute to international dialogue on the concept of resource endowment as one of the panacea to the bane of development.

- Serve as a basis for the preparation of Community Action Plan.
- Input and inform the Long-Term National Development Plan.
- Inform the review of District Medium Term Development Plans.
- Build the capacity of the district assemblies to prepare their own subsequent plans; and
- Serve as baseline information for the evaluation of the programme and policies of the SADA.

Data and Methodology

The study relied on both quantitative and qualitative methods and gathered data from three different sources for the preparation of this report. Information was obtained from official documents from the selected districts as well as data from national sources such as the district-based Core Welfare Indicators Questionnaire survey that was conducted in 2003¹. ISSER also conducted a socio-economic survey in the district in December 2008 and consulted various stakeholders to ensure that their interests were addressed and technical omissions minimized.

Secondary Data sources

¹ The CWIQ 2003 survey was conducted before the Nanumba District was split into two in 2004 and as such estimates derived from it may not directly reflect the status of the localities in the new district boundary as they were in 2003. Efforts by the team to sort out enumeration areas covered in the old district and extract information pertaining to the current boundary was not successful.

Because of this lack of direct comparability the analysis of household data in the Nanumba North Report compares the information from the 2008 ISSER household survey only to information from localities in the current district boundary as captured from the census. However, where it becomes difficult to find comparable indicators in the census data, we use the old district data in CWIQ 2003 as proxy for the new district.

Some aspects of the district's profile were obtained from documents that had been prepared by the district assembly for its programme: The Medium-Term District Development Plans prepared for the implementation of the Ghana's MTDPs. In addition, various departments of the district assembly provided information on their activities over the last five years. This gave the team insights into the economic and social conditions in the district and the strategies that have been adopted and implemented regarding issues of human development.

An important source for additional secondary data was the census reports for 2000. Data from the 2000 Population and Housing Census was extensively used to obtain district level information on population dynamics, housing characteristics, employment and education. We also sought assistance from the Ghana Statistical Service to get summary tables from CWIQ 2003.

Primary Data Collection

Interviews conducted in the districts involved qualitative and quantitative techniques, principally to gather information on various dimensions of the MDGs and also for the assessment of the endowment and investment opportunities component of the report. Two main questionnaires were used for this purpose; community (a check list of services and infrastructure available in addition to detail discussion on development issues) and household questionnaires. The community questionnaire was completed during group discussions with traditional leaders of the communities, members of the district assembly resident in the community and opinion leaders. The objective of the questionnaire was to obtain information about the socio-economic development of the communities visited, the land tenure

arrangements, resources and investments within these communities.

The household questionnaire is separated into different modules that are answered by different members of the household and was also done in such a way to address issues concerning different targets of the measurable MDGs at the district level. The questionnaire also covered information on the different types of resources available within the districts, investments and how these variables are impacting on the well-being of these households.

The second was a GPS (Global Positioning Systems) survey and district-level mapping of resources with GIS (Geographic Information Systems) which provided a valuable tool for natural and physical resource management. A complete GPS survey and mapping of these resources within the project district provided information on the spatial distribution of resources, the inventory of these, as well as, baseline data for district-level development planning. The following features were captured:

- Roads, and track network,
- Schools and Health facilities,
- All water sources used by the community,
- Abandoned water sources and pipe systems,
- Communal latrines classified by type,
- Household latrines with closed pit,
- Refuse dump sites,
- Potential tourist attraction sites, including ecotourism sites and
- Community woodlot/Nature reserves.

Sampling Techniques

For comparability with the CWIQ 2003 data a two stage sampling procedure was employed with the objective of generating results that are representative of all the districts. The approach was a multi-stage probability sampling, clustered, and stratified

with probability proportional to the size of the district's population. Sampling was independently done for each district.

We randomly selected well-defined Enumeration Areas (EAs) from the Ghana Statistical Service (GSS) database from each district. The Enumeration Areas were properly described by the cartography section of GSS and had well-defined boundaries, identified on maps, and were relatively of small sizes having cluster of households. These clusters are demarcated along the lines of the proven process used by the GSS in its implementation of Ghana Living Standard Surveys (especially III, IV and V) and Core Welfare Indicators Questionnaire I and II. The selected EAs or communities were listed to know the total number of households that served as sampling frame from which an appropriate sample size was selected systematically for each stratum in a district. This was done to facilitate manageable interviewer workload within each sample area and also reduce the effects of intra-class correlation within a sample area on the variance of the survey estimates.

An enumeration team consisting of the researcher responsible for a district and a number of interviewers chosen and hired from the district listed all households in each of the chosen Enumeration Areas. This was important because some of the enumeration areas had changed in size within the last eight years since the 2000 Population and Housing Census was done and the sampling approach at this stage did not consider their sizes before the selection. We also selected an equal number of households in each enumeration area. The listing information was needed to compute appropriate weights for proper estimation to be done at the analysis stage.

Stratification

We employed the technique of stratification in the sample design to enhance precision and reliability of the estimates. The stratification of the frame for the survey was based on the size of the locality the enumeration area was chosen from i.e. whether the locality is urban, semi-urban or rural. Sampling within each stratum was done independent of others and the approach of picking the number of Enumeration Areas in each stratum was proportional to the population size in each stratum. This was followed by systematic sample selection within each stratum. In all, a minimum of 200 households were chosen from 15 EAs in each district.

In addition to the administration of the household survey in fifteen Enumeration Areas in the district, focal group discussions were conducted in each of these Enumeration Areas. An additional focus group discussion was conducted at the district assembly with selected staff, and representatives from various departments in the district. In all, 244 households were sampled for the Nanumba North District.

Profile of Nanumba North District Assembly

Physical Characteristics

Nanumba North District Assembly was carved out of the former Nanumba District in August 2004 and covers an estimated total landmass of 1,986 square kilometres with Bimbila as the district capital. Geographically, the district is located within Latitude 8.5° N and 9.25° N and Longitude 0.5° E and 0.5° W of the Greenwich Meridian. The district shares boundaries with Yendi District to the north, Nanumba South to the south and east, and East Gonja District to the West and South-West.

Climatic Conditions

Tropical climatic conditions are dominant in the district. Average temperatures range from 16° C during the Harmattan season (December-January) to as high as 40°C during the dry season which spans from March to April. In recent times, the length of the harmattan and the dry seasons has been varying and very unpredictable due to the changing climatic conditions in the district.

Generally, the rainfall pattern is characterized by fluctuations, irregularity and variability in terms of timing of the onset, duration and total amount of fall (Figure 2.1). The onset of the rains is generally around April and rises steadily to peak in August to September. In recent years, however, the onset of the rain in the district usually delays till May and peaks late in October (Nanumba North District Assembly 2006). This could be explained by the general changing climatic

conditions being experienced nationally and at the global level. Aside the fluctuations, irregularity and variability of the rainfall pattern, the district, compared to other districts in the Northern region, has one main relatively stable and heavy raining season which is favourable for single cropping. During this period, streams and rivers overflow their banks and there is a lot of surface run-off. Maximum rainfall figures are usually recorded in September with mean annual rainfall figures ranging between 1,050 mm to 1,500 mm.

The district experiences low humidity usually at the end of the dry season when most plants reach their wilting point. Evaporation and transpiration are very high during this period and the grasses dry out whilst bush fires become rampant thereby causing acute water shortages. The high moisture deficit experienced in the district during this period, however, proves valuable for most farmers as they rely on this climatic condition for drying and storing harvested agricultural products.

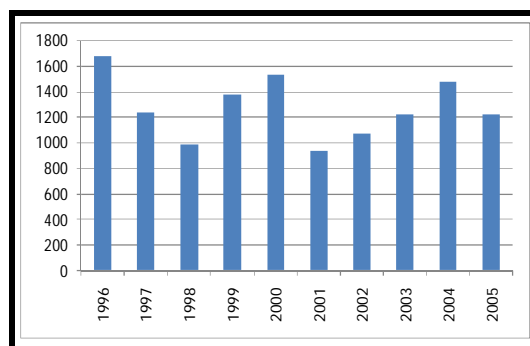


Figure 2.1: Total Amount of Rainfall in Nanumba North, 1996–2005.

Vegetation and Soils

The Guinea Savannah vegetation with tall grass, especially elephant grass, interspersed with draught and fire resistant trees is the main vegetation type found in the district. Some tree species with economic value that can be found include sheanut, *dawadawa* and baobab trees.

Soil samples in the district are characteristically heavy and dark coloured. According to the Soil Research Institute/ Council for Scientific and Industrial Research (SRI/CSIR) classifications, soil types found in the district are the savannah ochrosols, savannah glycols and ground water laterite. The savannah glycols are of alluvial-colluvial origins found along major rivers and drainage courses and are located mid-south through to the north of the district. These soil samples are medium size textured and moderately well-drained soils suitable generally for a wide range of crops such as cereals, roots and tubers and legumes.

The savannah ochrosols, on the other hand, are well-drained soils with surface being loamy sand or sand textured material with good water retention. These soils are very useful for large-scale agriculture and they can be found beyond the River Oti in the eastern part of the district and the southwest through to the Northern part of the district.

The ground water laterites which are shallow sandy or loamy soils composed of rock fragments found on the summit of upland areas can also be found in the district. This soil type is particularly suitable for forestry and conservation programmes.

Demographic Characteristics

According to Burton, Kates and White (1993: 23), the state of the natural environment in which people live “is neither benevolent nor maliciously motivated towards their members: they are neutral. . . . It is people

who transform the environment into resources and hazards”. The people of any society, therefore, constitutes one of the most significant resources of that locality as they may be (un)able to turn the potential resources into available resources for the development or well-being of that locality. The size, distribution, age structure and the actual quality of the people is crucial for the well-being of the locality. This section provides details about the size and distribution of the population, age structure and implications of these for the development of the district.

Table 2.1: Projected Total Population (2000–2008)

Year	Population
2000	88,910
2001	91,311
2002	93,776
2003	96,308
2004	98,908
2005	101,579
2006	104,322
2007	107,138
2008	110,031

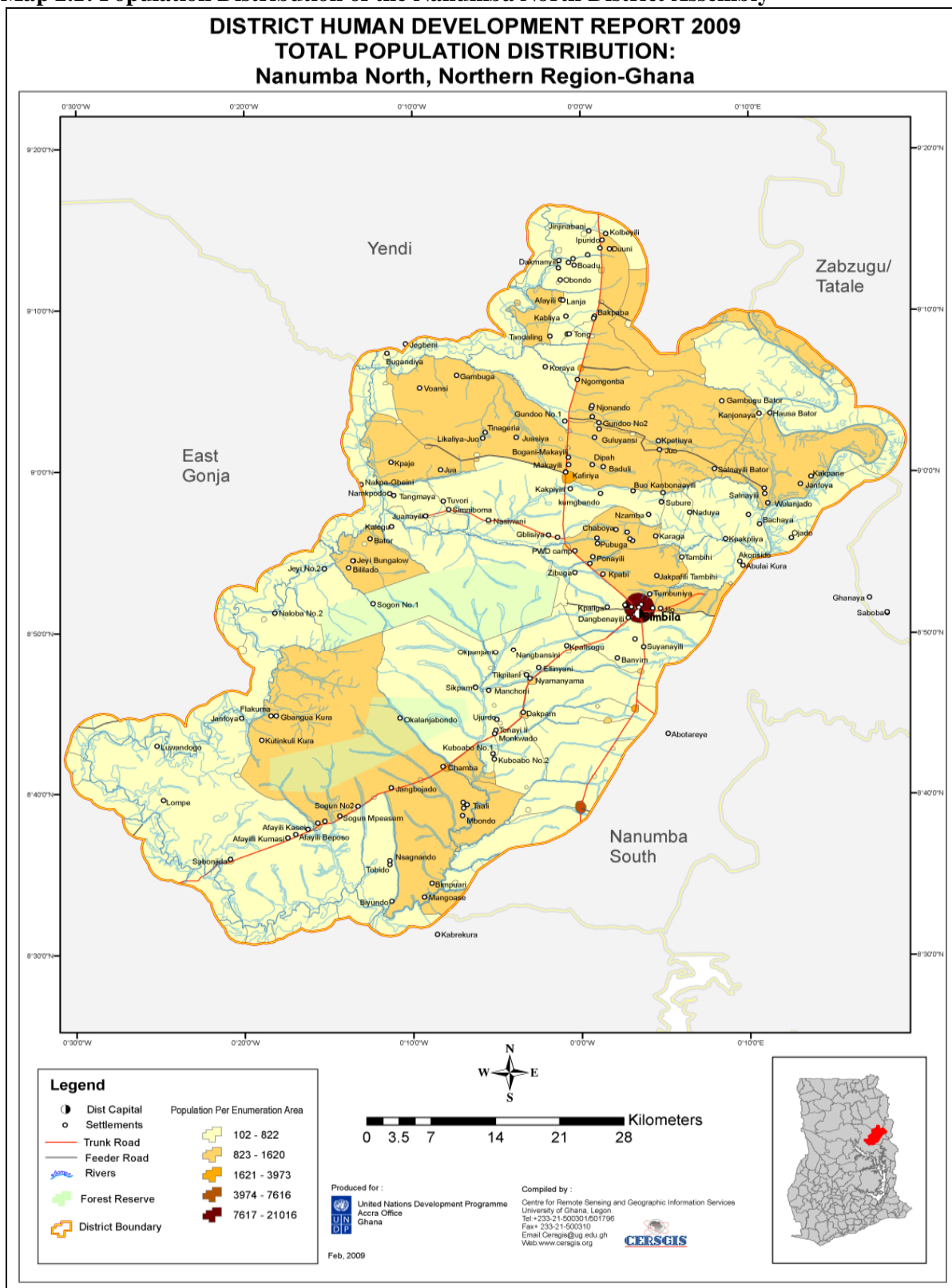
Source: The 2000 population figure is obtained from the 2000 Population and Housing Census. The period from 2001 to 2008 are projected values based on an average growth rate of 2.7 per cent per annum

Population Size and Distribution

Nanumba North district like most of the districts in the Northern region of Ghana is predominantly rural with over 85 per cent of the population living in the rural areas of the district. The total population of the district according to the 2000 Population and Housing Census report, is 88,910 with an annual growth rate of 2.7 per cent compared to a regional growth rate of 2.8 per cent. Using the 2.7 per cent annual growth rate, the population of the district can be projected at about 110,031 in 2008 (Table 2.1). About 86 per cent of the people as of 2000 resided in rural areas compared to a 73.4 per cent for

the Northern region as a whole (see Map 2.1 for details).

Map 2.1: Population Distribution of the Nanumba North District Assembly



The sex ratio of the population according to the 2000 Ghana Population Census is 99.6 males to 100 females which is not too different from the regional figure (99.3 males to 100 females) but higher than the national ratio of 97 males to 100 females.

Age Structure

Generally, the district has a very young population with 63.4 per cent of the population falling below the age of 24 years. This structure presents tremendous amount of opportunities as well as challenges for the district as this young population when given the necessary support will be able to contribute immensely towards the development of the district. On the other hand, the age structure, typical of the age structure in most of the developing countries often places a lot of demands on the national and local government structures to provide services consumed by children and youth. The age structure also shows semblance of the regional pattern with the 0–14 year cohort constituting 46.4 per cent of the total population, while the population aged 65+ comprise 4.5 per cent (see Table 2.2).

Table 2.2: Basic Demographic Indicators in 2000

Population Characteristics (including age group/years)	Nanumba North	Northern Region	Ghana
Population	88,910	1,820,806	18,912,079
Growth Rate (%)	2.7	2.8	2.7
Sex Ratio (Males to Females)	99.6	99.6	97.9
% of the Population age 0–14	47.3	46.2	41.3
% of economically active 15–64	49.1		
% of the Population age 65+	4.5	4.5	5.3

Source: Calculation based on 2000 Population and Housing Census Data.

The economically active population (15–64 years) constitutes 49.1 per cent of the population. This situation indicates a high dependency ratio among the population which has serious implications for the development of the district. The dependency

situation in the region could even be worse considering the high incidence of unemployment and underemployment in the district (see chapter three for more details).

Migration, Urbanization, Ethnic and Religious Composition

Migration is a very important factor affecting poverty reduction efforts and development of societies. In as much as migration has the potential of contributing to development of the district in the long-run, out-migration specifically has often been found to have negative impact on development especially at the places of origin. A typical instance is the loss of productive labour force needed especially within the agricultural sector.

A critical assessment of the age composition of the population, according to the 2000 Ghana Population and Housing Census, indicates some disparities between males and females in some critical cohorts of the population. There are more females (51.0%) than males (49.0%) in the under five cohort in 2000. However, the male population is more than females for the 10–14 year cohorts (53.2% males and 46.8%

females). The difference in population is further widened for the 15–19 year cohorts (54.6% males and 45.4% females). These differences can be attributed to the increasing number of young females who migrate from the district to the southern part of the country to engage

in low-paid jobs such as head portage popularly known as *kayayei* and street hawking. Although some of these young females remit monies to the district, the monies remitted are mostly small as their jobs are mostly unreliable. Because most of these females of school-going age migrate to

the south, their chances of furthering their education are restricted. This often ends up retarding their personal development as well as the development of the district. This is because the young who would have been able to engage in productive activities end up migrating and the returns on migrations in terms of remittances are also quite low. According to the 2008 ISSER Household Survey conducted for the district as part of this study, about 73 per cent of migrants do not remit monies to the district at all.

The district does not only suffer from out-migration to southern Ghana, but also receives migrants mostly from other parts of Northern Ghana who come in to settle in the district for various reasons. About 23.5 per cent of respondents interviewed for the 2008 ISSER Survey were not born in the district. The most important reason for migrating to settle in the district is farming or work related purposes (60.7%). This is not surprising considering the fertile nature of the soil in the district for agricultural purposes, which attracts migrants from nearby districts as well as those from the Upper East and Upper West Regions. Other important factors attracting people into the district include people migrating to join their families (17.9%) as well as people who have migrated to escape conflicts from their places of origin (5.4%).

Table 2.3: Ethnic Composition of the Population

Ethnic Group	Urban	Semi-Urban	Rural	Total
Akan	6.1	0.0	0.0	1.3
Krobo	2.0	0.0	0.0	0.4
Guan/Gonja	2.0	0.0	0.0	0.4
Dagomba	8.2	0.0	11.3	9.8
Bemoba	2.0	0.0	0.0	0.4
Konkomba	0.0	100.0	51.3	43.3
Nanumba	69.4	0.0	36.3	41.1
Basare	2.0	0.0	0.6	1.0
Hausa	6.1	0.0	0.0	1.3
Kotokoli	0.0	0.0	0.6	0.4
Other	2.1	0.0	0.0	0.4

Source: ISSER Household Survey 2008.

The ethnic composition of the district is diverse with no particular ethnic group

clearly dominating the population. Majority of the respondents to the 2008 ISSER Household Survey indicates that the Konkomba are in the majority and constitute about 43.3 per cent of the population. This is closely followed by Nanumba who constitute 41.1 per cent, Dagomba 9.8 per cent, with the Akan and Hausa constituting 1.3 per cent each (Table 2.3). Although the Konkomba are in the majority, they are mostly located in the rural communities of the district (51.3%) whilst majority of the Nanumba are located in the urban communities of the district (69.4%). This trend can be explained by the main economic activities of the Konkomba which is mostly farming. It is, therefore, not surprising that they tend to reside in the rural communities of the district where land is readily available for farming purposes.

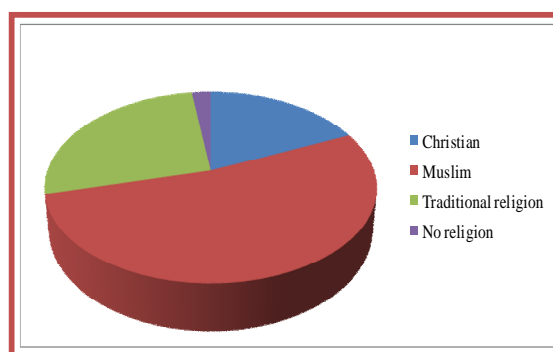


Figure 2.2: Religious Background of Households, 2008.
Source: ISSER Household Survey, 2008.

