UNITED REPUBLIC OF TANZANIA

MINISTRY OF LOCAL GOVERNMENT
AND
REGIONAL ADMINISTRATION

BAHI DISTRICT

SOCIO-ECONOMIC PROFILE

2008

Joint Prepared by:

Institute of Rural Development Planning

(IRDP)

and

Bahi District Council

July, 2010

BAHI DISTRICT

SOCIO-ECONOMIC PROFILE

2008

TABLE OF CONTENTS

FOREWORD

In order to carry out development planning process smoothly, availability of adequate and accurate data is of crucial important. Socio-economic situation and development constrains of an area can hardly be understood without adequate and accurate data. Similarly, potential areas for investment need to be explored by collecting adequate and reliable data. For this matter, efforts to gather adequate and reliable data are inevitable.

In this pursuit, Bahi District Council in collaboration with the Institute of Rural Development Planning Dodoma embarked on the preparation of the District Socio-Economic Profile as an attempt to create a data base which will facilitate investment and development planning in the district.

This document covers a wide range of data and information on geography, population, socio-economic parameters, social services, economic infrastructure and the productive sectors. It also

provides information on potential areas for investment in the district. Such data and information will prove vital to policy making, development planning, investing and further researching.

The district council management, wish to pay a tribute to staff of Bahi District Council; the team of Lecturers and Students of the Institute of Rural Development Planning Dodoma, who were involved in ensuring the successful completion of this work.

Frank T. Ernest

BAHI DISTRICT EXECUTIVE DIRECTOR

July, 2010

SECTION ONE

1. INTRODUCTION

1.1 Geographical location

Bahi District is one of the six districts of Dodoma Region. Other districts include Kondoa, Chamwino, Dodoma Municipal, Mpwapwa and Kongwa. The headquarters of the district is located in Bahi ward which is 50km away from Dodoma municipality and located close to the highway linking Singida and Dodoma region. Bahi district extends between latitude 4° and 8° South and between longitude 35° and 37° East. On the east, the districts share its boarder with Chamwino and Dodoma Municipal; Kondoa district on the north, Iringa region on the southwest, and Singida region (Manyoni district) on the west.

1.2 Land area

The district is estimated to have land area of 544,842 hectares. Overall computation shows that Bahi district land area is about 13% percent of Dodoma Regional. Out of the 544,842 hectares, 378,207 hectares (70%) are arable land. The area for arable land which is currently under use is 164,637(44%) indicating that large portion of land suitable for agriculture remains unutilized.

The distribution of the total land area of Bahi District is given in Table 2. Information in Table 2 shows that large proportion of the area is in Nondwa Ward. The Ward covers 18.3 percent of the total district area. On the other hand, Bahi Ward is the smallest of all with 2.0 percent of the total district area.

Table 2: Land Area in the District by Ward, 2009

Ward Name	Land Area (Ha)	% of Total District Area
Babayu	32,357	5.9
Bahi	10,960	2.0
Chali	19,330	3.6
Chibelela	13,561	2.5
Chikola	40,474	7.4
Chipanga	28,386	5.2
Ibihwa,	14,346	2.6
Ibugule	16,709	3.0
Ilindi	19,725	3.6
Kigwe	21,655	4.0
Lamaiti	30,659	5.6
Makanda	26,531	4.9
Mpalanga	20,824	3.8
Mpamantwa	27,762	5.1
Msisi	31,684	5.8
Mtita	15,763	2.9
Mundemu	16,272	3.0
Mwitikila	15,652	2.9
Nondwa	**99,928**	**18.3**
Zanka	42,264	7.8
Total	544,842	**100.0**

Source: Bahi District Council's Office, Dodoma 2008

1.3 Administrative Units

In most cases, Governments establishes administrative units with expectations that they will be used for keeping peace, order and promoting economic activities through the practices of good governance. Bearing this in mind Bahi district has been divided into four divisions with twenty wards and fifty six villages (Table 3).