The religious background of the district is diverse although majority of the inhabitants are Muslims (51.2%). This is followed by traditional religion (26.2%), Christian religion (20.5%) and 2.0 per cent composing of people with no religious affiliation at all (Figure 2.2). Within the urban communities, Islamic religion is the most dominant (91.8%) whilst Christianity dominates in the semi-urban communities of the district (53%) as shown in Table 2.4.

Table 2.4: Religious Affiliation (%)

Religion Type	Urban	Semi-Urban	Rural	Total
Christian	8.2	53.0	18.1	18.3
Muslim	91.8	0.0	45.6	52.7
Traditional	0.0	33.3	34.4	26.8
No religion	0.0	13.3	1.9	2.2

Source: ISSER Household Survey, 2008.

Housing Conditions and Socio-Economic Characteristics

Housing Conditions and Settlement

Average household size of the district, according to the 2000 Population and Housing Census, is 7.5. Among the dominant ethnic groups, Nanumba households are fairly larger compared to Konkomba households. Table 2.5 gives information on average household size of selected communities and the predominant ethnic group within these communities.

Table 2.5 : Household Characteristics

Community	Household Size	Predominant Ethnic Group
Pusuga	9.2	Typical Nanumba community
Sabonjida	7.3	Typical Konkomba community
Chamba	7.6	Mostly Konkomba

Source: 2000 Population and Housing Census-Special Report.

Regarding settlement, the district is confronted with the problem of unplanned development especially within Bimbila and other major settlements. While effort is needed to curb this disturbing trend mostly caused by the increasing rate of population growth within these settlements, it will be advisable if the Town and Country Planning Department in Bimbila is equipped with permanent staff that will be able to address these challenges. Currently, the department has an office but without staff to man it.

Use of Energy

Information from the 2008 ISSER Survey reveals that, 77.0 per cent of households rely on kerosene lamps as their main source of energy for lighting and electricity usage for lighting constitutes 22.1 per cent of all households (Figure 2.3 and Table 2.6). This represents a decline when compared with the level recorded in the 2003 CWIQ where about 31 per cent relied on electricity for lighting. Admitted for the CWIQ data, the proportion captured was for both Nanumba North and South and so such comparison needs to be done in the right context. However it is also worth noting that despite the 2007 Annual Progress Report of GPRS II indicating an increasing trend in electricity coverage nationally, electricity coverage in the Nanumba North district only extends to Bimbila and five other communities. Majority of the district remains unconnected to the national grid and this explains why usage of kerosene lamps for lighting purposes is quite high among residents.

The current poor access to electricity can impact negatively on investments, particularly investments in the agro-processing sub-sector. Other sectors which are likely to suffer from poor access to electricity coverage in the district include education, literacy programmes and businesses generally. All these are likely to have negative repercussions on investment opportunities and efforts at harnessing the resource base of the district. The use of gas for cooking is also virtually non-existent and this can be explained by the fact that there is virtually no gas service station in the district.

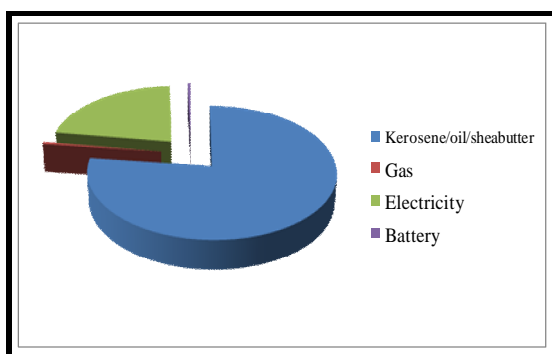


Figure 2.3: Energy Source for Lighting, 2008.
Source: ISSER Household Survey, 2008.

Fuelwood remains the main energy source for household cooking (Figure 2.4). About 88 per cent of households in the 2008 ISSER Survey alluded to using fuelwood as their main source of energy for household cooking while about 12 per cent indicated using charcoal (Table 2.7). Compared to the 2003 CWIQ (caveats notwithstanding), this suggests an increasing use of charcoal as against fuelwood — i.e. there seems to be a shift from the use of fuelwood to charcoal. Generally, the continued dependence on these two major energy sources has adverse implications for the environment. With increased deforestation as many trees are felled, soils are eroded and made infertile resulting in low crop yields.

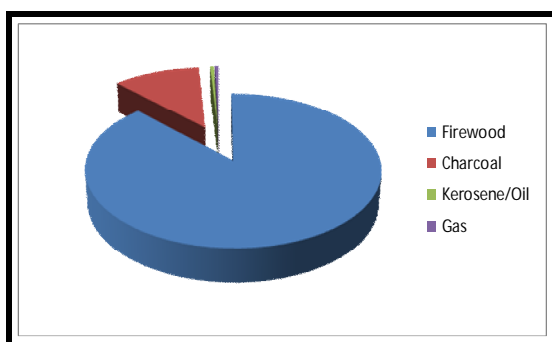


Figure 2.4: Source of Energy for Cooking, 2008.
Source: ISSER Household Survey, 2008.

Table 2.6: Energy Source for Lighting

Energy Source	Urban	Semi-Urban	Rural	Total
Kerosene/oil/sheabutter	34.7	93.3	88.6	77.0
Gas	0.0	6.7	0.0	0.5
Electricity	65.3	0.0	10.8	22.1
Battery	0.0	0.0	0.6	0.5

Source: ISSER Household Survey, 2008.

Table 2.7: Energy Source for Cooking (%)

Energy Source	Urban	Semi-Urban	Rural	Total
Firewood	58.3	100	95.6	87.8
Charcoal	39.6	0.0	3.8	11.3
Kerosene/Oil	0.0	0.0	0.6	0.5
Gas	2.1	0.0	0.0	0.5

Source: ISSER Household Survey, 2008.

Sanitation Facilities

Poor sanitation especially in the urban areas presents a health challenge in the district. This situation is mainly as a result of inadequate sanitary facilities and poor attitudes to sanitation issues. According to the District's Medium-Term Development Plan (2006–2009), 39.9 per cent of the population has safe excreta disposal system while only 5.1 per cent of the population has access to septic tank latrine facilities. The situation is, however, worsened as revealed by 2008 ISSER Household Survey which indicates 80.3 per cent of households without toilet facilities, but the situation is more severe in the rural communities (89.9%) compared to the urban areas (42.9%). As a result of the inadequate toilet facilities (see Table 2.8 and Figure 2.5), most households result to defecating into bushes around compounds and this raises serious health and environmental concerns. On the whole, 17.0 per cent of households have access to KVIP facilities but the use of these facilities is higher in the urban communities (46.9%) compared to rural communities (9.4%).

Table 2.8: Household Toilet Facilities

Toilet Facility	Urban	Semi-Urban	Rural	Total
None/Bush	42.9	100	89.9	80.3
Pan/Bucket	2.0	0.0	0.0	0.4
Covered pit latrine	4.1	0.0	0.0	0.9
Uncovered pit latrine	2.0	0.0	0.6	0.9
KVIP	46.9	0.0	9.4	17.0
Other	2.0	0.0	0.0	0.4

Source: ISSER Household Survey, 2008.

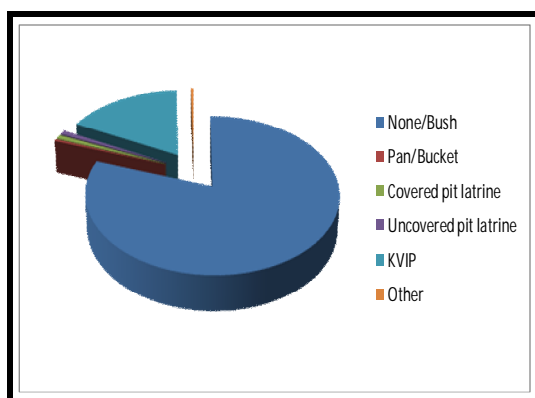


Figure 2.5: Toilet Facilities for Households.

Source: ISSER Household Survey, 2008.

Table 2.9: Solid Waste Disposal

Refuse Disposal Type	Urban	Semi-Urban	Rural	Total
Collected by refuse agency	10.2	0.0	0.0	2.3
Burned by household	12.2	6.7	44.9	35.1
Public provided dump	51.0	53.3	26.6	33.8
Dumped elsewhere	22.4	40.0	27.1	27.0
Buried by household	4.1	0.0	0.0	0.9
Other	0.0	0.0	1.3	0.9

Source: ISSER Household Survey, 2008.

Table 2.10: Liquid Waste Disposal

Source of Disposal	Urban	Semi-Urban	Rural	Total
Through the sewage system	10.2	0.0	0.0	2.3
Thrown onto the street/outside	46.9	60.0	76.1	68.5
Thrown in the gutter	12.2	6.7	5.8	7.3
Thrown onto the compound	26.5	33.3	14.2	18.3
Other	4.1	0.0	3.9	3.7

Source: ISSER Household Survey, 2008.

Most households do not practice safe waste disposal practices (Figures 2.6 and 2.7). Specifically regarding solid waste, 35.1 per cent of households burn their waste while 27.0 per cent dump refuse elsewhere in the surroundings as can be seen in Table 2.9 (ISSER 2008). About 66 per cent of households throw their liquid waste onto the street or outside their compounds while 18.3 per cent dispose off their liquid waste onto their compounds (Table 2.10). The unsafe waste disposal practices in the communities result in widespread pollution of water bodies especially during the rainy season and, thereby, exposing the population to several diseases. Aside the unsafe waste disposal practices, 33.8 per cent of households dispose off their solid waste at publicly provided dump site while 2.3 per cent have

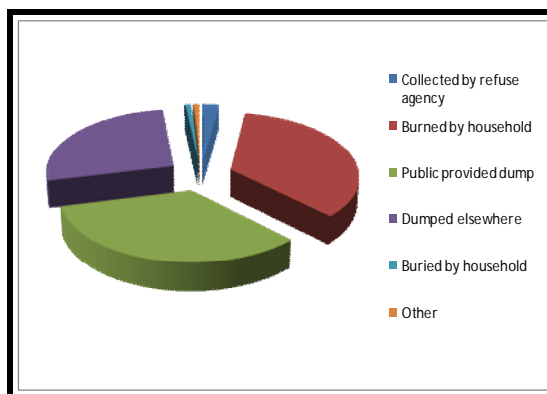
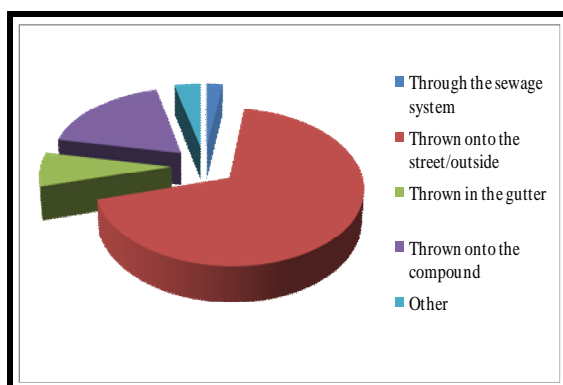


Figure 2.6: Solid Waste Disposal, 2008.

Source: ISSER Household Survey, 2008.

their refuse collected from their homes by a refuse collection agency.



Source of Drinking Water

According to the 2003 CWIQ, about 35 per cent of the population relies on boreholes as their main source of water for drinking purposes. However, information from the ISSER 2008 Household Survey indicates that this proportion has increased significantly to over 80 per cent as can be seen on Table 2.11. About 13 per cent of the population relies on pipe-borne water supply. However, pipe-borne water supply only extends to Bimbila, the district capital and supply is not only inadequate, but also irregular. This is due to limited investments in the pipe-borne water supply system as the population of the town increases. Other drinking water supply sources include dams, streams, dug-out wells and traditional wells (see Figure 2.8 for details).

Table 2.11: Main Source of Drinking Water

Refuse Disposal Type	Urban	Semi-Urban	Rural	Total
Inside taps in dwelling unit or compound	12.2	0.0	0.0	2.7
Public outdoor tap	42.9	0.0	0.6	10.0
Borehole	42.9	93.3	91.7	80.9
Protected/covered well	0.0	6.7	0.0	0.5
Purchased treated water (tanker, bucket, sachet)	2.0	0.0	0.0	0.5
River/pond/lake	0.0	0.0	7.7	5.5

Source: ISSER Household Survey, 2008.

Formal Financial Services

There are two main formal financial institutions in the district: Ghana Commercial Bank and Bimbila Cooperative Credit Union. Interestingly, the two financial institutions are located in Bimbila, the district capital. Access to financial services especially for people located in the rural communities and other communities a bit distant from Bimbila is difficult. This is because people need to travel over long distances before accessing financial services from the financial institutions. The situation is worsened by the unmotorable nature of the road especially during the rainy season.

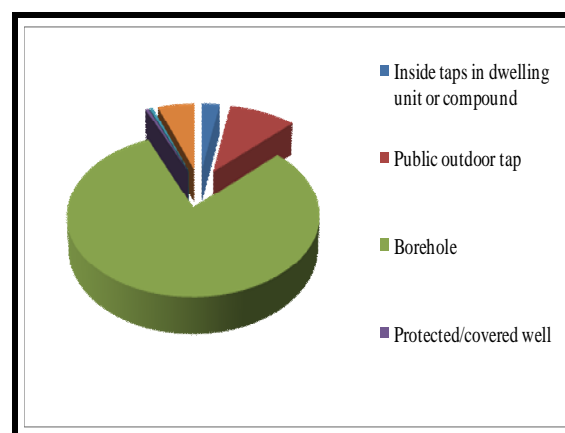


Figure 2.8: Drinking Water Sources, 2008.

Source: ISSER Household Survey, 2008.

Security and Legal Services

The total number of police personnel in the district to ensure the maintenance of law and order as of December 2008 was 35. With a projected population of 110,031 (using the 2000 PHC figure of 88,910 and an average growth rate of 2.7%) gives a police/citizen ratio of 1:3,144. Added to the limited personnel is the limited number of police posts in the district. According to the ISSER 2008 survey, majority of the population

(56.5%) takes over sixty minutes to reach the nearest police station with 15 per cent reaching between 30–44 minutes and 14.5 per cent reaching within 15–29 minutes. Only 7.3 per cent reach the nearest police station in less than 15 minutes. In terms of means of travel, 44 per cent of respondents travel to the nearest police station by vehicular means while 27.2, 15.2, and 13.6 per cent travel by foot, bicycles, and motor cycles respectively.

Regarding access to legal services, the district has a resident magistrate in charge of justice delivery. However, according to the ISSER 2008 Survey, over 95 per cent of the population has never used the legal service in the district. Possible reasons for this can be attributed to the district's poverty situation which makes it difficult for residents to be able to afford the cost of legal services. Other likely reasons are the slow processes involved in justice delivery through the legal system as well as people's lack of knowledge about legal processes and proceedings. Despite these reasons, the few people who have actually had the opportunity of using the legal service expressed satisfaction with the service received.

Economic Activity and Poverty

Introduction

The first Millennium Development Goal is to eradicate poverty and hunger by reducing the proportion of people whose income is less than one dollar a day by one-half and also to reduce by one-half the proportion of people who suffer from hunger. The time frame is between 1990 and 2015. Lack of information at the district makes direct assessment of the district's progress towards this goal quite difficult. The report gauges progress towards this goal by generally analyzing changes in the structure of economic activities and changes in other indirect indicators of poverty using information mainly from 2003 CWIQ and the 2008 ISSER socio-economic survey conducted in the district for this report.

Employment

Ghana's MTDP emphasizes government objective to promoting gainful employment in the country. As a result, the plans seek to "pursue an employment-centred cross-sectoral development strategy...." Increased employment generation represents one of the key policy measures for achieving private sector competitiveness under MTDP. The focus of Nanumba North district on employment as a way of addressing poverty is expressed in the 2006–2009 development plan through a number of objectives: addressing access to credit in the district, improving yield to food crops, promotion of irrigation agriculture, development of

marketing channels, tourism promotion, promotion of small-scale businesses, reduction in post-harvest losses and improving road and communication infrastructure in the district. Employment generation is, therefore, seen as one of the key pillars in the strategy to reduce poverty.

Nanumba North is predominantly a rural district and its economy depends heavily on natural resources. According to the Medium-Term Development Plan (2006), agriculture, including fishing employs about 85 per cent of the economically active population. However, the ISSER 2008 Survey revealed a relatively smaller proportion employed by the agricultural sector (about 65.5%). (See Table 3.1 for details). The wholesale and retail sector employs about 22.4 per cent of the economically active population. Community social services sector employs 4.4 per cent with the finance and insurance services employing about 4.6 per cent. Considering the importance of agriculture to the district economy, one would have thought that processing of some of the agricultural products would be an important activity. However, the importance of manufacturing including agro-processing is very minimal.

The manufacturing sector as a whole employs about 0.2 per cent of the economically active population. The limited importance of manufacturing as an economic activity can be attributed to lack of investments in the manufacturing sector of the district. With severe infrastructural challenges, such as bad road networks, limited electricity coverage and human

resource constraints, it is difficult for investors to invest especially in the agro-processing notwithstanding the tremendous amount of raw materials in the district.

The most important economic activity within the urban communities is wholesale and retail trading, which is dominated mostly by retail trading and employs about 33.9 per cent. The importance of the wholesale and retail trading activities in the urban communities of the district is reflective of the general 'kiosk' economy which is taking a strong hold of economic activities in most urban areas of the country. Aside the wholesale and retail trading activities, agriculture employs about 27.6 per cent of the economically active population in the urban areas with community social services employing about 13.4 per cent of the economically active population within the urban communities of the district. Within the rural communities, agriculture employs about 75.2 per cent of the economically active population with trading activities employing 17.5 per cent.

Table 3.1: Distribution of the Population by Industry of Economic Activities (%)

Economic Activity	2008	2003
Agriculture/Fishing	65.5	80.1
Construction	1.2	0.3
Transport/Storage	1.0	1.4
Communication		
Finance/Insurance Service	4.6	2.5
Utilities	1.0	0.0
Wholesale/Retail Trading	22.4	9.9
Community Social Service	4.4	1.8

Source: ISSER Household Survey, 2008 and CWIQ, 2003.

The private sector is the most significant employer in the district. Within this sector, private informal sector activities employ about 86.4 per cent compared to 95.3 per cent in 2003 for the former Nanumba

District while private formal sector activities employ 4.4 per cent of the economically active population. (For details refer to Table 3.2). The high proportion of people employed by the private informal sector is indicative of the importance of agriculture as an economic activity in the district although this has declined from 80.1 per cent in 2003 for the former Nanumba District to about 65.5 per cent in 2008. The loss of labour force in the agricultural sector seems to have been absorbed by the wholesale and retail sector where the proportion of the economically active population more than doubled from 9.9 per cent in 2003 for the former Nanumba District to about 22.4 per cent in 2008.

Table 3.2: Main Employment by Sector (%)

Employment Sector	Urban	Semi-Urban	Rural	2008	2003
Public	28.1	4.0	3.4	8.9	2.6
Private formal	0.8	8.0	3.7	4.4	0.5
Private Informal	70.2	88.0	92.9	86.4	95.3
NGO's/International Organizations	0.8	0.0	0.0	0.2	0.1

Source: ISSER Household Survey, 2008 & CWIQ, 2003.

The decline in the number of people employed by the agricultural sector can also be attributed to the difficult weather conditions in the district especially in recent times. Agriculture in the district, as in other parts of the country, is rain-fed and in recent times the weather has become very unreliable and thereby exposing farmers to different kinds of risks. Majority of the respondents to the 2008 ISSER Household Survey (54.9%) alluded to the erratic weather conditions being the most difficult challenge confronting their activities. Other challenges confronting the economically active in their main activities include finance (40.0%) and difficulty in accessing land (3.2%). (See Figure 3.1 for details).

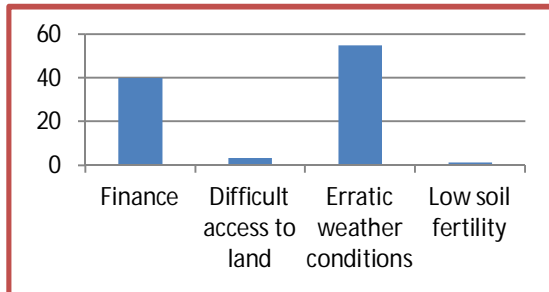


Figure 3.1: Problems Confronting the Economically Active in their Main Economic Activities.
Source: ISSER Household Survey, 2008.