Table 3: Administrative Units in the District, 2009

Divisions	**Wards**	**Villages**
Mundemu	6	18
Chipanga	5	17
Bahi	5	13
Mwitikira	4	8
Total	**20**	**56**

Source: Bahi District Council, 2008

1.4 Climate

Rainfall

Most part of Bahi district is semi arid characterized by low and erratic rainfall. Bahi district experiences one

rain season between November and April. The rainfall duration is usually very short and sometimes characterized with short period heavy storms leading to floods. Due to short rainfall duration, heavy water runoff and hence poor water infiltration is common in the area leading to less moisture reserve in soils. Rainfall ranges from 500 mm to 650mm per annum. The rain season is then followed by the long dry spell between the mid April to the beginning of November, characterised by dry winds and low humid that leads to higher evapotransipiration.

Temperature

Bahi district experiences both high and low temperature. The highest temperature is 31^0C while the lowest temperature is 18^0C. The cool dry season begins in June and always ends up in early September. Absence of cloud cover lowers the temperature in the night but also raise the day light temperature.

Winds

Winds blows across the district from East/south to northwest of the district; the wind is usually dry contributing to the semi-arid condition of the area. The wind speed increase in July with the strongest winds occurring on October. During the driest season the wind speed is higher as compared to the wet season.

1.5 Geographical features

1.5.1 Topography

Most part of Bahi district is flatlands with gentle slope hills and lowlands in some places. The district is raised to an altitude ranging between 560 -1200m above sea level. In the eastern part of the district there is Bahi lowland area. This area has a swampy characteristic which makes it suitable for paddy farming. As a result, Bahi is one of the popular districts for paddy production in Dodoma region. In the northwest part there is *Nondwa* and *Mchito* dam, while in the central part (Ilindi) there is a wetland endowed with salt. Relatively high altitude areas are

located in the northern part of the district wherein there is Chenene mountain ranges covered with dense forests.

Other part of the district is more or less flatland with undulating hills. The main river (seasonal) in the district is known as river Bubu, which flows from north to south-east and drain its water to Bahi Swamps. During rain season, many people around this river, catches fish as one of their livelihood strategy. Like most rivers in the area, many natural dams, wetlands and swamps in the district are seasonal. Some of these natural dams (non-salt natural dams) provide fishing ground to the Bahi population surrounding them.

1.5.2 Soil

Generally, the soil of Bahi district have shallow depth, moderate fertility, moderate organic matter content, and moderate to poor permeability leading to higher surface runoff. Soil salinity is a serious problem that

negatively affects crop growth in areas of Ilindi, Kigwe, Chikola and Bahi wards. The soil textural classes found in the district are as follows; Near to Iringa region (south west) and central part of the district the soil is dark grey and brown sand, and sandy loams. The other part of the district is characterized by brown loamy soil to dark grey clay sands and sand loams.

1.5.3 Vegetation

The vegetation of Bahi district is characterized by bush and thickets and scattered trees in some areas. The vegetation cover has been reduced by human activities such as agriculture, lumbering, bush fire, fuel wood and charcoal extraction, and grazing. Most hills and mountain ranges, steep slopes and protected forest reserve have large wood plants which forms good water shed protective cover.

1.5.4 Water

Bahi district drainage is characterized by seasonal rivers and swamps/wetlands. There are very few permanent rivers and swamps/wetlands in the district. Both seasonal and permanent water resources in the district are very potential to the community as they provide water for domestic uses, livestock, irrigation, and act as fishing grounds. Water resources located in different areas of the district are summarized in the Table 4.

Table 4: Distribution of rivers and swamps in the district by Division

Division	Rivers
Bahi	Kigwe, Msangambuye, Msolwa, Chisugala, Majuveni, Nkonkorale
	Chimpindu, chinzanchi, Chiwela, Bubu, Nghogwa, Kimavi, Mkwakwa
	Nchikole and masake.
Chipanga	Manyagwa, Mhola, Nholi,*Mzanje, Chisati, Lunyemba and Chipanga.
Mwitikila	Makomasenga,Rusimu,Ihugule,Lugombe,Igugu, *Mfangwe,Makola,Mtonga,Chilala,Makulu,And Mpunguzi
Mundemu	Fwadi,Kinyasungwi,Kibudibudi,Lulunde,Wanyagase,Kandamiza,Kasela and Bubu
Distribution of swamps in the District	
Division	**Swamps/Wetland**
Bahi	Nchenje,Chiswila,*Surungai,Ilindi,Mkalama,
	Mkakatika kwa ng'ombala, Udundamisi, and Nyambisi.
Chipanga	Tope, Kalama, *Nondwa, Ilundi, Mpululu, Mkalawe, Magobwe, Myambwe, Chisinzisa and Masaulwa.
Mwitikila	Funamia, Mfuko, Itumo, Ndulumaa, Msachile, Salabwe,Lebawa, Muhanga, Kisingisi, Mtonga, Lugalala, Nyungu and Fao
Mundemu	Mkalama, Choleo, Solowi, Magombwe, Mtinaye, Halo, Mase, Solo, Matitu,Kwamsute, Mundemu, Nala and Sulungai.

*Permanent river/swamp

1.6 Agro-ecological Zones

There are three main agro-ecological zones which support a variety of crops. Characteristics of these agro-ecological zones and crops they support are summarised in the Table 5.

Table 5: Agro-ecological zones in the district

Zone	Features of zones	Average Rainfall per annum	Soil	Crops
1	Very flat of undulating plain with low population. Almost entirely used for grazing except in west where there is tsetse fly. Rainfall is low and unreliable.	500mm	Reddish-brown loamy sands. Grey clay in depressions and dark greyish brown loams in hills to east	Only small part used for cultivation of crops like sorghum, millet and maize

2	Flat undulating hills in south. It is relatively densely populated as it is near Dodoma town	550-650mm	Reddish brown or dark loamy sands	Sorghum, millet and maize grown mostly in the north where rainfall is slightly higher, other crops include castor, groundnuts, tomatoes, onions and vines for cash.
3	Low lying area characterized by swampy areas in some places	550-650mm	Reddish-brown loamy sands, dark grey clays near swamps	Very popular in paddy cultivation. Other crops include maize, millet, sorghum, groundnuts, castor, onion and tomatoe.

1.7 Demographic Features

1.7.1 Population Size and Growth

According to 2002 population census, population of Bahi district was recorded to be 178,981 people who accounted for 10.5% of total population of Dodoma region. Annual population growth rate between 1988 to 2002 for Chamwino and Bahi districts (the then Dodoma rural district) was estimated to be 1.6%. This was lower than the regional average of 2.3% indicating relatively low population growth rate in the area compared to other district in the region (Table 6).

Table 6: Bahi district population growth rate in comparison with other district in Dodoma region

District	Growth rate (1988/2002)
Dodoma	3.4
Kondoa	1.7
Mpwapwa	3.4
Kongwa	2.4
Chamwino	1.6
Bahi	**1.6**
Dodoma region	2.3

Source: URT, (2002)

Based on the above growth rate, population of Bahi district is expected to increase from 178,981 in the year 2002 to 203,216 in the year 2010; which still depict low population as compared to the rest of the district in the region (Table 7).

Table 7: Bahi District population size and growth as compared to other districts in Dodoma region

District	Population size								
	2002			2006*			2010*		
	M	F	Total	M	F	Total	M	F	Total
Dodoma	157,469	166,878	324,347	180,002	190,757	370,759	205,759	218,054	423,813
Kondoa	213,724	216,100	429,824	228,632	231,174	459,806	244,580	247,299	491,879
Mpwapwa	123,292	131,208	254,500	140,934	149,983	290,917	161,101	171,445	332,546
Kongwa	120,098	129,662	249,760	132,049	142,565	274,614	145,190	156,751	301,941
Chamwino	124,509	137,075	261,584	132,666	146,061	278,727	141,368	155,635	297,003
Bahi	**84,412**	**94,569**	**178,981**	**89,945**	**100,768**	**190,713**	**95,842**	**107,374**	**203,216**
Total	**823,504**	**875,492**	**1,698,996**	**901,921**	**958,859**	**1,860,780**	**987,804**	**1050,164**	**2,037,968**

Source: URT, (2002) *Based on population projection

1.7.2 Population Density

Data for population census conducted in the area (Chamwino and Bahi district combined) in 1988 and 2002 indicated that population density in the area in 1988 was 25 people per square kilometres; indicating that the area is the least populated compared to other districts in the region. In 2002, the population density increased to 31 people per square kilometres. Furthermore, based on projected population size, population density in Bahi district in 2008 is estimated to be 36 people per square kilometres. However, the figure is expected to be much higher in trading centres such as Bahi Sokoni and Mwanachugu centre located in Bahi ward.