Unemployment, Under-employment and Child Labour

According to GSS (2005), the unemployed includes persons 15 years and above who did not work in the last seven days preceding a survey and looked for work in the same period. On the other hand, the underemployed is made up of persons 15 years and above who sought to increase their earnings and worked for 35 hours or less in the last seven days preceding the survey. The unemployed, according to the 2008 ISSER Household Survey constitutes about 3.5 per cent of the population compared to 0.1 per cent in 2003 for the former Nanumba District. The problem of seasonal unemployment is high in the district (28.4% in 2008). This is because agriculture employs majority of the population (65.8%) and the activity is rain-fed and rainfall in the district is seasonal. The use of irrigation facilities for agricultural production is also very limited. As a result, during the dry season, most of the economically active who engage in agriculture become unemployed.

The 2008 ISSER Household Survey revealed about 55.1 per cent of the economically active population to be underemployed. This represents a significant increment compared to 14.8 per cent in 2003 for the former Nanumba District. As can be seen in Table 3.3, about 61.4 per cent of the underemployed are engaged in the agricultural sector compared to 80.0 per cent in 2003 for the former Nanumba District. The

wholesale and retail sector employs about 33.7 per cent in 2008 compared to 10.0 per cent in 2003 for the former Nanumba District.

Table 3.3: The Underemployed and Industry of Activity

Industry of Activity	2008	2003
Agriculture	61.4	80.0
Construction	2.3	0.0
Transport	1.5	0.6
Utilities	1.2	0.0
Wholesale/Retail	33.7	10.0

Source: ISSER Survey, 2008 and CWIQ, 2003.

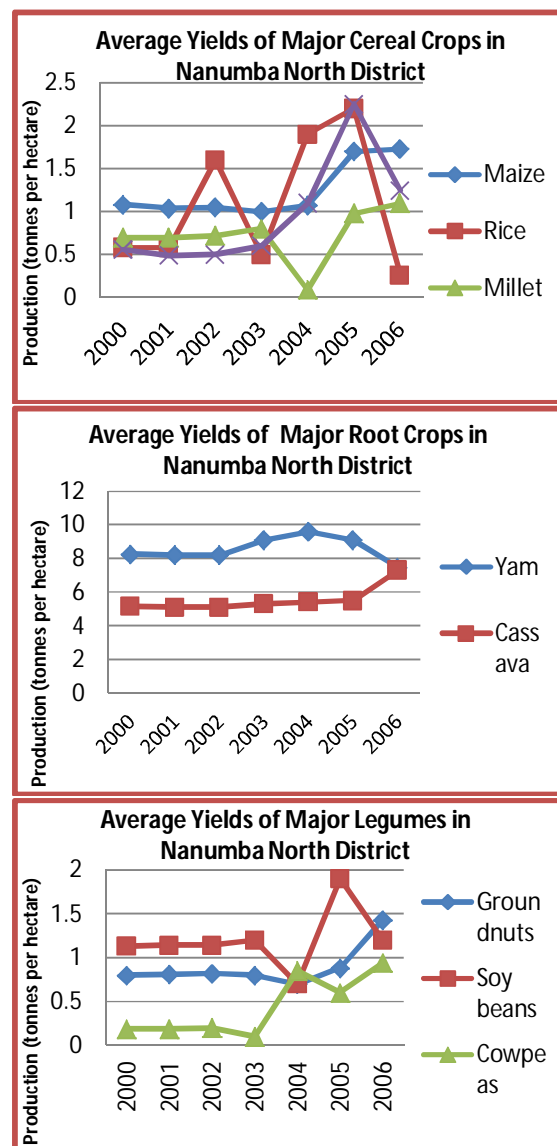


Figure 3.2: Production of Major Crops in Nanumba North District.

The incidence of child labour is very high in the district. Out of the total population engaged in various work related activities, about 85.6 per cent are children (ISSER 2008). Most of these children are engaged within the agricultural sector (75.4%). Other sectors which engage children in economic activities include the wholesale and retail sector 22.5 per cent, construction 1.2 per cent, transport 0.7 per cent, and fishing 0.2 per cent.

Agricultural Production

Most of the economically active population employed by the agricultural sector is engaged in the cultivation of food crops such as yams, cassava, sorghum, millet, rice, maize groundnuts, soybeans and cowpeas. Live-stock rearing such as sheep, goats, cattle and local poultry is a very important economic activity in most households.

The production of most food crops has been fluctuating over the years. Maize cultivation, although relatively steady, has fluctuated over the years (Figure 3.2). Average yield for maize under rain-fed conditions was 1.08 tonnes per hectare but this reduced to 1.0 in 2003 before increasing to 1.73 in 2006. The average yields for sorghum remained steady over the period 2000 to 2003. However, from 2003, average yields for the crop increased substantially from 0.6 tonnes per hectare to 1.25 in 2006. The production of yam, which constitutes one of the most important root and tuber crops in the district has been relatively steady over the period 2000 to 2006 although average yields has fluctuated over the period (Table 3.4). Average yield for yam in 2000 was 8.26 tonnes per hectare, but this increased to 9.6 in 2004 before declining to 7.47 in 2006. Yield from rice cultivation has been fluctuating, but in recent times, there has been a substantial decline. Average

yield for rice in 2000 was 0.58 tonnes per hectare, but this increased significantly to 1.90 in 2004 before declining significantly to 0.26 in 2006. Yield for millet experienced a steady increase over the years. Average yield for the crop increased from 0.7 tonnes per hectare in 2001 to 0.8 in 2003 and then increased to 1.10 in 2006. Groundnut cultivation in the district has experienced steady increments in yield in recent times. Average yields for the crop increased from 0.7 tonnes per hectare in 2004 to 0.88 in 2005 and then to 1.43 in 2006.

The fluctuation in yields from the

Table 3.4: Average Yield of Selected Crops under Rain-fed Conditions

Crop	2000	2001	2002	2003	2004	2005	2006
Maize	1.08	1.04	1.05	1.0	1.07	1.7	1.73
Rice	0.58	0.58	1.6	0.5	1.90	2.2	0.26
Millet	0.7	0.7	0.72	0.8	0.09	0.98	1.10
Sorghum	0.56	0.49	0.5	0.6	1.10	2.25	1.25
Yam	8.26	8.19	8.2	9.1	9.6	9.1	7.47
Cassava	5.16	5.1	5.1	5.3	5.4	5.5	7.3
Groundnuts	0.8	0.81	0.82	0.8	0.7	0.88	1.43
Soy beans	1.13	1.14	1.14	1.2	0.7	1.9	1.2
Cowpeas	0.19	0.19	0.2	0.1	0.85	0.6	0.94

Source: Ministry of Agriculture, Nanumba North Directorate.

cultivation of these crops can be explained by the nature of the agricultural practice in the district and the environmental conditions. Agricultural production in the district, like many parts of Ghana, is rain-fed and environmental dependent, which exposes farming activities to various risks (see Chapter 8). During years when the rainfall is favourable, yields are likely to increase. However, heavy rainfall has the likelihood of contributing to flood which washes away crops and consequently results in low crop yields. Other factors which have affected crop yields over the years are drought, wind, and bushfires.

Education and Literacy

Introduction

Two out of the eight MDGs are education-specific. The focus of the second MDG is the attainment of universal primary education (*see* Box 4.1). The third goal is the promotion of gender equality and the empowerment of women. The target under this goal is the elimination of gender disparity in primary and secondary education by 2005, and in all levels no later than 2015. Two of the indicators to monitor progress made towards attaining the third MDG are education-specific and thus highlight the importance of education as an important means of empowering women.

Box 4.1: The MDGs and Human Development Indicators for Education	
Millennium Development Goals	
Goal 2:	Achieve Universal Primary Education Net enrolment in primary education Proportion of pupils starting Grade 1 who reach grade 5
Goal 3:	Promote Gender Equality and Empower women Ratio of girls to boys in primary, secondary tertiary education Ratio of literate women to men, 15–24 year olds
Human Development	
Knowledge:	Adult Literacy Rate Gross Primary Enrolment Rate Gross Secondary Enrolment Rate Gross Tertiary Enrolment

There is an overlap between the MDG indicators and the knowledge indicators of the human development index (Box 4.1). The

knowledge component of the index is made up of adult literacy and the gross primary, secondary and tertiary enrolment rates.

The district is confronted with numerous challenges on both the supply and demand side of the education sector. Some of these constraints according to the medium-term plan, 2006–2009 include the following: limited geographical access to education, inadequate qualified teachers, inadequate teaching and learning materials at various levels, inefficient administration and management especially at the basic levels of the educational system. The objectives of the Education Directorate under the District's Medium Term Plan, 2006-2009, fall in line with the broad objectives of the Ministry of Education. These objectives include the following:

- Improve access and participation at all educational levels in the district;
- Enhance quality of teaching and learning;
- Improve efficiency and effectiveness of management performance; and
- Strengthen capacity at the district level to promote decentralization.

Both the MDG indicators and the knowledge indicators of the HDI are output and/or outcome indicators. The process of attaining these outputs or outcomes is fundamental to progress in achieving the MDGs or improving upon the HDI. The next section provides information on some of the inputs that are important in influencing progress towards achieving the MDGs and in

improving upon the human development of the population.

Educational Infrastructure

Number of Schools

The district is endowed with a lot of educational institutions. However, some of these facilities do not have standard structures to ensure effective teaching and learning. The total number of educational institutions at all the educational levels increased from 106 in 2005 to 165 in 2008. A critical look at these increments indicates increment occurring mainly at the lower end of the educational ladder. The most significant increment occurred at the kindergarten level, where the number of institutions increased from 17 in 2005 to 55 in 2008. The number of primary schools also increased from 75 in 2005 to 91 in 2008 while the number of junior high schools increased from 12 in 2005 to 17 in 2008 (Table 4.1).

Table 4.1: Number of Educational Institutions

Type of School	2005	2006	2007	2008
KG	17	18	46	55
Primary	75	82	84	91
JHS	12	12	15	17
SHS	1	1	1	1
TTC	1	1	1	1
Total	106	114	147	165

Source: Ghana Education Service, Nanumba North District Directorate

At the higher echelons of the educational ladder however, the number of educational institutions has remained the same without any increment over the years. As of 2008, there is one senior high school and one teacher training college in the district. The number of primary schools far outnumbers the junior high schools. This suggests that an upsurge in the number of

children that transit from primary to junior high school is more than likely to result in over-crowding in classrooms which has the potential of affecting teaching quality. Indeed this gap in the numbers of primary and junior high schools can discourage children proceeding to post-primary education since most children will have to travel longer distances to reach junior high schools. Another serious problem with respect to educational infrastructure is the number of junior high schools (17) compared to the single senior high school in the district. As the number of junior high school pupils who are able to transit to the senior high school increases, it is likely to put extreme pressure on the only senior high school in the district. It is therefore common to see a lot of the youth who have graduated from the junior high school unable to further their education at the senior high school.



Picture 4.1: Administration Block of Bimbila (Training College) College of Education.

Access to Education

According to the 2008 ISSER Household Survey, it takes 82.6 per cent of children under 30 minutes to reach the nearest primary school with majority of these children (84.4%) travelling by foot (Table 4.2). It is

noted that 13 per cent of the children travel between 30–44 minutes to reach the nearest primary school.

Table 4.2: Households and Time Taken to Reach the Nearest Primary School (%)

Time to School	Urban	Semi-Urban	Rural	Total
0–14 minutes	31.1	71.4	62.2	56.0
15–29 minutes	37.8	7.1	25.0	26.6
30–44 minutes	24.4	14.3	9.5	13.0
45–59 minutes	6.7	7.1	1.4	2.9
60 and above	0.0	0.0	2.0	1.4

Source: ISSER Household Survey, 2008.

Access to education at the JHS level is relatively difficult compared to primary level education. On the whole, 46.9 per cent of pupils travel to the nearest JHS in under 30 minutes with 18.9 per cent travelling between 30–44 minutes (see Table 4.3 for details).

Table 4.3: Households and Time Taken to Reach the Nearest JHS (%)

Time to JHS	Urban	Semi-Urban	Rural	Total
0–14 minutes	29.5	76.9	22.0	28.0
15–29 minutes	31.8	7.7	15.3	18.9
30–44 minutes	31.8	7.7	15.3	18.9
45–59 minutes	6.8	7.7	7.6	7.4
60 and above	0.0	0.0	39.8	26.9

Source: ISSER Household Survey, 2008.

A sizable proportion of 26.9 per cent travel to the nearest JHS in more than 60 minutes while 7.4 per cent travel between 45–59 minutes. Majority of these pupils (58.5%) travel on foot and 22.6 per cent also travel by bicycles while 11.9 per cent travel by vehicles. What this implies is that, for pupils at the JHS level who travel to school by vehicles, if the household cannot afford the cost of travelling by vehicle, the children cannot go to school. Access to SHS is relatively more difficult for most households in the district compared to primary and the JHS levels. It takes more than 60 minutes for 48.9 per cent of households to travel to the nearest SHS in the district whilst 15.8 per cent travel between 45–59 minutes and 18.7 per cent travel in 30–44 minutes (Table 4.4).

Only 16.6 per cent of students travel to the nearest SHS in less than 30 minutes. The means of travelling to SHS by households is diverse. Overall, 36.2 per cent travel on foot and 34.2 per cent travel by vehicles, 12.1 per cent travel by motorcycle and 17.7 per cent also travel by bicycles. The difficulty in reaching the nearest SHS by households in the district is as a result of the fact that there is only one SHS in the district, which is located in Bimbila, the district capital. The location of the educational facility, therefore, plays a significant role in determining access to the facility.

Table 4.4: Households and Time Taken to Reach the Nearest SHS (%)

Time to SHS	Urban	Semi-Urban	Rural	Total
0–14 minutes	16.7	0.0	3.4	7.2
15–29 minutes	26.3	11.1	1.1	9.4
30–44 minutes	42.9	22.2	6.8	18.7
45–59 minutes	11.9	11.1	18.2	15.8
60 and above	2.4	55.6	70.5	48.9

Source: ISSER Household Survey, 2008.

School Enrolment

School attendance in the district has improved considerably at all levels of the educational ladder since 2005. However, more males are getting enrolled at all the levels compared to females and the gap widens further as one moves towards the higher echelons of the educational ladder as can be seen on Figures 4.1 and 4.2.

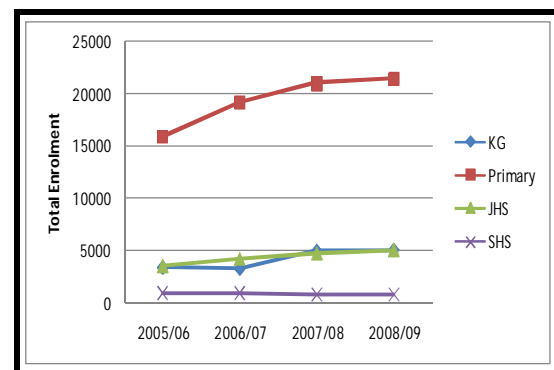


Figure 4.1: Total Enrolment in Nanumba North District, 2005/06–2008/09.

Source: GES, Nanumba North District Directorate.

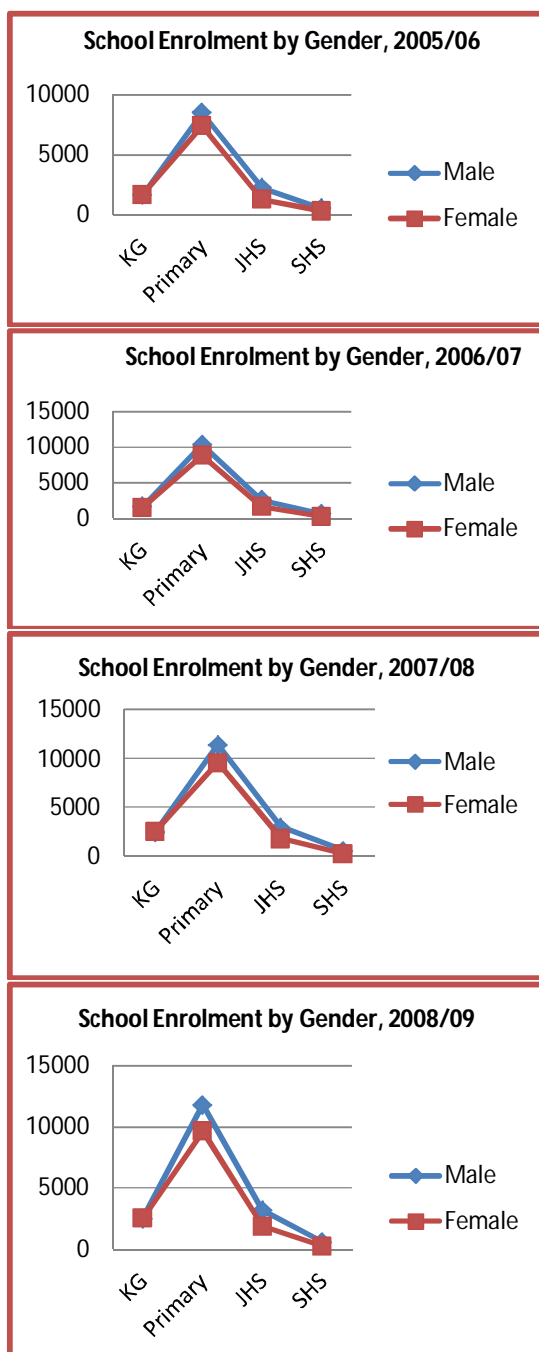


Figure 4.2: School Enrolment by Gender in the Nanumba North District, 2005/06–2008/09.

Source: GES, Nanumba North District Directorate

Preschool

Enrolment rate at the kindergarten level is quite low in the district although steady progress had been achieved over the years as can be seen in Figure 4.3. Gross enrolment rate in 2006/2007 was 40.4 per cent

compared to a national average of 83.6 per cent and 54.63 per cent for the Northern Region. The difference in gross enrolment rate between boys and girls is very marginal but the advantage is in favour of boys (41.7% for boys and 39.2% for girls). Net enrolment rate was 31.7 per cent in 2006/2007 and this is far below the national rate of 83.6 per cent and the regional rate of 54.63 per cent in the same year.

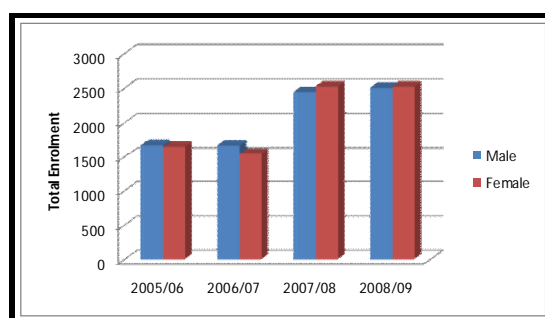


Figure 4.3: Kindergarten Enrolment by Gender, 2005/06 to 2008/09.

Primary School

Enrolment rates at the primary school level have increased considerably over the past few years. In 2006/2007 academic year for instance, gross enrolment rate increased considerably from 119.0 per cent to 131.7 per cent. The 2006/2007 rate is above the national rate of 93.7 per cent and the regional rate of 77.60 per cent (Figure 4.4). Enrolment rates over the years especially over the period 2006 to 2007 indicate that more children above the primary school going age are getting into primary schools in the district. Some gender differences can be noticed in the gross enrolment rates over the period 2006 to 2007. Gross enrolment rate for males compared to females was 125.5 per cent and 112.2 per cent respectively. The increase in enrolment rates being experienced in the district can be attributed to government interventions such as the capitation grant policy which was introduced in 2005, and the school feeding programme which continues

to impact on enrolment rate in the rural and urban areas of the country. However, evidence from Osei *et al.* (2009), indicates capitation grant amounts actually released by the Ghana Education Service in all the regions over the past three to four years fell short of the amounts due to each of the regions over the period. What this implies is that even though the enrolment is increasing (for reasons that may very well include the capitation grant) the schools are not getting all the amounts due. Undoubtedly, this imposes a challenge to these schools in terms of delivering on some of the key educational outcomes, especially outcomes relating to the quality.

Net enrolment rate increased appreciably from 87.3 per cent in 2006/07 to 96.1 per cent in 2007/08 compared to 81.1 per cent at the national level and 71.74 per cent at the regional level. The increment in net enrolment rate indicates that considerable number of appropriately aged children enrolled in school in the year 2007 compared to previous years.