1.7.3 Population Composition and distribution

Data presented in Table 8 indicates that in all years female are much more than male residents. In 2002 for instances, female accounted for more than 52% of all Bahi residence. Table 8 further shows that Bahi is the most populated ward compared to others.

Table 8: Bahi district population distribution by wards and sex

Ward	2002*			2006**			2010**		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Babayu	3,622	3,890	7,512	3859	4145	8004	4112	4417	8529
Bahi	7,002	7,198	14,200	7461	7670	15131	7950	8173	16123
Chali	4,703	5,137	9,840	5011	5474	10485	5340	5833	11173
Chibelela	4,013	4,741	8754	4276	5052	9328	4556	5383	9939
Chikola	6,086	6,999	13,085	6485	7458	13943	6910	7947	14857
Chipanga	3,738	4,433	8,171	3983	4724	8707	4244	5033	9277
Ibihwa	4,334	4,922	9,256	4618	5245	9863	4921	5588	10509
Ibugule	3,068	3,688	6,756	3269	3930	7199	3483	4187	7670
Ilindi	3,408	3,893	7,301	3631	4148	7779	3870	4420	8290
Kigwe	6491	7402	13893	6917	7887	14804	7370	8404	15774
Lamaiti	4,423	4,988	9,411	4713	5315	10028	5022	5663	10685
Makanda	2,751	2,902	5,653	2931	3092	6023	3123	3295	6418
Mpalanga	3,663	4,404	8,067	3902	4693	8595	4159	5000	9159
Mpamantwa	4,195	4,614	8,809	4470	4917	9387	4763	5239	10002
Msisi	4,189	4,571	8,760	4464	4871	9335	4756	5190	9946
Mtitaa	3,437	3,847	7,284	3662	4099	7761	3902	4368	8270
Mundemu	2,838	3,178	6,016	3024	3386	6410	3222	3608	6830
Mwitikira	2,599	3,044	5,643	2769	3244	6013	2951	3456	6407
Nondwa	5,706	6,407	12,113	6080	6827	12907	6479	7275	13754
Zanka	4,146	4,311	8,457	4418	4594	9012	4707	4895	9602
Total	**84,412**	**94,569**	**178,981**	**89945**	**100,768**	**190713**	**95,842**	**107,374**	**203,216**

Source: * URT, (2002) ** Based on population projection

Population distribution by sex and age groups is presented in Tables 9. The data indicates that sex ratio (male per female) in the area increased slightly from 0.87 in 1988 to 0.90 in 2002. Regarding age structure, people that are not in the age of labour force in the area (i.e. those in categories of under 15 and above 64 years of age) comprised 50.6% of total population, which corresponded to high dependence ratio of 1.024. Meaning that, for every 100 people in labour force, there were 102 dependants.

Table 9: Population distribution by sex (Bahi & Chamwino)

Variable	1988				2002 Projection			
	Male	Female	Total	M/F	Male	Female	Total	M/F
Population	164,281	188,612	352,893	0.87	207,706	231,160	438,866	0.90
Population per km^2			25				31	

Source: URT, 2003

Data for population census of 2002 indicates a proportion of people who are not in a labour declined to 49.3% of total population which corresponded to a relatively low

dependence ratio of 0.96 compared to that of a previous census. This means that number of dependants for every 100 people in a labour force declined from 102 in 1988 to 96 in 2002. Compilation of data collected in 2008 from a random sample of 2,562 households in the district indicates dependence ratio to be 0.95, meaning that the ratio has remained almost the same since 2002. Generally, although still unacceptably high, data shows that there was some improvement with regard to dependence ratio from 1988 to 2008 (Table 10).