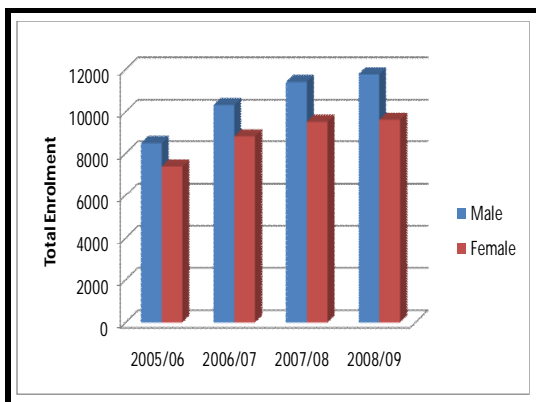


Figure 4.4: Primary School Enrolment by Gender, 2005/06 to 2008/09.

Junior High School

The district has been experiencing marginal increases in enrolment rates at the JHS level over the past few years (Figure 4.5). Gross enrolment rate increased steadily from 88.2

per cent in 2006/2007 academic year to 93.6 per cent in 2007/2008. The 2006/2007 figure was higher than the national figure of 77.4 per cent in the same year. Beside the increase, gross enrolment rate was higher for boys (100.6%) compared to that of girls (73.9%). This gender gap in enrolment can be explained by the increasing number of young females of school-going age who migrate to the southern part of the country to engage in various economic activities. Net enrolment rate was stable over the period 2006/07 (59.0%) to 2007/2008 (59.9%). These figures are below the national rate of 81.1 per cent and the regional rate of 71.74 per cent and also below the national target of 61.7 per cent in 2006. The gender differences in education experienced generally in the district can also be seen in the net enrolment rate figures. Net enrolment rate for boys was 67.7 per cent and 49.0 per cent for girls in 2006/2007.

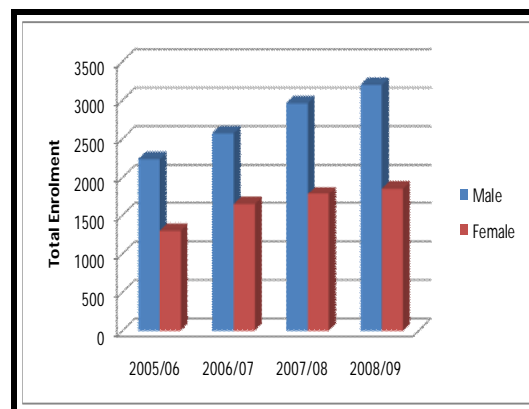


Figure 4.5: JHS Enrolment by Gender, 2005/06 to 2008/09.

There is significant difference in enrolment rate at the JHS compared to enrolment at the primary school level and the difference is in favour of primary school enrolment. This indicates that less number of pupils is able to make the transition from primary school to the JHS level. However, the effect of this difference is much more felt among girls compared to boys.

Senior High School

Enrolment at the Senior High School level is quite steady despite some marginal increases and dips being experienced over the years as can be seen in Figure 4.6. In 2005/2006 academic year, 876 students enrolled, and this increased slightly to 895 in 2006/2007 before dipping to 776 in 2007/2008 and then increased to 833 in 2008/2009. Strong gender differences can be noticed in the enrolment over the years. The ratio of male to female enrolment is 168.9 to 100 in 2005, 255.2 to 100 in 2006, 244.9 to 100 in 2007 and 247.1 to 100 females respectively.

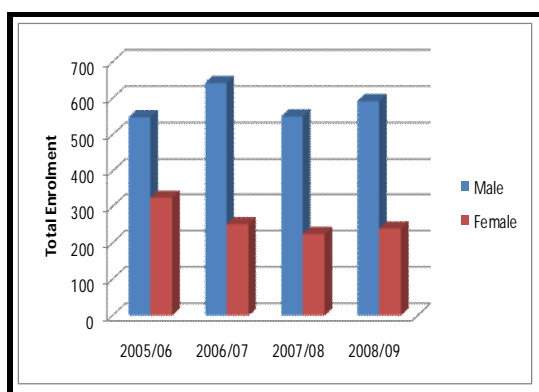


Figure 4.6: SHS Enrolment by Gender, 2005/06 to 2008/09.

Educational Quality

Pupil Teacher Ratio (PTR)

PTR is an important indicator used in measuring the quality of education. Higher ratios are likely to affect the quality of teaching in the classroom as the time spent by teacher per pupil on one-on-one basis decreases. PTR in 2005/2006 in the public primary schools was 44 but this improved to 38 in 2006/2007 and improved slightly again to 37 in 2007/2008. PTR at the JHS level was 30 in 2005/2006 but the situation worsened to 38 in 2006/2007 before improving to 25 in 2007/2008. This ratio falls in line with

national target at the JHS level of 25, but above the national ratio of 17.9, the regional ratio of 15.7 as well as the ratio for the most deprived districts in the country (18.9).

Proportion of Trained Teachers

The contribution of trained teachers in ensuring improved standards in the quality of education in the district cannot be underestimated. As the enrolment rates continue to increase in the district, there is the need to ensure that trained teachers are made available to improve education standards. The proportion of trained teachers in public primary schools in 2005/2006 was 50.9 per cent but this reduced significantly to 34.9 per cent in 2007/2008. This figure can be compared to a national figure of 62.1 per cent and a regional figure of 36.5 per cent. The percentage of trained teachers at the JHS level is relatively higher compared to the primary school. The proportion of trained teachers at the JHS in 2005/2006 was 78.1 per cent but this reduced to 62.0 per cent in 2007. This figure is below the national figure of 77.2 per cent in 2006/2007.

Non-Formal Education

Access to education under the non-formal education in the Nanumba North district is made up of two main divisions; Non-Formal Education Division (NFED) and the School for Life (SFL) programme. SFL educates children above the school going age. Usually, these children are between the ages of 8–15 years who otherwise would have missed the chance of being educated. These children are taught and then integrated into the formal education system. As of December 2008, 32 communities within the district have been covered by the SFL programme and 800 students have been integrated into the formal system.

At present, 70 of the students have been enrolled at the Bimbila Senior High School. The main challenge confronting the programme in the district is the occasional absenteeism on the part of some of the programme participants or children mainly due to their involvement in work related activities such as farming. This often prolongs the integration of these children or participants into the formal education system.

The NFED is mainly engaged in functional literacy programmes for the elderly who might not have had the chance of being educated. The division currently has 64 facilitators composed of 62 men and two women. In terms of operation, the division has two batches. Batch 14 has 216 males and 219 females whilst batch 15 has 398 males and 340 females. In addition to the above, there are also model classes made up of 384 males and 290 females. On the whole, a total of 1847 adults are currently learning under NFED in the district.

Health, Water and Sanitation

Introduction

The overall goal of the health sector is to ensure access to good quality care and nutrition for all Ghanaians. In order to achieve this goal, the health sector policy objectives continue to be focused on the following: bridging the equity gaps in access to quality health-care and nutrition services; ensuring sustainable financial arrangements that protect the poor; and strengthening efficiency in health service delivery in Ghana.

Box 5.1: The Health Component of the MDGs and Human Development

Millennium Development Goals

- Reduce child mortality by two-thirds between 1990–2015
- Improve maternal mortality
- Combat HIV/AIDS, malaria and other major diseases

Human Development

- Longevity — improving upon the life expectancy at birth

Policy emphasis of the current five year programme of work for the health sector is on expanding coverage of the National Health Insurance Scheme (NHIS); producing, retaining and distributing health personnel equitably; improving on the delivery of high-impact health interventions; and broadening access to emergency and ambulance services. These objectives, if achieved would go a long

way to improve on the country's chances of meeting a number of the targets under the health MDGs (see Box 5.1).

Key objectives of the health sector in Nanumba North District aimed at realizing the above goals is to increase geographical and financial access to basic health services; provide better quality care in all health facilities and during outreach; improve the efficiency in the health sector; forge closer collaboration and partnership between the health sector and communities, other sectors and private providers; ensure increased overall resources in the health sector and also ensuring that the increase resources are equitably and efficiently distributed (See Map 5.1).

Health Care Infrastructure and Personnel

The district has one hospital located in Bimbila, four clinics, and one CHPS zone (See Table 5.1). The district also has five feeding centres with a number of private pharmacies/drug stores and licensed chemical operators that are patronized by many patients in the district.

The number of beds in these health institutions that serve patients on admission was 100 in 2006, a drop from 142 beds in 2004. In addition to these static facilities that are located in 5 out of 6 Area Councils, the district has about 30 outreach points to cater for primary health-care and other activities

under the national immunization day programmes.

Map 5.1: Distribution of Health Facilities in the Nanumba North District

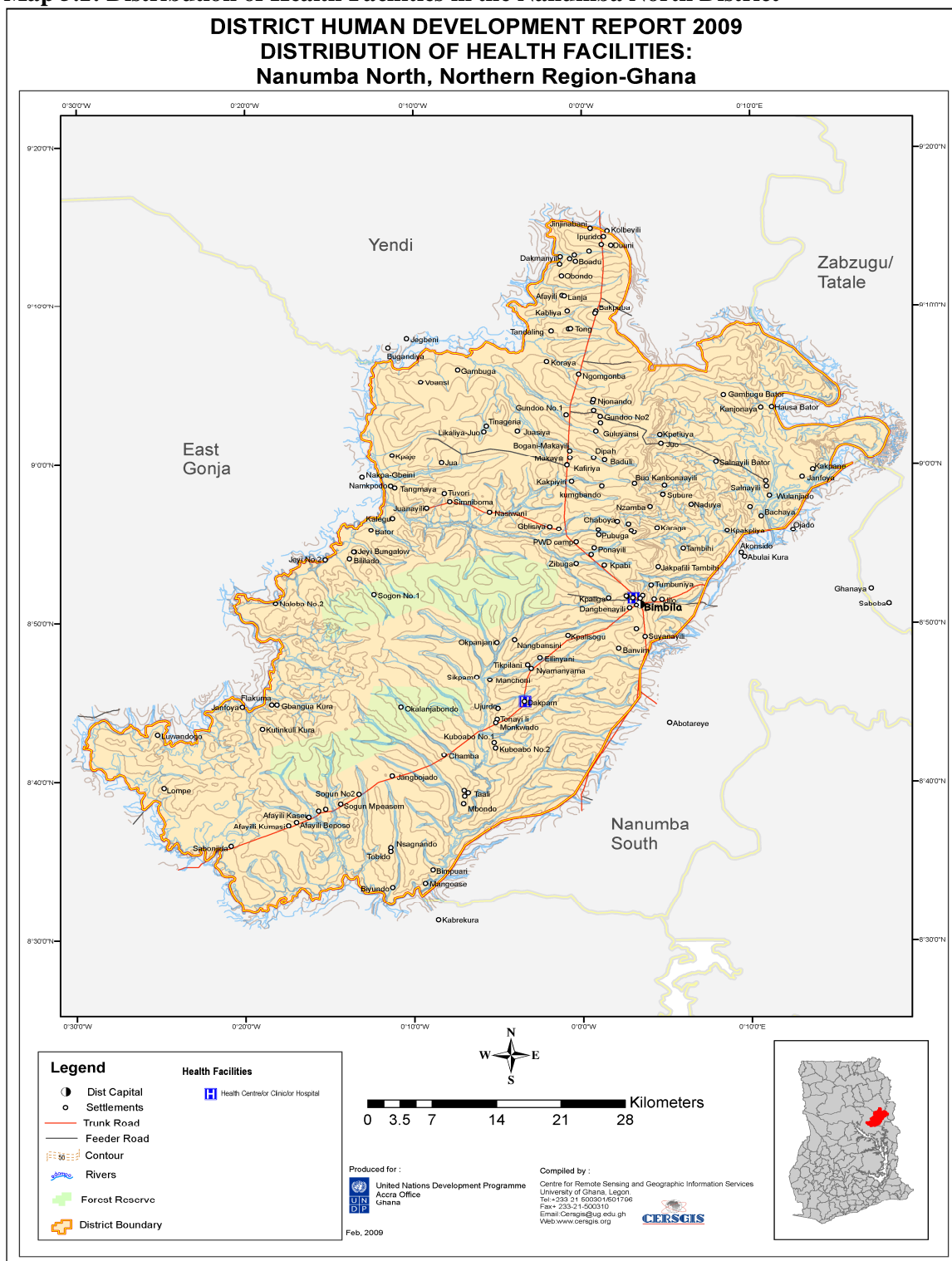


Table 5.1: Health Care Facilities in Nanumba North District

Type of Facility	Number
Hospitals	1
Clinics	4
CHPS Zone	1
Feeding Centres	5

Source: Ghana Health Service, Nanumba North District Directorate

There is considerable amount of pressure on available health personnel and facilities. The attainment of Ghana's health-care goals will be accelerated if there is a critical mass of well-trained personnel. However, in the Nanumba North District, the health facilities are manned by three doctors, one medical assistant, two pharmacists, thirty-one nurses and five midwives (Table 5.2). This shortage brings about a tremendous amount of pressure on the health personnel and also affecting the quality of health-care service delivery in the district. The population-doctor ratio in 2006 was 34,774. This, however, falls below the regional ratio of 67,154.

Table 5.2: Health Workers in Nanumba North District

Type of Worker	Number	Population Per Worker
Doctors	3	34,774
Medical Assistant	1	104,321
Pharmacists	2	52,161
Nurses	31	3,365
Midwives	5	20,864

Source: Calculations based on Ghana Health Service, Nanumba North District Directorate.

Health Status of Mothers and Children

Infant and Child Mortality

The incidence of child and infant mortality are critical determinants of life expectancy at birth. The MDGs number four also seeks to reduce child mortality by two-thirds between

1990 and 2015. The under five deaths in the district has experienced a significant reduction in recent times. Under-five deaths reduced from 95 in 2005 to 29 in 2006 and decreased further to 20 in 2007. The reductions in under-five deaths being experienced in the district is commendable considering the stagnating trend being experienced at the national level. Reasons that can be attributed for this is the improvements on preventive care among households such as children sleeping under insecticide treated bed nets, and improvements in immunization programmes within the district. According to the ISSER Survey in 2008, over 60 per cent of households reported their children sleeping under insecticide treated bed nets as a measure to prevent malaria. Malaria represents one of the most significant causes of infant and child mortality and morbidity in the district.

Table 5.3: Infant Mortality Rate

Year	Mortality Rate
2002	33 per 1,000
2003	52 per 1,000
2004	11 per 1,000
2005	103 per 1,000
2006	222 per 1,000

Source: MOH, Bimbila.

Compared to child mortality, infant mortality rate is very high and also fluctuates significantly (Table 5.3). Infant mortality rate in 2003 was 52 per 1000 live births but this reduced drastically to 11 per 1000 live births in 2004 before increasing significantly to 222 per 1000 live births in 2006. Compared to the national rate of 71 per 1000 live births, according to the 2006 MIC Survey, infant mortality rate is very high in Nanumba North District. Some of the leading factors contributing to the high infant mortality rate in the district include the limited accessibility to health care especially within the rural areas of the community, inadequate health personnel (*see also* Table 5.5), bad breast-feeding and weaning practices and high malnutrition situation in the district.

Maternal Mortality

Like infant mortality, maternal mortality rate is high and also fluctuates. Maternal mortality rate in 2003 was 396 per 100,000 live births and this reduced to 145 per 100,000 live births in 2004 before increasing to 731 per 100,000 live births in 2005. By the half year count of 2006, maternal mortality was 725 per 100,000 live births. The maternal mortality rate in the district can be compared to national rates of 197 per 100,000 live births in 2006 and 224 per 100,000 live births in 2007 (Table 5.4). Factors contributing to the high mortality rate include the difficulty in accessing health-care services especially within the rural areas, limited health facilities and the inadequate health personnel.

Table 5.5: Top Five Causes of Morbidity in Nanumba North District

Cause	2005		2006		2007	
	Number	%	Number	%	Number	%
Malaria	19,307	77.9	16,911	82.4	26,406	84.8
Diarrhoea	2,504	10.1	1,672	8.2	1,897	6.1
RTI (Respiratory Tract Infection)	1,346	5.4	897	4.4	956	3.1
Skin Diseases	923	3.7	635	3.1	1,003	3.2
Eye Infection	717	2.9				
Hypertension			400	1.9		
Gastro Enteritis					865	2.8
Total OPD Cases	24,797	100	20,515	100	31,127	100

Source: Ghana Health Service, Nanumba North District Directorate.

Table 5.4: Maternal Mortality

Year	Actual	Maternal Mortality Rate
2002	2	211 per 100,000
2003	4	396 per 100,000
2004	3	145 per 100,000
2005	6	731 per 100,000
2006 (half year)	2	725 per 100,000

Source: MOH, Bimbila

Incidence of Diseases

One of the cardinal goals of the MDGs is to combat HIV/AIDS, malaria and other major diseases. The target in this regard is to halt and reverse the spread of HIV/AIDS and incidence of malaria and other major diseases. The leading cause of morbidity in the Nanumba North district is malaria followed by diarrhoea, skin diseases and respiratory tract infection (Table 5.5). Malaria accounted for 77.9, 82.4 and 84.8 per cent of all OPD cases in 2005, 2006 and

2007 respectively. This contributes to low productivity and consequent poverty in the district. From 2005, all the major causes of morbidity experienced a reduction in cases in 2006, but increased dramatically in 2007.

Strategies for Combating Malaria

In an effort to combat the incidence of malaria, in 2007, the National Malaria Control Programme (NMCP) and UNICEF in collaboration with the Ghana Health Service intensified efforts to reduce malaria incidence in the country. Some of the key interventions under the Roll Back Malaria (RBA) Initiative, which were implemented in the Nanumba North District include

promoting the distribution and utilization of Insecticide Treated Nets (ITN) particularly among pregnant women and children under five years of age, promoting home-based care with emphasis on symptoms detection and early treatment, promoting the use of *Sulphadoxine Pyremithamine* (SP) among pregnant women and intensifying public education to promote malaria interventions using the mass media among others. Some of these preventive measures are impacting within the communities. According to the ISSER 2008 Household Survey, the most common strategies adopted by households for preventing malaria include children sleeping under insecticide treated bed nets (60.6%), regular weeding and clearing of household compound (56.1%), adults sleeping in treated bed nets (52%) and regular use of mosquito coil (47.9%). (See Table 5.6 for details). Interestingly, a sizable proportion (11%) of households has not adopted any strategies at all to prevent malaria.

HIV/AIDS and Other Diseases

The district does not participate in the national sentinel survey and this has made it difficult to know the HIV/AIDS prevalence rate in the district. However, in 2008 out of 597 people who replaced blood at the Bimbila Hospital, 10 were HIV positive. In the same hospital in 2008, out of 205 clinical patients, 39 were HIV positive and of the 818 blood bank donors, 49 were positive. The district is now concentrating on VCT education and work place policies on HIV/AIDS. A total of 325 cases were screened from blood donors and pregnant women attending antenatal care as well as people who came for voluntary testing and counselling by the half year count of 2006. Out of this, 87 people were found to be positive.

Table 5.6: Household Measures to Prevent Malaria in Nanumba North District

Measures	Total
Children sleep in treated bed nets	60.6
Adults sleep in treated bed nets	52.7
House is sprayed regularly	12.0
Compound is weeded regularly	56.1
Use mosquito coil regularly	47.9
Windows in house have mosquito nets	4.6
Gutters are cleaned regularly	2.6
Take anti-malaria tablets regularly	3.1
Nothing	11.1
Special leaves (repellent)	2.0

Source: ISSER Household Survey, 2008.

However, these figures could be grossly underestimated as there are a lot of people in the district who do not donate blood or go for voluntary testing. Also, not all pregnant women in the district attend antenatal clinics and this is particular among women in the rural areas. According to the ISSER 2008 Survey, 17 per cent of pregnant women do not receive prenatal care and 96.4 per cent of these pregnant women are located in the rural areas of the district. For VCT education and work place policies to be effective, there has to be a clear strategic approach as majority of the district inhabitants are employed or operate within the informal sector.

Guinea Worm

Nanumba North district is one of the guinea worm endemic districts in the country. However, the number of reported guinea worm cases has been reducing over the past few years. In 2003, 1037 cases of guinea worm infestations were recorded but this declined to 457 cases before declining again to 37 by the half year count of 2006. The decline in the guinea worm cases is due to some positive interventions which include, among others, the establishment of case containment shelters, distribution of filter and usage, guinea worm eradication and promotional activities, active surveillance, abating of dams, fencing of selected dams, guards to protect water bodies and provision of potable water to guinea worm endemic communities. Under the Global Eradication of Guinea Worm Initiative, Ghana should have reported zero guinea worm cases by the end of 2009. A major factor likely to stall efforts at eradicating the disease in the Nanumba North district is access to safe water supply especially in the rural communities of the district. According to the ISSER 2008 Survey, 7.6 per cent of households in the rural areas of the district rely on rivers, ponds and lakes as their main source of drinking water.

Tuberculosis

The lack of basic equipment in laboratories for conducting sputum microscopy on suspected tuberculosis cases is making it difficult to identify and confirm cases. Aside, evidence from the Nanumba North Directorate of the Ghana Health Service indicates a reduction in the number of reported tuberculosis cases (Figure 5.1).

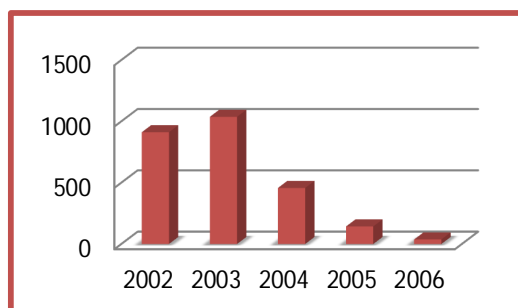


Figure 5.1: Tuberculosis Incidence in Nanumba North District Assembly, 2002–2006.

Use of the National Health Insurance Scheme

The National Health Insurance Scheme is a mechanism to increase access to health services. The scheme is designed to reduce the cost of access to quality health service to the poor and deprived households. Registration under the National Health Insurance Scheme is very low in the district. According to the ISSER 2008 Survey, 53.2 per cent of households have never registered before under the NHIS (Table 5.7). It is noted that 35.1 per cent of households have indeed registered with the NHIS but only a small proportion of 7.3 per cent have ever been covered before. The main reason given by households for not registering with the NHIS is finance. An overwhelming majority of 98.4 per cent of households who have never registered or ever been covered but no longer enrolled on the scheme consider the premium to be too high. For households who have ever been registered or covered before under the scheme, 74.5 per cent are still registered with the scheme. However, only 21.5 per cent are currently covered under the scheme. The low number of people currently covered by the scheme can be explained by the lack of willingness on the part of registrants to renew their insurance at the end of the yearly expiration period. Majority of the registrants eventually do get covered but in reality, most households do not renew their insurance on time. Also, it takes a while, about three months for registrants to receive their registration cards in order to get them covered under the scheme.

Limited financial access in the district still poses a major barrier to accessing health-care in the district. For households who have ever registered under the NHIS but currently not covered or registered, 29.4 per cent indicated that the premium paid on the scheme is too high and as a result, they were unable to renew their registration.

Access to Safe Water and Sanitation

Access to safe drinking water and basic sanitation is one of the targets of the seventh MDG of ensuring environmental sustainability. Under this goal, countries are required to ensure an increased proportion of the population with sustainable access to improved water sources and sanitation.

Improving households' access to safe drinking water and basic sanitation is known to be associated with improved quality of human resources and poverty reduction. This is due to the impact of improved water sources on favourable health outcomes and increased productivity. Indeed, the best way of preventing the outbreak of diseases such as malaria, diarrhoea and other related diseases is to enhance access to safe drinking water and safe sanitation. With improved health status, households will be able to devote adequate time for their economic and other productive activities.

Table 5.7: Utilization of the National Health Insurance Scheme

Status	Urban	Semi-Urban	Rural	Total
Registered Before	69.0	63.3	27.8	37.9
Covered before	25.2	1.1	5.2	8.8
Not Covered or Registered before	5.8	35.6	67.1	53.2
Registered	69.6	84.5	78.5	75.4
Covered	28.5	15.5	17.1	21.5
Not Registered or Covered	2.0	0.0	4.4	3.0

Source: ISSER Household Survey, 2008.

Improved access to safe water and sanitation is given a high priority under GPRS II as well as the Medium Term Development Plan of the Nanumba North District. The Medium Term Plan, 2006–2009, of the district aims to provide improved access to potable water facilities from 40.7 per cent in 2007 to 80 per cent by 2009 and also aims at ensuring improved household latrines from 5 per cent to 15 per cent by 2009.

Table 5.8 Main Source of Drinking Water

Drinking Water Source	Urban	Semi-Urban	Rural	Total
Pipes inside dwelling unit or compound	12.2	0.0	0.0	2.7
Public outdoor tap	42.9	0.0	0.6	10.0
Borehole	42.9	93.3	91.7	80.9
Protected/covered Well	0.0	6.7	0.0	0.5
Purchased treated water (tanker, bucket, barrels & sachet)	2.0	0.0	0.0	0.5
River/pond/lake	0.0	0.0	7.8	5.5

Source: ISSER Household Survey, 2008.

Improved access to safe drinking water refers to the increased proportion of households that draw water from pipes in dwelling or in compound, and from boreholes and protected wells and from other treated sources such as sachet water. An overwhelming majority (80.9%) of the inhabitants of the district rely on water from boreholes for drinking purposes while 10.0 per cent rely on public outdoor taps. This indicates that the goal of the district regarding access to safe drinking water by 2009 has been met. However, 5.5 per cent of households rely on unsafe water sources such as rivers, ponds and lakes. Pipe-borne water coverage is only in the urban areas of the district. Within the urban communities, 42.9 per cent of households rely on public outdoor pipes and boreholes while 12.2 per cent have pipes inside their dwelling units or on compounds (Table 5.8). Of rural households, 91.7 per cent rely on boreholes while 7.8 per cent rely on rivers, ponds and lakes, which are unsafe. Most of the households in the semi-urban communities (93.3%) have access to borehole water facilities with the remaining 6.7 per cent drinking water from protected or covered wells.

The construction of boreholes in a number of communities have contributed remarkably to the improvement in access to safe drinking water and this may have largely accounted for the reduction in the reported cases of guinea worm infestations in the district. Access to improved drinking water sources have improved substantially in the district over the past five to six years. Evidence from the 2008 ISSER Survey indicates that about 89 per cent of households have access to drinking water within 30 minutes of reach compared to 63.4 per cent in 2003 for the former Nanumba North District. Of outmost interest to this improvement is the indication that most households (93.6%) in both the rural and urban communities of the district reach the source of drinking water by foot and 63.4 per cent have access within 0–14 minutes of reach while 25.6 per cent of households reach their drinking water sources within 15–29 minutes.

Resource Endowments

Introduction

Conceptually, resource endowment can be defined as anything located at a particular place and can be used to bring about development or improvement in the living conditions of people. Resource endowments are categorized into natural/environmental, physical, socio-economic, political and human resources. The availability and interplay of all these resource categories in a particular locality has the greatest potential of unlocking poverty, and in bringing about political, social and economic development in the living conditions of people. For example, the availability of natural resources in an area will not necessarily bring about improvement in the living conditions of the people in that locality. For benefits to be derived from the available natural resource base, the technology necessary to effectively harness the resource is very critical. As well, the social and political environment must be conducive for people to invest in the resource. Equally important in the quest to derive maximum benefits from the available natural resource is the human resource base, as well as the institutional and governance structures to make and enforce rules and regulations necessary for creating an enabling environment for any investment to succeed. Finally, the political and institutional structures must create room for the people to be involved in the resource exploitation and utilization processes. Resource endowment is, therefore, very crucial for the attainment of the MDGs.

The chapter explores the available natural/environmental, physical, socio-economic, human and institutional and political resources available in the Nanumba North district and how these resources are being utilized or are functioning to bring about improvements in the living conditions of people.

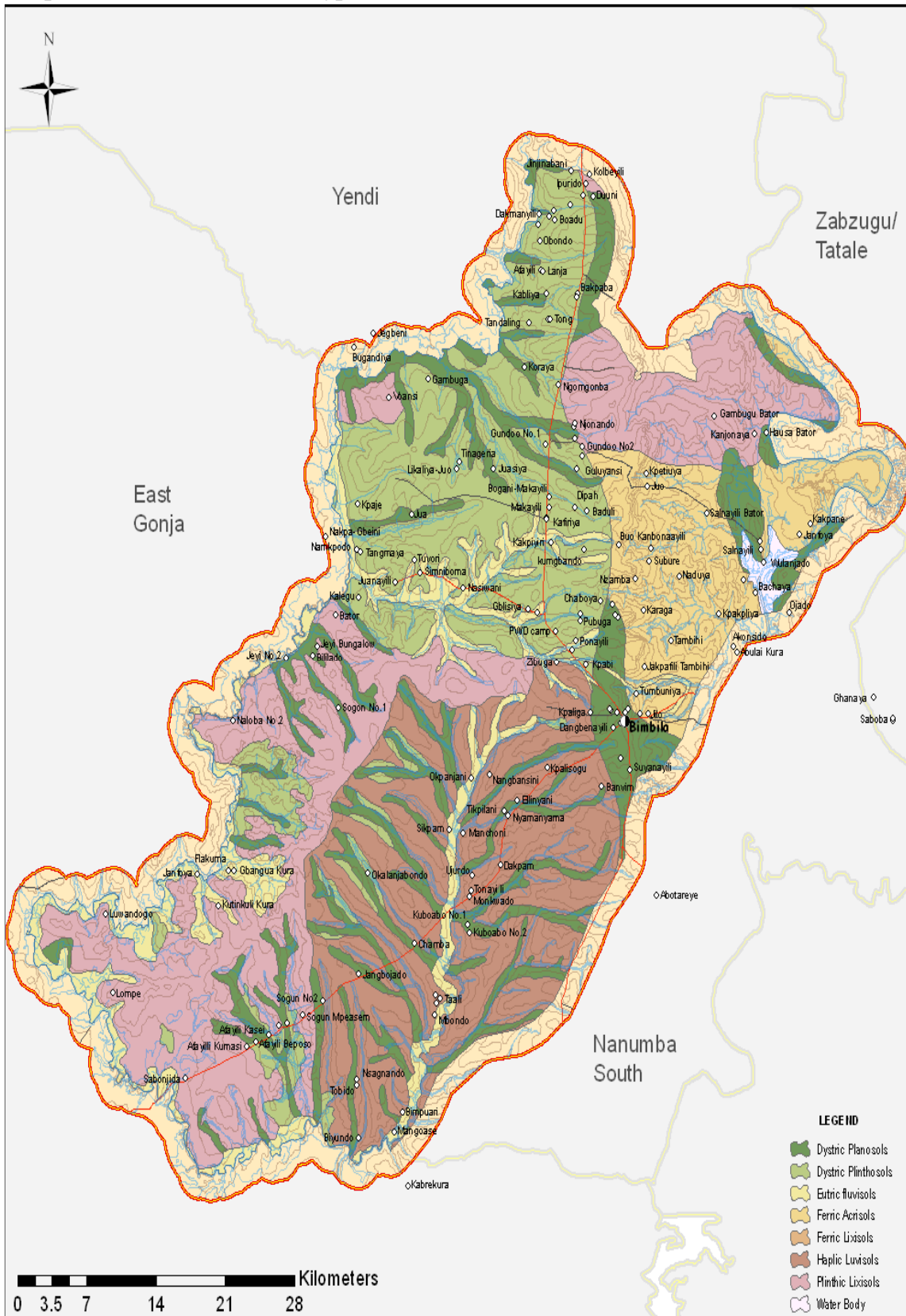
Natural/Environmental Resources

Geology and Soil

The district is underlain by Voltaian rock formation which covers two fifths of the surface area of Ghana. The formation consist principally of sandstones, shales, mudstones and limestones (Dickson and Benneh 1988).

Map 6.1 presents the distribution of soil types in the district. Soils in the Nanumba North District are closely associated with the geology and have been developed over both the Voltaian shales and granites. Soil types are principally savannah ochrosols. Characteristically, these soils are of alluvial-colluvial origin found mainly along major rivers and drainage courses and are located mid-south through to the north. They are medium textured material, moderately well drained soils suited for a wide range of crops such as cereals, roots and tubers, and legumes. The savannah ochrosols are well drained soils with the surface having loamy sand or sand-textured material with good water retention. They are heavy and dark coloured and suitable for forestry and conservation programmes (Nanumba North District Assembly 2006).

Map 6.1: Distribution of Soil Types



Land Use and Land Cover

Different vegetation types exist in the Nanumba North district. These land cover types have been converted to different land uses over the years through the activities of man. Using the current medium resolution satellite imagery and ground information, five dominant land cover and associated land use types were observed. Map 6.2, presents the spatial distribution of the observed land cover types and the associated land use. Grassland, the dominant cover was found across the entire landscape and occupies over 131000 hectares (41.6%) of landscape. This was followed by Shrubland, woodland, croplands, and settlement/degraded land occupying 129 674 (41.0%), 29464 (9.3%), 24712 (7.8%), and 752 (0.2%) hectares of land respectively (Table 6.1).

Table 6.1: Matrix of Land Cover/Land Use Distribution in the District

Land Cover/Land use	Areas (ha)	Percentage of Area (ha)
Woodland	29,464	9.3
Shrubland	126,674	41.0
Grassland	131,499	41.6
Cropland	61,065	7.8
Settlement/Degraded	752	0.2

Source: CERSGIS, 2007

Land Suitability for Major Crops

The Land suitability maps depict suitability classes for crop production circumstances relevant to a set of agricultural and socio-economic conditions prevailing in Ghana, which were defined in terms of Land

Utilization Types based on rainfall cropping at three levels of inputs and farm operations — low, intermediate and high. Three classes of suitability based on Land Utilization Types (LUTs) are set out in Table 6.2.

The area planted to the major crops cultivated in the district has increased substantially over the years, with the exception of soy beans, though, some fluctuations were experienced (Table 6.3 and Figure 6.1). The most significant increment was experienced in the area planted to yam. In 2000 for instance, the area planted to yam was 800 hectares. This increased significantly to 15,200 hectares in 2003 and then to 15,645 hectares. In 2000, the area planted to millet was 200 hectares but this increased significantly to 2,800 hectares in 2003 before dropping marginally to 2,436 hectares in 2006. The area planted to soy beans has been fluctuating over the years, but in recent times, the area planted to the crop has declined significantly. In 2000 for instance, area planted to soy beans was 1,400 hectares and this increased to 4,200 hectares in 2004 before declining significantly to 740 hectares in 2005. The fluctuations in the area planted to the major crops can be attributed to the cropping type practised by most of the farmers. A sizeable number of farmers in the district practice mixed crop farming (52.6% in 2006 and 51.4% in 2007) (ISSER, 2008). With this cropping type, it is likely for increases in average area planted to some crops to affect others.

Map 6.2: Distribution of Land Cover and Land Use

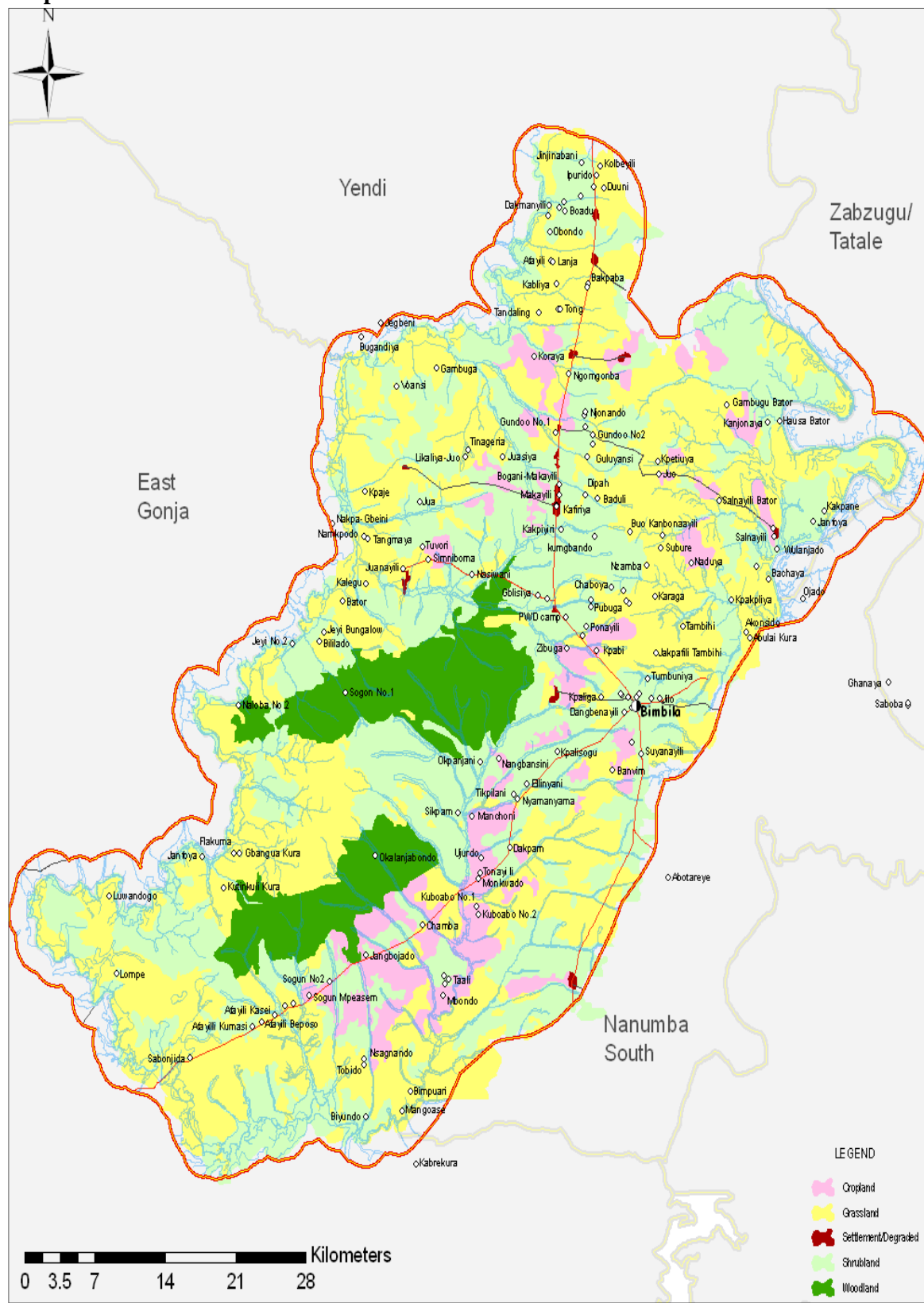


Table 6.2: Attributes of Land Utilization Types

Attributes	Low Inputs	Intermediate Inputs	High Inputs
Produce and production	<i>Rain-fed cultivation</i> of maize, pearl millet, wetland rice, sorghum, cowpea, green grain, groundnut, phaseolus bean, pigeon pea, soybean, cassava, sweet potato, cocoyam, white yam, greater yam, yellow yam, cotton, tobacco, avocado, cashew, banana, citrus (sweet orange), cocoa, coconut, robusta coffee, mango, oil palm, pineapple, plantain, rubber, and shea butter according to general crop calendars.		
Market Orientation	Subsistence production	Subsistence production plus commercial sale of surplus	Commercial production
Capital Intensity	Low	Intermediate with credit on accessible terms	High
Labour Intensity	High including uncosted family labour	Medium including uncosted family labour	Low family labour cost if used
Power Source	Manual labour with hand tools	Manual labour with hand tools and/or animal traction with improved implements; some mechanization	Complete mechanization including harvesting (where applicable)
Technology	Traditional cultivars. No fertilizer or chemical pest, disease and weed control. Fallow periods. Minimum conservation measures	Improved cultivars as available; appropriate extension packages. Including some fertilizer application and some chemical pest, disease and weed control. Adequate fallow periods and some conservation measures	High yielding cultivars including hybrids. Optimum fertilizer application. Chemical pest, disease and weed control. Full conservation measures
Infrastructure	Market accessibility not necessary. Inadequate advisory services.	Some market accessibility necessary. Access to demonstration plots and advisory services.	Market accessibility essential. High level of advisory services and application of research findings
Land Holding	Small, fragmented	Small, sometimes fragmented	Large consolidated
Income Level	Low	Moderate	High

Source: Soil Research Institute, CSIR, Accra, Ghana.