Table 10: Dependency ratio in various years

Year	Age (years)					Dependency ratio
	0-4	5-14	15-44	45-64	65+	
1988* (Bahi + Chamwino)	17.2	27.7	38.6	10.8	5.7	1.024
2002* (Bahi + Chamwino)	17.0	27.0	41.0	10.0	5.3	0.96
2008[a] (Bahi)	14.5	28.3	40.1	11.3	5.7	0.95

Source: *URT, 2003; [a]Survey, 2008

Data presented in Table 11 below shows Bahi district population by age and sex as per 2002 Tanzania population census. These data were used to prepare Bahi district population pyramid (Figure 1).

Table 11: Bahi District Population Distribution by age and sex

Age group	Male	Female	Total
0-4	14183	14487	28670
5-9	13451	13276	26727
10-14	11272	10522	21794
15-19	8893	9197	18090
20-24	5942	8381	14323
25-29	5412	7277	12689
30-34	5223	6399	11622
35-39	3987	4583	8570
40-44	3537	4120	7657
45-49	2519	2994	5513
50-54	2207	2833	5040
55-59	1853	2472	4325
60-64	1593	2388	3981
65-69	1452	1953	3405
70-74	1221	1762	2983
75-79	917	1010	1927
80+	750	915	1665
Total	**84,412**	**94,569**	**178,981**

Source: URT, (2002)

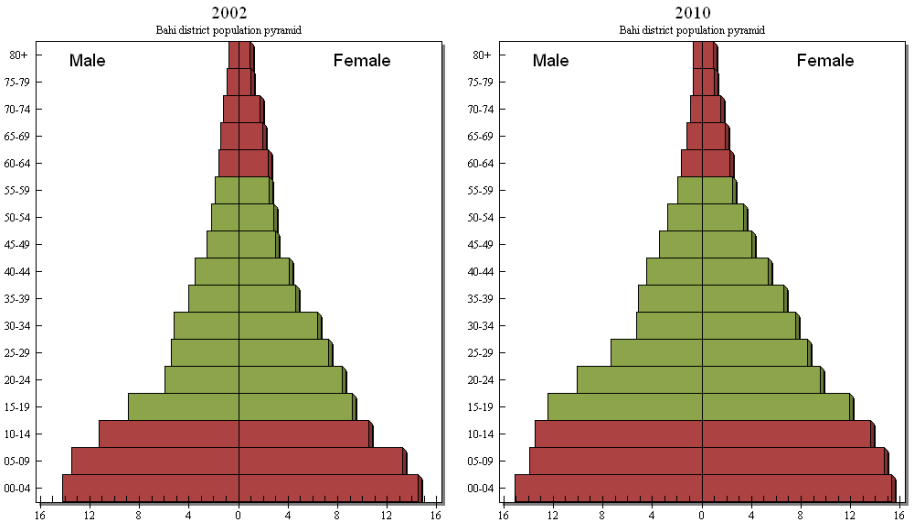


Figure 1: Bahi population pyramid (in thousand)

Figure 1 presents a population pyramid of two different years. However, all pyramids have wide base and narrow apex. This gives a common trend of most developing countries where there are fertility rate and dependent ratio are high. More so the similarity observed in the two pyramids implies that the high fertility rate and dependence ratio observed in 2002 will be sustained for some years to come.

1.7.4 Household size

Based on the 2002 Tanzania population and housing census, Bahi district had a total of 43,311 household; with an average household size of 4.1 (Table 12). Results from a survey conducted in 2008 in the district indicates that average household size have increased substantially form 4.1 in 2002 to about 5 people per households in 2008.