Note: No production involving irrigation or other techniques using additional water.

Table 6.3 Area Planted to Selected Food Crops (ha)

Crop	2000	2001	2002	2003	2004	2005	2006
Maize	4,500	8,900	8,700	8,200	8,500	9,000	9,000
Rice	600	912	850	50	1,115	934	934
Millet	200	300	250	2,650	2,350	2,430	2,436
Sorghum	1,500	200	300	2,800	3,850	3,945	3,995
Yam	800	10,000	14,500	15,200	14,600	15,645	15,645
Cassava	3,600	360	61,000	5,200	5,250	5,342	5,342
Groundnuts	340	3,900	500	6,000	6,000	7,500	7,500
Soy beans	1,400	2,000	3,500	4,200	4,200	740	740
Cowpeas	750	1,020	4,000	1,500	2,980	980	980

Source: Ministry of Agriculture, Nanumba North Directorate.

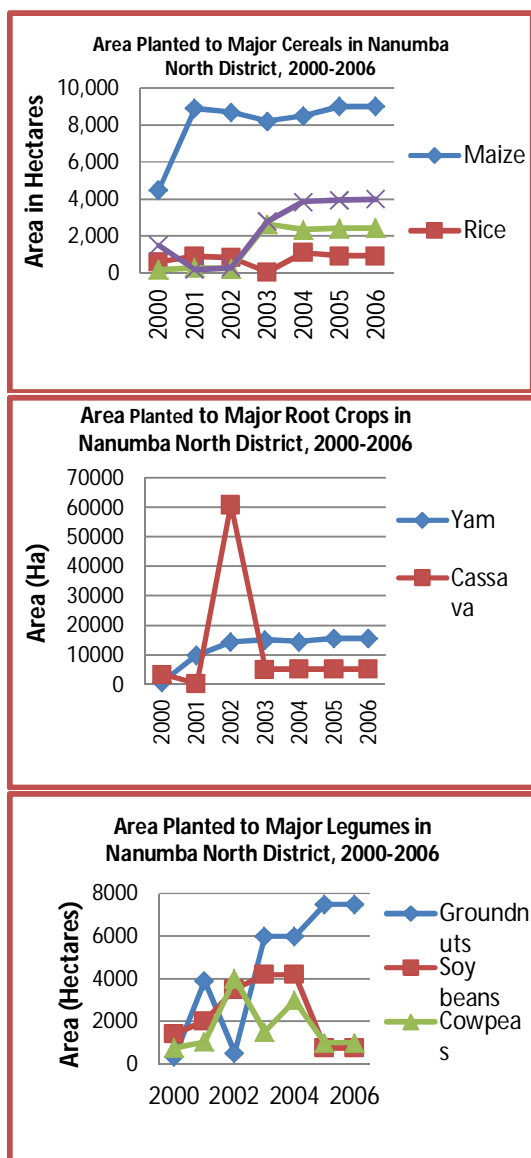


Figure 6.1: Area Planted to Major Crops, 2000 to 2006.

Physical Resources

Transportation, Communication and Information Infrastructure

The District has a total of 339 transportation networks, comprising of 235 trunk roads and 103 feeder roads. The total length of feeder

road network in the district, according to the Department of Feeder Roads, is about 523.65 km. Most of the roads are non-engineered (405.1 km or 77.4%) with engineered roads constituting 117.8 km (22.5%) of the entire network. Generally, road conditions in the district are very poor with almost the entire network untarred. The tarred section, comprising 1.5 km (0.3%) of the network can be found in Bimbila, the district capital. During the raining season, sections of the road network are unmotorable as the road becomes muddy, flooded and with a lot of gullies mainly due to the low lying terrain and the soft soils. During the dry season, on the other hand, the road network becomes very dusty and difficult to drive on. The deplorable nature of the road network makes it difficult for the district to be accessible especially during the rainy season. With severe constraints in the level of accessibility it becomes very difficult for farmers to market their farm products.

The communication infrastructure in the district is poorly developed. The district has connectivity for Vodafone fixed line, but this service extends to only a small portion of the district. Most households do not have access to fixed line services, and instead, rely on mobile phone services. However, connectivity problems to the mobile telephony services restrict usage of the service.

The district has information centre with internet connectivity. Although the facility is open to all, usage is, however, restricted mainly to residents of Bimbila and a few surrounding communities due to the location of the facility in Bimbila and the transport challenges which confronts the district.

Socio-economic Resources

Health Infrastructure

The district has one hospital, which is located in Bimbilla, four clinics, and one CHPS zone. Besides, there are other five feeding centres with a number of private pharmacies/drug stores and licensed chemical operators that are patronized by many patients in the district. However, the underdeveloped nature of the road network and the transport system makes it difficult for people to access these health facilities.

Educational Infrastructure

There are a number of educational infrastructural resources ranging from kindergarten, primary and high schools, and a teacher training college. The distribution of these facilities can be seen in Map 6.3. In total, there are 201 school facilities made up of 65, 98 and 38, Nursery, Primary and Junior high schools respectively in the Districts. These facilities are distributed as follows; 61 out of the 65 are located in 61 communities. Similarly, 31 of the Junior high schools are found in 31 communities. The only senior high school and teacher training college are located in Bimbilla, the district capital.



Picture 6.1: Main Bimbilla Yendi Road.

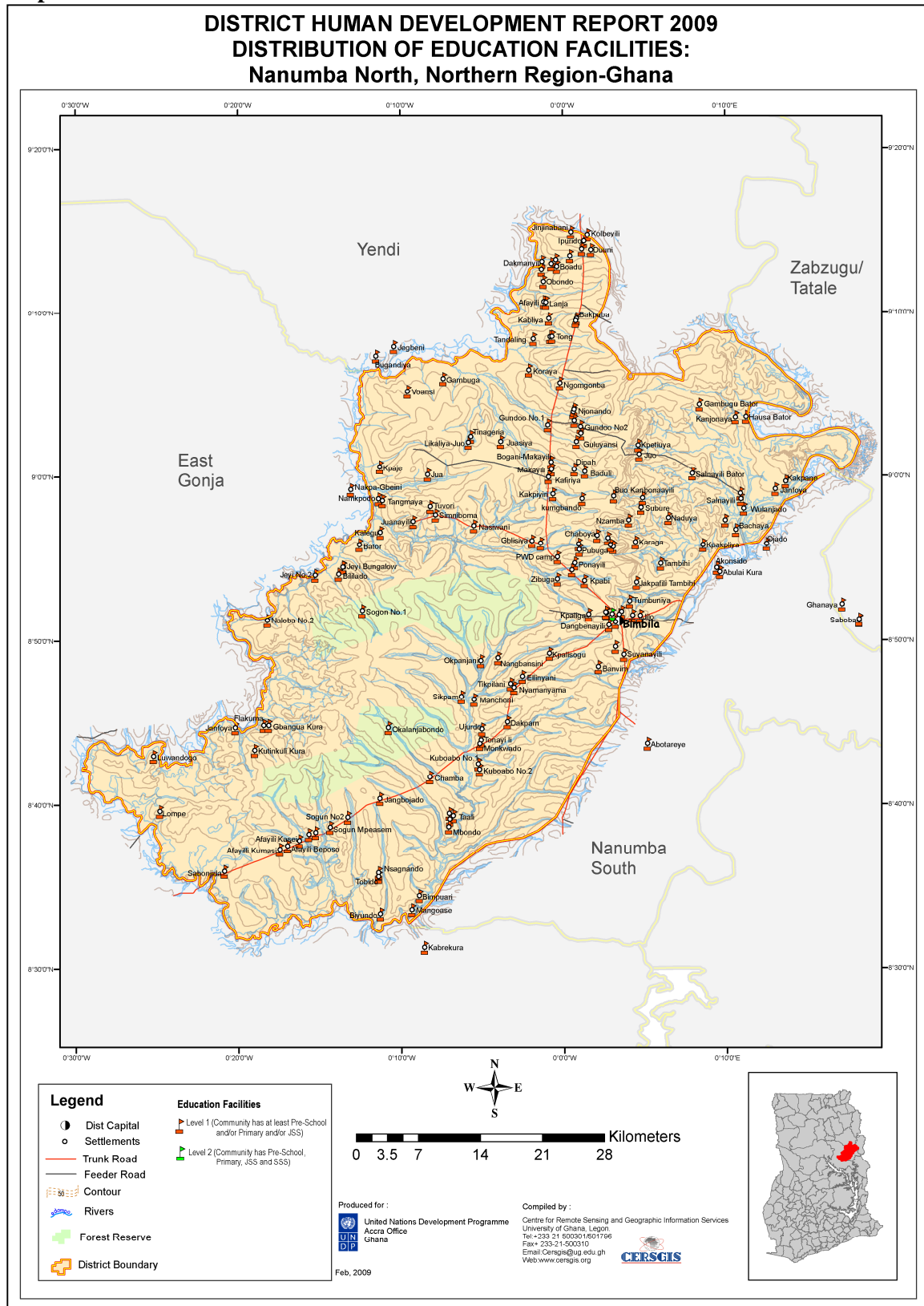


Picture 6.2: Community Information Centre, Bimbilla.

Markets

Local markets, which vary in size and importance, are located in major communities in Nanumba North. Markets in the District are classified into two categories, namely: Daily markets and Periodic markets. Map 6.4 gives information on communities identified as important market centres. These markets are fairly accessible to households. According to the 2008 ISSER Household Survey, 32.7 per cent of households reach the nearest food market in 0–14 minutes by foot while 40.5 per cent reach in 15–29 minutes also by foot.

Map 6.3: Distribution of Educational Facilities



Map 6.4: Distribution of Market Facilities



Tourism

The district abounds with a lot of tourist potentials. Some of these tourist potentials include the following:

- Bugkpinga sacred groove located in Bimbila,
- Gmantambu Grave located at Duuni,
- Kpalga Mosque located at Kpalga,
- Statue Rock located at Kpatinga, and
- Ancient Xylophone based in Gilisiya.

In addition to these attractive sites, there are important festivals which add up to the tourist potential in the district. These festivals include the following:

- The Fire festival celebrated at the beginning of the traditional month,
- Damba festival which signifies the birth of the holy prophet Mohammed and its celebration rotates,
- Guinea fowl festival celebrated between July and September, and
- Yam festival celebrated between July and September.

Despite these potentials, tourism in the district has not been fully developed to bring about improvements in the living conditions of the people.

Human Resources

Human resources are the principal assets of every society and are required for the success of government and private investments. The development of human resources contributes to civil liberties, improved population health and reduced crime and corruption, social stability,

advancing economic development and attracting investments.

Core District Assembly Staff and Qualification

Table 6.4 shows the core staff of the NNDA and their background qualifications in addition to other analogous staffs at the works unit. The Environmental Health Unit is constituted by 15 staff and headed by a Principal Environmental Health Technologist who has an HND in Environmental Technology. There is a Social Welfare Officer with a Diploma in Social Work and a Community Development Officer with a degree in Integrated Development Studies.

Literacy

High literacy rate is very important for enhancing the benefits of government investments as well as creating an enabling environment for attracting private investments. It also promotes the success of investments, both public and private. Literacy rate within the Nanumba North district is very low. Out of the total population, only 27.8 per cent can read and write in English Language. Out of this proportion 16.2 per cent are made up of males with 11.6 per cent females (ISSER 2008). Apart from the English Language, 24.6 per cent of the total population can speak and write in at least one other language, with 14.6 per cent of this proportion being made up of males and 10.2 per cent females. The low literacy rate in the district has serious implications for promoting investments within the district as well as enhancing the success of investments at the household and governmental levels.

Table 6.4: Qualification of District Assembly Staff

Position	Rank	Qualification
1 District Co-ordinating Director	Deputy Director	B. A. (Hons)
2 District Planning Officer	Senior Planning Officer	B.A. (Hons), M.A. Dev't Studies
3 District Budget Officer	Budget Analyst	B.A. (Hons), M.A. Economic Policy Management.
4 District Finance Officer	Principal Accountant	HND Accounting
5 District Works Engineer	Technician Engineer	HND Building Technology
6 Feeder Roads Engineer	Technician Engineer	CTC III
7 Deputy DCD I	Deputy Director	B.A. (Hons)
8 Deputy DCD II	Assistant Director 2 A	B. A. (Hons)
9 Four Accounts staff	2 Accountants & 2 Principal Accounts Officers	HND Accounting

Source: Budgetary Unit, NNDA.

Health-care Professionals

Nanumba North district has a total of 42 health care professionals. Out of this figure, there are three medical doctors, one medical assistant, two pharmacists, 31 nurses and five midwives. Considering the population of the district, the number of health professionals are not enough and this is likely to have negative repercussions on efforts to attract and retain key professionals such as teachers, agricultural extension officers, planners and engineers that are necessary for attracting and promoting investments in the district.

Institutional Structure and Governance

Administrative Structure

The institutional framework for decision-making rests with the Nanumba North District Assembly (NNDA), which serves as the highest political and administrative body in the district. Administratively, the NNDA consist of 42 members: 30 elected members, 10 government appointees, the District Chief Executive and a Member of Parliament. The district assembly has five female

members, of which two are elected and three appointed. As provided by the 1992 Constitution, the Town and Area Councils, and Unit Committees are vital in local level development in any district. Hence, the NNDA has created one Town Council and five Area Councils.

The District Chief Executive heads the Office of the District Assembly, whilst the Presiding Member presides over Assembly sessions, meetings and any other committee s/he may be chairing. The Local Government Act (Act 462) reconstituted the former 22 decentralized departments into 11 under the District Assembly. The operations, activities and initiatives of these departments are coordinated by the District Coordinating Director.



Picture 6.3 Nanumba North District Assembly, Bimbila.

The Local Government Act (Act 462) 1993 established the DAs to be responsible for the following:

- Overall development of the district (plan, budget and implement development programmes and projects),
- Coordination of activities of ministries, departments, public corporations, NGOs etc within the district, and
- Maintenance of security and public safety (execution of Law).

To ensure the enforcement of rule of law and promote security, the district has a Magistrate Court with a resident Magistrate who presides over court proceedings in the dispensation of justice. In addition, a District Police Headquarters has been established and there are plans to establish two other stations, one in Chamba and the other between Pusugu and Bincheratanga. Other agencies that operate in the district to uphold the rule of law and to maintain security include the Department of Human Rights and Administrative Justice, National Commission on Civic Education, Information Services Department and the Bureau of National Investigations. With the exception of the Physical Planning Department, all the other decentralized departments are established in the district and are operational.

The decentralized departments include the following:

- Central Administration,
- Ghana Education Service,
- Ghana Health Service,
- District Agricultural Development Unit,
- Social Welfare/Community Development,
- Finance Department,
- Works Department,
- Natural Resource Conservation Department,

- Disaster Prevention Department, and
- Trade & Industry Department.

Functions of the District Assembly

Generally, the District Assembly has two major functions: political and administrative, and planning. According to the provisions of Act 462, the District Assembly is the highest political and administrative authority in any district. As such, NNDA provides guidance, gives direction to and supervises all administrative authorities in the district. In so doing, it exercises deliberative, legislative and executive functions over its territorial jurisdiction.

Under the same Act, the District Assembly is established as the Planning Authority of the district. In pursuance of this function, the NNDA ensures the preparation of Development Plans of the district and submits them through the Northern Regional Coordinating Council to the National Development Planning Commission for approval. In addition, it prepares budgets related to the approved plans and submits them to the Ministry of Finance and Economic Planning for approval. Specifically, the Assembly performs the under-listed tasks:

- Formulates and executes programmes and strategies for the effective and efficient mobilization and disbursement of necessary resources for the overall development of the district,
- Promotes and supports productive activity and social development in the district and removes any obstacle to initiative and development,
- Initiates programmes for the development of basic infrastructure and provide municipal works and services in the Nanumba North District,

- Responsible for the development, improvement of human settlements and the environment in the district,
- Takes necessary steps to execute approved development plans for the district,
- Guides, encourages and supports sub-district local government bodies, public agencies and local communities to perform their roles in the execution of approved development plans,
- Initiates and encourages joint participation with other persons or bodies to execute approved development plans, and
- Monitors the execution of projects under approved development plans and assesses and evaluates their impact on the people's development at the local, district and national levels.

the UN Millennium Development Goals. The identified goals are classified under three thematic areas: (i) Private Sector-led Competitiveness, (ii) Human Resource Development and (iii) Good Governance. The objectives and strategies under each of the thematic areas are presented in Table 6.5.

Development Goals

High incidence of poverty is a major development challenge confronting the Nanumba North District. This is manifested in the areas of food security, low income levels, high unemployment, low literacy rates, poor health and general insecurity. However, views from the district authorities as expressed in the District's Medium Term Development Plan (2006-2009) indicate that the district has potentials to overcome these challenges. A typical resource cited in support of this assertion is the large tract of arable land and the grazing fields suitable for crop and livestock production

In an effort to overcome the high poverty incidence, the assembly has aligned its development priorities to the pillars of the main development policy frameworks in Ghana. Under the guidance of the National Development Planning Commission (NDPC), the priorities of the Nanumba North District are set in line with the targets and goals under

Table 6.5: Priorities and Specific Objectives of Nanumba North District Medium-Term Development Plan, 2006–2009

Thematic Area	Sub-sector Goal	Specific Objectives	Strategies
1. Private Sector-led Competitiveness <i>Main Goal: To Develop and promote the private sector as the engine of growth through organized and vibrant associations</i>	Agriculture: Improve agricultural productivity	<ul style="list-style-type: none"> Facilitate increase in food crop production. Ensure food availability at household level. Enhance material availability for industry. Facilitate effective and efficient market for agricultural produce. Facilitate effective and efficient input supply and distribution system. Improve extension service delivery. Control bushfire. HIV/AIDS control/gender mainstreaming in MOFA. 	<ul style="list-style-type: none"> Raising agricultural productivity. Addressing specific needs of farmers. Ensuring that farmers adopt environmentally sustainable approaches to natural resource use. Generating jobs and increasing income.
	Education: To improve upon the quality of teaching and learning in the district	<ul style="list-style-type: none"> Improve quality of teaching and learning. Improve good health and environmental sanitation in schools and educational institutions. Undertake vigorous enrolment and retention particularly among girls. Increase access to and participation in education and training and extend functional literacy facilities. Strengthen governance, planning and resource management in the education sector. Drastically improve the physical infrastructure in all parts of the district. 	<ul style="list-style-type: none"> Sponsor more students into teacher training colleges. Establish more schools and expand existing schools. Organize more in-service training for teachers. Strengthen capacity of parent/teacher associations and school management committees.
	Health: Improve access to quality health care	<ul style="list-style-type: none"> Increase geographical and financial access to basic health services. Better quality of health in all health facilities and during outreach. Improved efficiency in the health sector. Closer collaboration and partnership between the health sector and communities, other sectors and private providers both allopathic and traditional. Increase, equitably and efficiently distributed resources in the health sector. 	<ul style="list-style-type: none"> Establish 15 CHPS Compounds in the district. Designate all health facilities baby friendly. Implement NHIS in all health facilities. Build capacity of all staff through training. Improve surveillance. Increase number of supplementary feeding centres. Promote the use and availability of TIN and iodated salt.
	Water and Sanitation: Improve potable water supply and environmental sanitation	<ul style="list-style-type: none"> Provide improve access to potable water facilities on a sustainable bases. Provide improve access to household latrines. Put in place efficient and sustainable waste management system. 	<ul style="list-style-type: none"> Expand the overhead tank. Expand the pipelines to other communities. Mechanize one additional borehole and repair the broken one. Drill more boreholes.

3. Good Governance and Civic Responsibilities		<ul style="list-style-type: none"> • Ensure that people observe good personal hygiene. 	<ul style="list-style-type: none"> • Convert 50 pan latrines to VIP's. • Increases KVIP's from 11 to 30. • Provide 14 refuse containers. • Increase environmental officers from 8 to 24.
	Political governance: Ensure that all District Assembly sub-structures are made functional	<ul style="list-style-type: none"> • Ensure that all Area Councils and other sub-structures are made functional. • Construct and equip 2 Police stations. • Encourage women participation in local and national policies. • Organize awareness creation on outmoded cultural practices that militate against women advancement (e.g. widowhood rites). 	<ul style="list-style-type: none"> • Build capacity of the district assembly and its sub-structures. • Provide adequate logistics and infrastructure for effective running of the district assembly. • Provide effective motivation and encouragement for personnel of the district assembly. • Ensure effective monitoring and supervision. • Ensure effective evaluation of projects and report writing.