Table 12: Number of household and average household size by ward

Ward	2002		
	Population	House hold total	House hold average
Babayu	7,512	1,802	4.2
Bahi	14,200	3,329	4.3
Chali	9,840	2,618	3.8
Chibelela	8754	2,001	4.4
Chikola	13,085	3,438	3.8
Chipanga	8,171	1,893	4.3
Ibihwa	9,256	2,425	3.8
Ibugule	6,756	1,556	4.3
Ilindi	7,301	1,879	3.9
Kigwe	13893	3,833	3.6
Lamaiti	9,411	2,176	4.4
Makanda	5,653	1,372	4.1
Mpalanga	8,067	2,074	3.9
Mpamantwa	8,809	1,998	4.4
Msisi	8,760	1,995	4.4
Mtitaa	7,284	1,574	4.7
Mundemu	6,016	1,448	4.2
Mwitikira	5,643	1,404	4.0
Nondwa	12,113	2,645	4.6
Zanka	8,457	1,851	4.6
District Total	**178,981**	**43,311**	**4.1**

Source: URT (2002)

Information obtained from URT (2002) population and housing census further indicates that, in comparison with other Districts, Bahi district has the least number of household and small average household sizes. Table 13 indicates number of households and average household size in various districts in Dodoma regional.

Table 13: Number of household and average h/h sizes in Dodoma region by district in 2002

District	Household number	Average household size
Bahi	**43,311**	**4.1**
Chamwino	60,972	4.3
Kondoa	89893	4.8
Dodoma Urban	74914	4.3
Kongwa	50,877	4.9
Mpwapwa	56,563	4.5
Regional total	376,530	4.5

Source: URT (2002)

1.7.5 Ethnic Composition

1.7.5.1 Ethnic groups in the district

The dominant ethnic group in the district is *Wagogo* which account for more than 90% of the total population, followed by *Warangi* and *Wasandawe* located in the northern part. Other tribes include *Wasukuma* located in the eastern part and *Wamaasai* in the northwest.

1.7.5.2 Cultural practices in the district

Cultural practice practised in Bahi district includes polygamous marriage, female genital mutilation and circumcision of boys. These practices have negative impacts on social economic development of the district. Polygamous marriage for instance, results into having large family sizes which are difficult to manage in terms of provision of basic services; female genital mutilation (FGM) leads to transmission of diseases like HIV; and

boys circumcision is normally accompanied by ceremonies, which cost lots money and time.

Other cultural practices have to do with languages, beliefs, conflicts, gender, food and clothing. With regards to language, at least every person in the district is able to speak in two languages; the traditional one and the nation language – Kiswahili. Beliefs in ancestors and witch and wizards in the area do still exist. The main food eaten in the area include *Ugali* served with dried vegetables traditional known as *Mlenda.* The typical men and women normally wear black clothes known as *Kaniki.*

1.7.5.3 Housing conditions in the district

A survey conducted in the district in 2008 revealed that most of the households have houses which are in poor conditions. Out of the 3,414 houses from 3,124 interviewed households, 51.5% of the houses were found to have walls made up of mud and poles, 64% had been thatched with earth and grasses (Tembe), and 89% had earth floor. Houses with walls made with mud bricks

accounted for one-third of all houses, while those thatched with iron sheet accounted for a quarter of all houses. The conditions of houses in this district are given in Table 14.

Table 14: Distribution of houses by wall, roof and floor type

	Responses	Percent
Wall type		
Poles, sticks	397	11.6
Poles, mud	1757	51.5
Mud bricks	964	28.2
Burnt mud bricks	102	3.0
Cement blocks	69	2.0
Others	124	3.6
Total	**3414**	**100.0**
Roof type		
Grass	407	12.0
Corrugated iron sheet	817	24.0
Mud and grasses	2199	64.0
Total	**3414**	**100.0**
Floor type		
Earth	3033	88.8
Cement	377	11.0
Total	**3414**	**100.0**

1.7.6 Migration

Currently there is no adequate data on migration in the district. However, there are some movement of youths from rural areas in the district to urban areas within and outside the region (Dodoma) and inflow of people from other districts/regions in seek for pastures, water for livestock, fishing grounds, and arable land for farming.

SECTION TWO

2.0 DATA COLLECTION AND ANALYSIS

2.1 Introduction

This section shows the methodology used in data collection and the techniques applied in data presentation and analysis.

2.2 Data Collection

Secondary data were collected using check list. The check list enabled the team to extract useful information from among others, the internet, Dodoma regional profiles of various years, the then Dodoma rural profile and reports prepared by Ward Executive Officers and various departments at Bahi district. The collection focussed on the key sectors, sub-sectors and related linkages. The sectors were further concentrated on productive, social and economic; and cross cutting issues.