Resource Utilization and Constraints

Introduction

In defining resources, emphasis was placed on the use value of resources or ability of resources to satisfy human want and the improvements that the use of these resources brings into the living conditions of people. For people to realize the value of resources, they must have access to these resources with limited constraints. Constraints usually come in different forms such as environmental, institutional and socio-cultural. The chapter discusses how residents of Nanumba North district are utilizing the available resources of the district as well as the constraints limiting people's ability to utilize the resources.

Access and Utilization of Resources

Access to resources plays a very important role in improving the well-being of people and tackling poverty. Resource availability without access will make a limited impact in addressing poverty and improving the living standards of people. Generally, access to resources identified by households in the district is very high with over 95 per cent of all households indicating having access to the identified resources such as boreholes, schools, irrigation facilities, land, shea trees, *dawadawa* tress, river and streams, and markets. Improved access and utilization of boreholes for instance, can be attributed to the improvements in the provision of boreholes in many communities within the district. Access to boreholes has tremendously improved upon people's access to

improved water sources in the district. According to the 2008 ISSER Household Survey about 80.1 per cent of households have access to borehole facilities in their communities. Utilization of the resource has contributed significantly in reducing the incidence of guinea worm infestations in the district.

Land is another important resource with high access rate (98.5%) to households. Evidence from the community focus group discussion indicates that land ownership in the district is vested in traditional authorities and land is actually not for sale. People get access to land for various purposes such as building or farming by giving "cola" to the traditional authorities. Women within the communities do have access to land but there are some disparities in terms of land utilization between women and men. Women's utilization of land especially for farming purposes is mostly on small-scale bases compared to that of men.

With particular reference to markets, the 2008 ISSER Household Survey revealed that, it takes 36.5 per cent of households between 15–29 minutes to reach the nearest food market to either sell their farm produce or to buy necessary items with the most popular means of access being on foot (40.5% of households). Also, 26.5 per cent of households reach the nearest food market within 0–14 minutes with 32.7 per cent travelling by foot. On the other hand, 17.5 per cent of households reach the nearest food market in over 60 minutes with 56.2 per cent travelling by a motor vehicle.

Ownership plays a very important role in determining who has access to resources and the use rights that goes with the particular resource. According to the 2008 ISSER Survey, 40 per cent of households identify communities as owning boreholes while 36.5 per cent identify traditional authorities as owners of boreholes in the district. With regard to schools, 82.3 per cent of respondent households identify government as the main owner of schools

while 15.6 per cent identify local communities as owning schools in their communities. On ownership of shea trees 83.3 per cent of respondents perceive the local community as owner with 54.5 per cent also perceiving traditional authorities as owners of land as a resource in the district (Table 7.1). With the different ownership structures to resources such as schools, health facilities, land and boreholes, access and utilization is still very high among households in the district.

Table 7.1: Ownership of Selected Resources (%)

Resource type	Community	Traditional Authority	Government/ DA	NGO	Extended Family	Household
Borehole	40.5	36.5	6.8	0.0	0.0	0.0
Schools	15.6	2.1	82.3	0.0	0.0	0.0
Shea trees	83.3	0.0	0.0	0.0	16.7	0.0
Roads	0.0	0.0	100	0.0	0.0	0.0
Land	36.4	54.5	0.0	0.0	9.1	0.0
Health facilities	10.0	0.0	90.0	0.0	0.0	0.0
Markets	33.3	66.7	0.0	0.0	0.0	0.0

Source: ISSER Household Survey, 2008

Household perception about the relevance of the different kinds of resources is very high as the resources contribute immensely in bringing about improvements in the living conditions of people. Resources such as shea trees, irrigation facilities, electricity and roads are found to be very relevant to all households (100%) in the district while 85.1 per cent and 78.1 per cent of households perceive boreholes and schools to be very relevant (Table 7.2).

Payment for the use of resources is very important in determining access to and utilization of resources. In instances where the cost of accessing a particular resource is way beyond the means of average households, utilization of the resource in these households is likely to be limited. When this happens, the chances of the households utilizing the resource to bring about improvements in their living conditions are likely to be restricted.

Table 7.2: Relevance of Resource to Household (%)

Resource type	Very Relevant	Relevant	Not Relevant
Borehole	85.1	12.2	2.7
Schools	78.1	12.5	9.4
Shea trees	100	0.0	0.0
Irrigation facilities/ dams	100	0.0	0.0
Electricity	100	0.0	0.0
Road	100	0.0	0.0
Land	90.9	9.1	0.0
Health facilities	100	0.0	0.0
Market	100	0.0	0.0
Shrine	100	0.0	90.0

Source: ISSER Household Survey, 2008.

The 2008 ISSER Household Survey revealed a clear divide in terms of payment for the use of boreholes or pipe borne water resources with about 60 per cent of households indicating paying for the resource while the remaining 40 per cent pay nothing. All households (100%) pay for the use of electricity whilst 88.9 per cent indicated

paying for using health facilities. Over 90 per cent of households do not pay for the usage of land in the district. A sizable proportion (66.7%) alluded to paying for the use of market facilities in their communities with the remaining 33.3 per cent indicating not paying (Table 7.3). In as much as payments for the use of these resources is very important, especially in maintaining them, where the payments that goes with the use of the resources is beyond the means of average households, access to and utilization of these resources will be limited.

Table 7.3: Payment for the Use of Resources (%)

Resource Type	Pay for Resource Usage	Do not Pay for Resource
Borehole/pipe	40.5	59.5
Schools	39.6	60.4
Shea trees	16.7	83.3
Irrigation facilities/dams	100	0.0
Electricity	100	0.0
Road	16.7	83.3
Land	9.1	90.9
Health facilities	88.9	11.1
Market	66.7	33.3
Shrine	10.0	90.0

Source: ISSER Household Survey, 2008.

Table 7.4: Willingness to Pay for the Use of Resources

Resource type	Willing to Pay for Resource Usage	Not Willing to Pay for Resource Usage
Borehole/pipe	42.5	57.5
Schools	61.1	38.9
Shea trees	0.0	100
Road	20	80
Land	0.0	100

Source: ISSER Household Survey, 2008.

Willingness to pay for the use of specific resources is generally diverse among households. According to the 2008 ISSER Survey, 61.1 per cent of households are willing to pay for utilizing educational facilities such as schools (Table 7.4). This

high proportion can be attributed to the value that community members or households place on education as a way of addressing or bringing about improvements in the poverty situation in the district. About 58 per cent of households are not willing to pay for the use of boreholes and pipe-borne water supply. All households surveyed are unwilling to pay for the use of land and this can be explained by evidence from the community focus group discussions which revealed that land is not for sale in the district.

Constraints to Resource Utilization

Constraints usually serve as challenges that hinder the full utilization of resources for improving the living conditions of people. Constraints often come in the form of natural or environmental, technical, financial and physical.

Declining Soil Fertility

A typical constraint is the declining soil fertility caused by the use of inappropriate farming practices such as shifting cultivation, continuous cropping, ploughing, ridging and planting across the slopes, over-grazing, indiscriminate agrochemical use and felling of trees and bushfires. These practices are causing severe environmental degradation leading to declining soil fertility and low crop yields. Farmers within the district in an effort to increase agricultural productivity resort to increasing farm sizes and this is also contributing to the destruction of vegetative cover and land degradation.

Crop Type and Farming Practices

Constraints to resource utilization in the district also come from the type of crops cultivated by farmers. Most farmers are involved in food crop cultivation which is

often cultivated intensively and this result in land degradation. Yam and cassava which are the major root crops cultivated in the district destroys the land at faster pace as a result of the fact that yam and cassava are deep feeders and easily exhaust the soil of its nutrients, rendering the land unproductive. The cultivation of yam in particular requires virgin land, which leads to the destruction of many trees and the vegetation resulting in deforestation. It also encourages shifting cultivation.

Over Dependence on Rain-fed Agriculture

The over dependence on rain-fed agriculture and the lack of irrigation facilities in the district are making it extremely impossible to farm all year round. The rainfall is irregular and total amount of fall is diminishing over the years. This makes it difficult for farmers to farm throughout the year and also make good yields.

Limited Use of Improved Seeds

The inadequate use of certified seeds constitutes a major constraint to resource utilization. Most farmers use their own seeds and this has the propensity to build up endemic pests and disease situations. According to the 2008 ISSER Household Survey, 88.0 per cent of farming households used traditional seeds in 2007 and this reduced marginally to 86.2 per cent in 2008. Over 80 per cent of farming households used their own seeds in 2007 and 2008 as against 3.7 per cent and 6.0 per cent for MOFA provided seeds respectively (Figure 7.1). The limited use of improved seeds as can be seen in Figure 7.2, contributes to low yields and high post-harvest losses among many of these farmers.

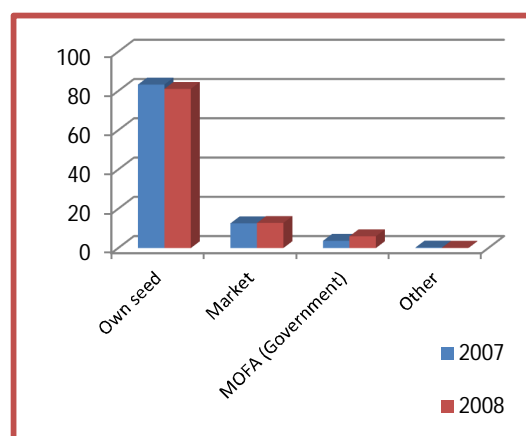


Figure 7.1: Seed Sources Used by Farmers, 2007 and 2008.

Source: ISSER Household Survey, 2008.

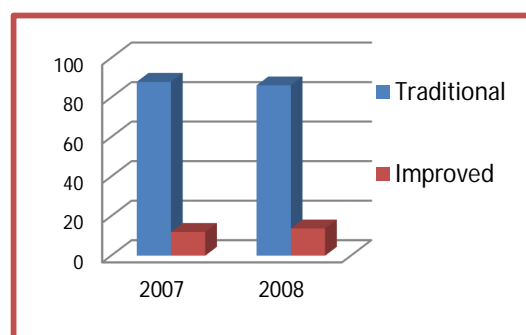


Figure 7.2: Seed Types Used by Farmers, 2007 and 2008.

Source: ISSER Household Survey, 2008.

Lack of Appropriate Storage Facilities

The use of inappropriate storage structures, and the lack of processing, treatment as well as preservation technologies are other constraining factors to resource utilization in Nanumba North district. In 2007 and 2008, 53.6 per cent and 52.3 per cent of farming households stored their harvested products in off farm barns whilst 10.2 per cent and 6.0 per cent respectively stored their products underground (Figure 7.3). This practice exposes the harvested products to pest and mice infestations and thereby contributing to heavy post-harvest losses among farmers. Post harvest losses kills the initiative of farmers as well as contributing to the loss of revenue to farmers.

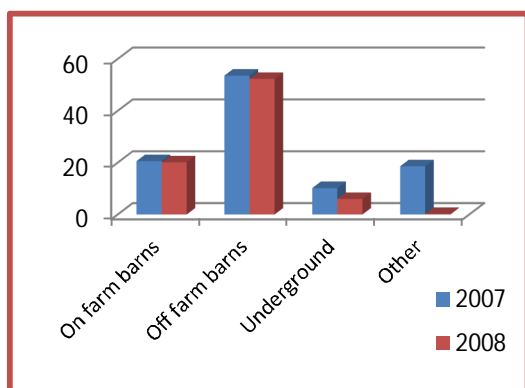


Figure 7.3: Storage Sources for Harvested Farm Products, 2007 and 2008.

Source: ISSER Household Survey, 2008.

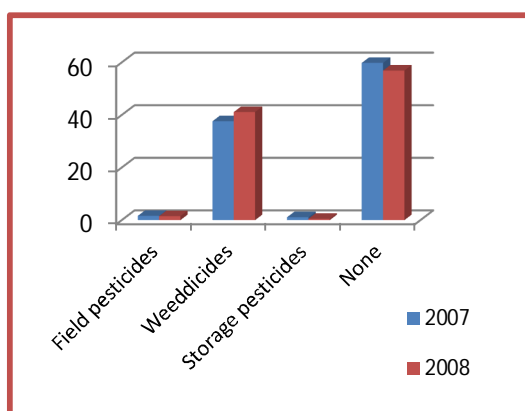


Figure 7.4: Type of Agrochemicals used by Farmers, 2007 and 2008.

Source: ISSER Household Survey, 2008

Some fishermen use poisonous substances such as DDT, dynamite and other unlawful fishing methods such as bamboo and basket and small and unapproved mesh sizes to catch fish and this is contributing to depletion of fish population in the rivers, streams and other water bodies in the district.

Limited and Incorrect Agrochemical Usage

The use of agrochemicals to improve production is quite low among farming households. The 2008 ISSER Household Survey revealed that 59.8 per cent of households do not use any agrochemical in their farming activities compared to 56.9 per cent in 2007. Most of the farmers that use agrochemicals rely heavily on weedicides

with less than 2 per cent in 2007 and 2008 using field and storage pesticides respectively (Figure 7.4). Because of the high levels of illiteracy, especially among farmers, some farmers who use agrochemicals do not apply these chemicals correctly, which ends up affecting their output.

Increasing Cost of Production

The soaring production costs as a result of the rising cost of farm inputs, such as fertilizer and pesticides and other agrochemicals prevent farmers from using such inputs and this contributes to low productivity among farmers. In 2007 for instance, 53.4 per cent of farming households did not use fertilizer in their farming activities but this increased marginally to 57.2 per cent in 2008. Majority of the households (82% in 2007 and 65.9% in 2008) that use fertilizer obtained the fertilizer from the open market by buying from private shops and dealers. The Ministry of Food and Agriculture supplied 15.6 per cent of farming households with fertilizer in 2007 and this increased to 32.9 per cent in 2008 (Table 7.5). This indicates that an increasing number of farming household are obtaining their fertilizer supplies from the MoFA where the quality of inputs is assured and the cost of inputs is relatively better than the open market rates.

Table 7.5: Source of Fertilizer Used by Farmers, 2007 and 2008

Fertilizer Source	2007	2008
Market (Dealers & Private Companies)	82.2	65.9
NGO Development Project	1.1	0.0
MoFA Development Project	15.6	32.9
Own Animal	1.1	1.2

Source: ISSER Household Survey, 2008.

Financial Constraints

Financial constraints constitute one of the major challenges confronting resource utilization in the district. With limited

funding, it becomes difficult for most households to expand their economic activities and also explore new ventures that will bring about improvements in their well-being. Limited funding also restricts the ability of the district assembly to improve upon the services that will lead to improvements in the living standards of the population. According to the ISSER Survey conducted in 2008, about 40 per cent of households cited financial constraints as the most difficult challenge confronting their economic activities. The financial challenges cut across both rural and urban areas as well as both agricultural and non-agricultural activities. The difficult financial situation confronting most households can be attributed to the high incidence of poverty in the district. The lack of collateral security, strong and well organized farmer-based organizations, and inadequate existence of rural banks are the sources of financial constraints.

Lack of Diversification

Most households in the district have not diversified their production activities and this is particularly common with households engaged in agricultural production. Despite the tremendous amount of opportunities in the production of non-traditional export commodities such as grass-cutter, rabbits, snails, mushroom, beekeeping, teak, cashew and woodlots, the ISSER 2008 Survey revealed that most farmers are still engaged in the production of traditional food crops such as yam, maize, groundnuts, cassava, millet, guinea corn, sorghum and soybeans.

Within the livestock sector, production has also been centred mainly on cattle, sheep, goats, guinea fowl and chicken. The limited attention given to the cultivation of non-traditional products implies that utilization of these resources that will bring about improvements in the living conditions of the population is limited.

Investment Opportunities and Risk Factors

Introduction

Investments at both the macro and micro levels has the greatest potential of contributing immensely towards meeting the MDGs. Investments can contribute in stimulating economic activities and expanding employment generation. With expansion in economic activities and employment generation, extreme poverty can be eradicated through improvements in household income, and parents will be able to afford the cost of sending their wards to school and thereby according these children opportunities for better livelihoods in the future. The expanded economic activities and employment generation will accord women the opportunity to participate in the labour market and thereby help in promoting gender empowerment and equality. Government investments within the health-care and water and sanitation sectors, complemented by improvements in employment opportunities has the potential of reducing child mortality, improving maternal health, contributing enormously in the fight against HIV/AIDS, malaria and other diseases.

Investment Opportunities

The agricultural sector policies under Ghana's MTDPs aim at achieving sustained increase in agricultural productivity and output to support industry and provide stable income for farmers; ensuring food security for all and increase the access of the poor to

adequate food and nutrition; and promote the development and strengthening of the requisite institutional capacity to support increased productivity. The main agricultural objectives under the District's Medium Term Plan, 2006–2009 is to facilitate an increase in food crop production, ensure food availability at the household level, enhance raw material availability for industry, facilitate effective and efficient market for agricultural produce, facilitate effective and efficient input supply and distribution system, improve extension service delivery and control bushfires.

The agricultural sector is the most important economic activity for the Nanumba North District. The sector employs 65.5 per cent of the economically active population in 2008 and crops grown include mostly food crops such as yam, maize, cassava, sorghum, groundnut, soybean and cowpeas. Aside the production of food crops, livestock rearing such as sheep, goats, cattle and local poultry constitutes important livelihood activity in the district. Investment opportunities are unlimited in the district and this is aided by favourable climatic or physical conditions, land availability and abundant raw material base.

Favourable Physical or Climatic Conditions for Investment

The district has one main relatively heavy and stable raining season compared to the rest of the Northern region and this favours

single cropping. The rainfall often contributes to overflow of many streams and rivers as well as surface run-off in many parts of the district. The mean annual rainfall ranges between 1050 mm to 1500 mm and this is sufficient to support and sustain plant life and agricultural activities.

Nanumba North district has a humid climatic condition especially at the end of the dry season which provides a suitable atmosphere for drying and storage of agricultural products. The vegetation type is the Guinea-Savannah vegetation with tall grass interspersed with draught and fire resistant trees. The vegetation abounds with economic tree species such as shea, *dawadawa* and baobab. It provides enough grass for grazing.

The savannah glycols soils found along the major rivers and drainage courses are of medium size textured and moderately well drained. These soils are suitable for the cultivation of a wide variety of crops such as cereals, roots, tubers and legumes generally. The Savannah ochrosols found to the East and the South-Western part of the district through the North is supportive of large-scale agriculture. The Ground water laterites usually found on the summit of the upland areas are also suitable for forestry and conservation programmes.

On the whole the climatic conditions and vegetation cover of the district presents tremendous amount of potentials for the production of food crops such as sorghum, groundnuts, cowpeas and soybeans on a large-scale basis. The location of the district, lying within the forest-savannah transition zone provides favourable conditions for the cultivation of many crops cultivated in other parts of the country, such as oil palm, plantains, bananas and coconuts. These crops can be grown in appreciable quantities in the wetland areas of the district.

There is great potential for fish farming in the rivers and streams within the district. Examples of these include the River Oti,

Daka, Kumar and Kumbo rivers and their tributaries which can be dammed and dug outs created for fish farming. The river Daka spans 145km of the western border of the district with East Gonja while the River Oti meanders north south across the eastern part of the district with a total of 85 km within the district. The rivers and streams in as much as providing tremendous opportunities for fish farming, also provide great potential sources for drinking water, inland transportation and irrigation development. The potentials for irrigation development when fully realized offer avenues for rice and dry season vegetable production especially in the flood plains and wetlands at the Sabonjida, Juo, Jua, and Kalegu valleys.

Investment Opportunities within the Export Sector

There is great potential for export promotion of the major crops produced in the district such as yam, soybeans, cashew, groundnut, cowpea and pawpaw (papaya). These products could also serve as raw materials that can be processed for exports or to serve local market. Typical instances include yam which can be processed into flour; cassava into chips, gari, and industrial starch; sheanut into butter; groundnuts into oil; and soybean into oil, wean mix and cake.

Investments at the Household Level

Generally, investments (in the agricultural and non-farm sectors) are very low at the household level.

Agricultural Investments

Farmers within the district have made little investments on their farms that will bring about increases in productivity and consequent improvements in living conditions. Of all the farming households

surveyed for in 2008, only a small percentage has actually invested in improved seeds. In 2008 for instance, 14.9 per cent of farming households invested in improved seedlings compared to 13.2% in 2007. Investments in improved seedlings are higher among farmers in the urban and semi-urban communities compared to the rural communities (Table 8.1).

Table 8.1: Investments in Seeds Used by Farmers, 2007 and 2008

Seed type	Urban	Semi-Urban	Rural	Total
2008				
Traditional	73.8	72.0	88.2	85.1
Improved	26.2	28.0	11.8	14.9
2007				
Traditional	76.5	74.0	90.0	86.8
Improved	23.5	26.0	10.0	13.2

Source: ISSER Household Survey, 2008.

This can be attributed to the source of the improved seedlings. Most of the farming households that have invested in improved seedlings purchase seedlings from private dealers most of whom are located in the urban communities, especially in Bimbila. Access to improved seedlings is therefore relatively easy for farmers in the urban communities compared to farmers in the rural communities of the district.

Beside the low investment in improved seedlings, investments in fertilizer, which brings about improvements in crop yields, is also low among farmers. According to the 2008 ISSER Survey, over 50 per cent of farmers in 2008 and 2007 made no investments in fertilizer on their farms. Investment in fertilizer is relatively higher among farmers within the urban communities compared to farmers in the semi-urban and rural areas (Table 8.2). This can be explained by the relative ease of access to fertilizer in the urban communities compared to the rural communities of the district. Majority of the farmers who have made investments in fertilizer have mostly invested in compound and ammonia fertilizer with only a small proportion investing in organic fertilizer.

Table 8.2: Investments in Fertilizer (%)

Fertilizer Type	Urban	Semi-Urban	Rural	Total
2008				
Compound	56.7	9.1	22.0	26.9
Ammonia	16.7	27.3	19.1	19.2
Organic	10.0	0.0	0.0	1.6
None	16.7	63.6	58.9	52.2
2007				
Compound	56.7	16.7	20.3	25.9
Ammonia	13.3	25.0	23.1	21.6
Organic	6.7	0.0	0.0	1.1
None	23.3	58.3	56.6	51.3

Source: ISSER Household Survey, 2008.

Table 8.3 Investment in Agrochemicals (%)

Fertilizer Type	Urban	Semi-Urban	Rural	Total
2008				
Weedicides	73.9	72.7	41.1	48.1
Storage pesticides	0.0	0.0	0.8	0.6
None	26.1	27.3	58.1	51.3
2007				
Weedicides	71.4	80.0	36.1	44.0
Storage pesticides	0.0	0.0	1.7	1.3
None	28.6	20.0	62.2	54.7

Source: ISSER Household Survey, 2008.

Investment in agrochemicals is low among farmers in the district. In 2008, 51.3 per cent of farmers made no investment in agrochemicals compared to 54.7 per cent in 2007. Investment in agrochemical is relatively higher among farmers in urban and semi-urban communities compared to farmers in the rural communities (Table 8.3). This trend can also be attributed to the relative ease of access to farm inputs in the urban and semi-urban areas compared to the rural areas. Most farmers obtain their supply of farm inputs from the dealers and private sellers, most of whom are located in the urban communities of the district. Most of the investments in agrochemicals have gone into weedicides with less than 1 per cent of farmers in 2008, investing in storage pesticides.

Non-Farm Investments

Non-agricultural related investment among households is very low. According to the 2008 ISSER Survey, 17.6 per cent of all

households in the district have made non-farm investments over the past five years. Areas where households have invested include house building, house renovation, capacity building through training and education, transportation, and land purchase.

Investments in Land and Housing Development

Of the total number of households that have made investments in the district, 12 have invested in building a house and six have also done renovations on their houses. On the average, each household spent GH¢2023.33 on house building whilst an average sum of GH¢235.00 per household was spent on house renovation. However, majority (75.3%) of the households that made investments in house building are located in the rural areas with 16.7 per cent and 8.3 per cent in the urban and semi-urban areas respectively.

Although the community Focused Group Discussion (FGD) indicated that land is not sold in the district, the 2008 ISSER Survey revealed six households purchasing land in the district. The average value of this investment per household is GH¢336.7 with 66.7 per cent of these households being located in the rural communities and the other 33.3 per cent being located in the urban communities.

Investments in Education and Training

Regarding capacity building, 12 households invested in various forms of education and training programmes. The average expenditure on capacity building per household over the past five years is GH¢408.30. About 67 per cent of households that invested in training and education are located in the urban communities and the remaining 33.3 per cent being located in the rural communities.

Transport and Other Non-Farm Investments

Only three households, according to the 2008 ISSER Household Survey, have invested in transport over the past five years and the average value of investments in this area per household is GH¢110.00.

About 18 per cent of all households belong to associations for which they have committed resources of various kinds, both cash and non-cash. Of these households, 75 per cent regularly make cash contributions with only a few households (2.8%) making non-cash contributions to these associations. The average value of contribution per household is GH¢ 5.50 and most households fall on these associations in time of difficulties.

Contributions to Community Development Projects

Community development projects serves as grass-root interventions that bring about improvements in the living standards of people. About 59 per cent of households in the Nanumba North district have made contributions both cash and in kind towards community development projects in the district. Some of the projects that households contributed towards include road maintenance, community electrification, school building and water.

Table 8.4 Contributions to Community Development Projects

Type of Project	Average contribution per household (GH¢)
School building	4.00
School maintenance	4.40
Road maintenance	2.00
Electrification	10.70
Water	4.20

Source: ISSER Household Survey, 2008

The highest average contribution per household on community development projects is GH¢10.70 for electrification projects and the least is GH¢2.00 for road maintenance (Table 8.4). Other average contributions per household include GH¢4.00 for school building, GH¢4.40 for school maintenance and GH¢4.20 for water.

household farm to cope with flooding; cultivation of short derivatives and building of water reservoir to cope for the problem of drought; and weeding around the house and creation of fire belt to cope with the problem of bushfire.

Risk Factors and Environmental Hazards

The ISSER 2008 Survey revealed that over the past two years, some households have been exposed to various risks which have threatened livelihood activities and investments. Many of these risks are natural or environmental in nature and impacted negatively on the living conditions of affected households. The two most severe hazards that affected households over the past two years are windstorm and drought (21.0% and 20.4%) of households respectively. Other hazards that exposed households to risks include flooding (6.2%) and bushfire (5.7%). The impact of these hazards varies by the type of hazard.

However, the most common impact is the loss of crops and threats that this brings to household food security and incomes. As a result of the loss of crops, some households had to spend additional sums of money on new seedlings. Other negative effects of these hazards on households include removal of roofing, destructions of buildings, which consequently results in homelessness among households.

Interestingly, 63.6 per cent of households took no measure or strategy in coping with the problem of flooding, with 46.9 per cent and 33.3 per cent also taking no measure or strategy at all in coping with the problem of drought and windstorms respectively (Table 8.5). Measures taken to cope with the problem of these hazards include tree planting and rebuilding of houses with improved materials against windstorm; improved drainage system and relocation of

Table 8.5: Household Environmental Risks and Coping Strategies

Type of Environmental Hazard	(%)	Effect of Hazard	Coping Strategy
Flooding		Loss of crops	No measure
Yes	6.2	Destroyed building	Improve drainage system
No	93.8		Relocated to a different place
Total	100.0		
Windstorm		Removed roofing	Tree planting
Yes	21.0	Homelessness	Rebuilt with improved materials
Yes	79.0	Destroyed foodstuffs	No measure
Total	100.0		
Drought		Lost most crops	No measure
Yes	20.4	Poor yield or harvest	Cultivations of short derivative crops
No	79.6	Spent a lot of money on additional seeds	Investing in water reservoir
Total	100.0		
Bushfire		Lost most crops	No measure taken
Yes	5.4		Weeding around the house
No	94.6		Creation of fire belt
Total	100.0		

Source: ISSER Household Survey, 2008.

Summary and Recommendations

Introduction

The Government of Ghana signed up to the Millennium Development Goals (MDGs), which came into effect in 2000 and has since made conscious efforts at integrating the MDGs into the overall National Development Framework and poverty reduction in the country. Three development policy frameworks have since been produced — GPRS I (2003–2005) and GPRS II (2006–2009), and Ghana Development Agenda. Although considerable progress has been made towards achieving the poverty, hunger and education related MDGs, progress towards achievements within the health related targets have stagnated. Most often, assessments on the MDGs, are made based on national aggregate, which do not give a true reflection of what is happening at the regional and district levels. In order to make an accurate assessment of progress made in the district towards the MDGs, there is the need for a more disaggregated district level data. Hence the use of district level secondary data and ISSER's 2008 survey has enabled an analysis of the district's progress towards attaining the targets set.

Nanumba North District is a very poor district with a computed HPI of 75 per cent compared to 35 per cent for Ghana (*see* Appendix 1). However, the poverty situation is relatively higher in the rural compared to the urban communities.

In this concluding chapter, we summarize the contents of the report and advance policy recommendations for action.

Summary

The economy of the district is agriculture based and the sector is the most significant employer in the district, although there have been a declining trend in the proportion of the population employed by the sector over the past five years. For example, agriculture employs about 65.6 per cent of the economically active population in 2008 compared to 80.1 per cent in 2003. Production of root and tuber crops such as yam and cassava was fairly stable while the production of major cereals fluctuated over the period 2002–2006. The exception being maize and millet which achieved increasing production trends over the period 2004–2006. Production of leguminous crops such as groundnuts, soybeans and cowpeas were fairly stable from 2000–2003 with some fluctuations occurring over the period 2004–2006.

Generally, progress was very slow in the area of health-care although tremendous progress has been realized in the eradication of the guinea worm disease in the district. This progress has been achieved mainly due to some progress in the provision of potable drinking water in both urban and rural communities of the district. Over 80 per cent of the population now has access to safe drinking water and about 89 per cent of this proportion reaches the source of drinking water within thirty minutes. Significant progress has also been made in reducing infant mortality rate due to improvements in immunization programmes. However, maternal mortality has been deteriorating over the years (725 per 100,000 live births by the half year count of 2006) due to

limited access to health-care services especially within the rural communities of the district. Malaria still occupies the unenviable position of being the number one cause of morbidity and mortality within the district.

Progress within the education sector has been mixed. Steady progress has been achieved in the provision of kindergarten and primary schools whilst the number of senior high schools and teacher training colleges has consistently remained the same (one each) over a long period of time. Enrolment at the preschool level is low although steady progress has been achieved over the years. Considerable amount of progress has been achieved in enrolment rates at the primary school level but progress at bridging the gender gaps in enrolment has been slow. Gross enrolment rate for males compared to females was 125.5 per cent and 112.2 per cent for males and females in 2007/2006 respectively. Progress in enrolment rates at the junior high school and senior high school levels has been steady with very slow progress being realized in efforts towards bridging the gender gap in enrolments at both levels. Net enrolment rate for boys was 67.7 per cent and 49.0 per cent for girls in the 2006/2007 academic year.

The situational analysis of the resource endowment and investment opportunities within the Nanumba North district indicate that the district is endowed with a lot of resources both natural and physical that can be used to promote development and improve upon the poverty situation in the district. However, these resources have not been utilized effectively to generate adequate incomes that will bring about improvements in the average well-being of the population.

Generally, investment on household farms is very low. In 2008 for instance, only 14.9 per cent of all farming households

invested in improved seedlings on their farms compared to 13.2 per cent in 2007. Over 50 per cent of farming households in 2008 and 2007 made no investment in fertilizer. Progress on household investments in agrochemicals is very slow with 51.3 per cent and 54.7 per cent of households making no investments at all in agrochemicals for the same period respectively. Non-farm investment is also very low among households with only 17.6 per cent making investments in this area over the past five years. The number of households that made investments in land and housing developments over the past five years is very low — twelve (12) households invested in building a house, six (6) households invested in renovating their houses and another six (6) were able to acquire land, though, evidence from the community focus group discussion indicated that, land is not sold in the district. Regarding human resource development at the household level, twelve households invested in various training programmes leading to skills acquisition. About 59 per cent of households contributed regularly to community development projects. Some of these projects include community school building and maintenance, electrification, water and road maintenance.

Some constraining factors to resource utilization include the overdependence on rain-fed agriculture, limited use of improved seeds and fertilizer, limited and inappropriate use of agrochemicals, financial constraints, rudimentary farming practices such as shifting cultivation and continuous cropping leading to environmental degradation, lack of appropriate storage facilities and increasing production costs.

Over the past two years, some households were exposed to risks and environmental hazards that threatened livelihood activities, living conditions and

investments. Examples of these hazards include windstorms, drought, flooding and bushfires. These hazards contributed to loss of crops, removal of households roofing and destruction of household buildings. However, a lot of households affected by these hazards took no measures or strategies in coping, reduce or prevent the impact of these occurrences.

Recommendations

Agricultural practice in the district is heavily dependent on simple methods and technology and lacks the requisite skills and inputs to improve yields. In addition to this, poorly functioning markets for agricultural outputs have often led to post-harvest losses. There is therefore the need for the district's infrastructure to be developed to improve the storage, processing and marketing of farm products. There is also an urgent need for redesigning and innovating farming systems in a more sustainable manner. Creating the right synergy between labour, land and irrigated area will impact positively on the efficient use of farm resources that will bring about improvements in household incomes and living conditions.

Over a long period of time, farmers within the district have relied heavily on the production of food crops, which is weather dependent. This has exposed farmers to risks and uncertainties in the production process, which have affected household incomes and food security. To overcome this challenge, farmers should be encouraged and assisted by the Ministry of Food and Agriculture and the district assembly to go into the production of tree crops and non-traditional exports such as mangoes, pawpaw (papaya) and cashew as this will provide a reliable source of income for farmers. Success of the initiative will require wells or dams for watering to avoid stunting.

The role of extension services in typical farming communities is crucial for a viable agricultural production process. There is therefore the need for extension service personnel to be engaged closely with farmers. This calls for reduction in the farmer-extension officer ratio which will enable farmers to effectively utilize their services which will go a long way to improve production processes.

In as much as possible, there should be adequate provision of fertilizers and other chemical supplements, viable seeds and seedlings all at affordable prices to farmers. There is also the need for investment in irrigation facilities, dams and wells which will facilitate farming during the dry season.

Individual households should be encouraged and assisted to form groups and associations to engage in the production and processing of non-farm activities such as sheanut extraction and gari processing. With group formation, it will be relatively easy to secure funding for these production activities. This will eventually go a long way in addressing the unemployment challenges in the district. However, it is important to stress that marketing arrangements and improvements in road infrastructure are critical for the sustainability of these activities.

Any programme that aims at diversifying agricultural production activities and household income sources will require the necessary human resources to effectively manage these programmes. In line with this, there is the need for a comprehensive human resource development policy for the district. The District's Medium Term Plan throws some light on education and some training programmes but this is not comprehensive enough. The human development policy should be consistent with the broader development goals of the district and must be responsive to new economic developments. All

stakeholders should be involved in the formulation and implementation of the policy. The District's Medium-Term Development Plan has outlined an exhaustive list of targets over the life span of the plan, which aims to improve the living conditions of the people and reduce poverty, with some minimal amount of success. However, the overall success of these programmes depends on the ability of the district assembly to raise enough funds for implementation. The district assembly must be strengthened in order to develop the infrastructure which is critical to attaining the MDGs.

Appendix 1: Human Poverty Index (HPI-G)

The constructed human poverty index for the preparation of the District Human Development Reports (HPI-G) is similar to the UNDP's HPI-1 for developing countries in terms of two components: the aspects of knowledge and decent standard of living. However, the component that measures vulnerability to death at a relatively early age, the probability at birth of not surviving to age 40 is replaced with an index measuring regional under-5 mortality. In addition to this modification, HPI-G includes an indicator of access to health care services in the measure of decent standard of living. A household does not have access to health care services if household members are not registered on the National Health Insurance Scheme with the reason being that premiums are too high.

1. Measuring the regional under-5 mortality index

The index measures the gap between a region's under-5 mortality rate and the national target for under-5 mortality under the Millennium Development Goals, relative to the largest regional gap in the country. A regional index is used for the district because of lack of reliable data at the district level. The under-5 mortality rate for Ghana in 1993 was 119 deaths per 1000 live births and the MDG goal of reducing this by two-thirds translates to a target of about 40 deaths per 1000 live births (GSS 2003). According to the current GDHS study, Northern region's under-5 mortality rate is 137 deaths per 1000 live births (GSS 2008). The regional under-5 mortality index is calculated as follows:

Regional under-5 mortality index

$$= \frac{\text{region's current value} - \text{MDG target}}{\text{Current maximum value for all regions} - \text{MDG target}}$$

$$= \frac{\text{region's current value} - 40}{142 - 40}$$

2. Measuring deprivation in a decent standard of living

An unweighted average of two indicators is used to measure deprivation in a decent standard of living:

$$\begin{aligned} \text{Unweighted average} &= 1/3 (\text{population without sustainable access to improved water source}) \\ &\quad + 1/3 (\text{children under weight for age}) \\ &\quad + 1/3 (\text{population without access to health services}) \end{aligned}$$

3. Calculating the HPI-G

The formula for calculating the HPI-G is as follows:

$$\text{HPI} - \text{G} = [1/3(P_1^{\acute{a}} + P_2^{\acute{a}} + P_3^{\acute{a}})]^{\acute{a}}$$

Where

- P_1 = Probability at birth of not surviving to age 5, proxied by a normal regional under 5 mortality index (times 100)
- P_2 = Unweighted average of population without sustainable access to an improved water source, without access to health care services and children underweight for age

Appendices

P_3 = Adult illiteracy rate; and $\alpha = 3$

HPI-G Indicators	No. Per 1000 live births	Nanumba North Overall	Nanumba North Urban	Nanumba North Rural	Ghana Overall	Ghana Urban	Ghana Rural
Under 5 mortality							
Ghana 1990	119						
MDG target 2015	40						
Ghana 2008	80						
2008		Under 5 mortality index (NR)			Under 5 mortality index (GH)		
Northern Region	137	95.11	95.11	95.11	39.41	39.41	39.41
Maximum (in Ghana)	142						
Minimum (in Ghana)	50						
Standard of living		19.5	15.2	10.9	23.7	19	27.2
Without access to improved water		7.7	0.0	7.7	22.7	21.4	23.8
Underweight children		21.8	16.6	25.1	13.9	10.6	16
Without access to health services		29.0	29.0	0.0	34.4	25	41.7
Adult illiteracy rate		72.2	47.9	81.3	37.1	23	50.4
α	3						
GHPI-1		74.6	68.7	77.6	34.7	29.9	41.2

4. Results: HPI-G for the Nanumba North District

Appendix 2: A Compilation of Household Assets

Type of Asset	Proportion of Households with Ownership	Proportion of Females with Ownership
Motor Car	2.1	0.0
Motor Bike	30.2	3.2
Bicycle	83.1	8.3
Tractor	0.4	0.0
Truck	1.2	2.3
Household Furniture	34.0	24.2
Sewing Machine	17.4	44.9
Refrigerator/Fridge	8.8	6.1
Radio (without cassette)	56.4	6.7
Radio Cassette Player	37.1	9.9
Television	21.3	6.0
Video Recorder	10.8	2.2
Electric/Gas Stove	1.7	0.0
Electric Iron	7.9	0.0
Electric Fan	17.5	6.2
Blender	1.7	2.3
Mobile Phone	40.2	26.4
Canoe	1.3	0.0
House	69.0	6.5
Land for Farming	83.1	9.7
Land for other activities	28.7	7.1
Account with Non-Financial Institution	13.0	4.3
Shares in a Company	4.2	2.2
Treasury Bills	0.4	0.0
Jewellery	3.4	14
Cloth (dumas, lace, smock, kentey etc.)	45.0	69.8
Cattle	18.1	1.8
Sheep/Goats	47.7	13.0
Poultry	67.9	36.4
Non-farm Business Enterprise	14.2	16.0
Donkeys	0.0	0.0
Horse	0.4	0.0
Vodafone Fixed Line	0.8	0.0
Farm Tools	67.9	33.0
Cart	3.4	6.7
Corn Mill	2.5	2.2

Source: ISSER Household Survey, 2008.

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