Primary data were collected using face to face guided interviews; the interview involved a total

of 3,124 households. Likewise, check list was prepared to guide data collection through observation. Issues that were observed include housing conditions, topography, status of natural resources and climatic conditions.

Both primary and secondary data were collected by IRDP students under the supervision of selected Lecturers and a representative from Bahi District Planning Office; prior to data collection, data collectors were given basic skills on how to extract data from secondary sources; and how to collect primary data by using the interview schedules and the check list.

2.3 Data Analysis

The data were analysed using Microsoft Excel and Statistical Package for Social Sciences (SPSS); where descriptive statistics were used. Results were summaries and presented in the form of charts, graphs and Tables. Population projections were based on the assumption that the growth rate will remain the same throughout the projection period. The population pyramids

were prepared by using Spectrum DemoProj prepared by USAID/health policy initiative.

SECTION THREE

3.0 DISTRICT ECONOMY

3.1 Introduction

About 80 percent of Bahi district economy comes from farming. The sector is managed by smallholder-farmers and most of them do not use improved farming practices and mostly depend on rain fed farming. As a result, yield per acre is relatively low. The district mainly cultivates maize, sorghum, bulrush millet, groundnuts, sunflower, paddy, Bambara nuts, cassava, sweet potatoes, tomatoes and to a lesser extent finger millet and grapes.

Apart from farming, livestock also have great potential of contributing significantly to the district economy. The common livestock are traditional cattle breed, sheep and goats. However, improved dairy cattle also form a source of income, especially in ward with urban characteristics. Besides livestock, forestry

products are also prominent sources of the district economy. The potential products include timber; honey and wax; charcoal and fuel wood from Chinene forest.

Fishing industry is also performed in the district as one of the sources of district economy. In addition, wildlife sector have potential to contribute a substantial amount of income to the district. Salt mining at Mpamantwa, Lamaiti, Chali, Kigwe and Ilindi wards; and gold at Mafurungu hills may largely contribute to the district economy.

3.2 District GDP and average income

According to 2002 progress reports, the then Dodoma Rural District which included Bahi and Chamwino District was estimated to have annual GDP of Tshs. 20,468,850,378/=. Based on the 2008 survey, majority of households in Bahi District are still poor with average income per household being estimated at Tshs. 427, 489/- per year.

3.3 Productive sectors

3.3.1 Agriculture

3.3.1.1 Arable farming

As noted before in this section, the district economy mainly depends on farming. Information obtained from District Agricultural Officer reveals that the sector employs more than 80% of the district population. Farming by most of the household is on subsistence basis. Information from district natural resource office (2008) indicates that 378,207ha, which is 70% of the total district area are suitable for agricultural activities (Arable land). The report further indicates that out of the total arable land only 164,637ha were under crop production. This area constitute to about 30% of total district area and 44% of total arable land.

Cultivated Areas of Major Food Crops

Analysis indicated that the total arable land under cultivation is decreasing from 292,639ha in 2003/04 to 171,023ha in 2005/06, signifying that people are losing interest in crop production due to among other reasons, persistent drought

and poor technology employed in farming (Table 3.1).

Table 3.1 Estimated Area (in ha) under major food and cash crops in the district 2003-2006

Crops	Cultivated area (Ha)		
	2003/2004	**2004/2005**	**2005/2006**
Millet	30,573	46,600	33,325
Sorghum	46,910	45,000	38,349
Maize	69,457	31,600	13,140
Paddy	3,034	3,400	`3,203
Cassava	75,200	65,000	28,548
Potatoes	2,060	4,800	2,630
Legumes	1,515	17,600	2,117
Pea Nuts	11,160	2,000	9,700
Groundnuts	45,320	24,000	19,909
Sunflower	3,560	20,000	2,708
Simsim	3,560	12,320	10,857
Grapes	150	200	40
Pigeon peas	140	120	9,700
Total	**292,639**	**272,640**	**171,023**

Source: Bahi District Council, 2008

Production of major crops in the district

The major crops grown in the district include Maize, Sorghum, Bulrush millet, groundnuts, sunflower, paddy, Bambara nuts, cassava, sweet potatoes and to a lesser extent finger millet and grapes. Cereals like Maize, Sorghum, Bulrush millet, Finger millet, cassava and sweet potatoes are mainly grown for food while Paddy is for both cash and food. Other crops which are mainly grown for both cash and food are Groundnuts and Bambara nuts. Sunflower and simsim are mainly grown for cash.

Paddy is mostly grown in Bahi, Chipanga and Chali wards; Maize and Bulrush millet in all wards except Bahi ward; Finger millet in Mundemu ward; groundnuts in all wards; Bambara nuts in Ibihwa, Mpalanga, Chikola, Msisi, Mundemu, Lamaiti, Makanda, Zanka, Mwitikira, Ibugule and Chibelela wards; Sunflower in Babayu and Zanka wards; Simsim in Ilindi, Chali, Nondwa, Msisi, Chibelela, Chipanga and Mundemu. The estimate of production of major crops is given in Table 3.2.

Table 3.2: Estimated production of major crops (in tons) 2003-2006 (Dodoma Rural)

Crops	2003/2004	2004/2005	2005/2006
Millet	24,438	34,000	49,988
Sorghum	23,435	36,500	26,844
Maize	41,674	28,440	21,024
Paddy	12,136	13,000	11,851
Cassava	163,200	34,000	19,902
Potatoes	5,150	12,000	263
Legumes	909	13,200	970
Pea Nuts	8,928	1,200	1,455
Groundnuts	36,256	19,700	38,832
Sunflower	2,845	11,900	2,528
Simsim	2,845	6,160	7,302
Grapes	300	400	832
Pigeon peas	58	36	1,455
Total	**322,174**	**210,536**	**183,246**

Source: Bahi DALDO report, 2008

Due to the dual use of food crops in the district (food and sell), it has been estimated that 91%, 89%, 87%, 72%, 94% and 80% of harvested Millet, Sorghum, Maize, Paddy, Cassava and Potatoes respectively are usually consumed by a household as a food (Survey, 2008). By

considering an average of 0.12 tons of carbohydrates per unit of population per year (regardless of age) for food adequacy, surplus/deficit of carbohydrate food is shown in the Table 3.3. Data in the Table 3.3 further shows that the area was food sufficient to the extent of having surplus food and hence good performance in food production.

Table 3.3: Available food starch and food requirements (in tons) 2003 – 2006 (Dodoma Rural)

Crops	2003/2004	2004/2005	2005/2006
Millet	22,239	30,940	45,489
Sorghum	20,857	32,485	23,891
Maize	36,256	16,043	18,291
Paddy	8,738	9,360	8,533
Cassava	15,322	31,960	18,708
Potatoes	4,120	9,600	210
Total available starch (food starch)	107,532	130,388	115,122
Projected population	447,614	454,776	462,052
Food starch required	53,714	54,573	55,446
Food starch surplus/deficit	+53,818	+75,815	+59,676

Source: Bahi DALDO report, 2008

Area for irrigation in the district

The district statistics shows that around 6,286.6ha in the district are suitable for irrigation. Area endowed with irrigation potentials are Bahi, Mpamantwa, Chali, Mtitaa and Babayu wards. Nevertheless, only 1,816ha is being irrigated (Table 3.4). The area being irrigated is mainly located in Bahi, Mpamantwa, Chali and Mtitaa wards.

Table 3.4: Area under irrigation in the District

Ward	Village	Scheme	Area under irrigation
Bahi	Bahi sokoni	Nguvumali	150
		Bahi sokoni	600
		Matajira	450
	Uhelela	Uhelela	134
	Nagulo bahi	Nagulo bahi	58
Sub total			**1392**
Mpamantwa	Bahi makulu	Bahi makulu	50
Chali	Chali makulu	Chali makulu	106
	Chikopelo	Chikopelo	60
Sub total			**216**
Mtitaa	Mtitaa	Mtitaa	**106**
Chipanga	Chipanga	Chipanga	**102**
Total			**1816**

Table 3.4 shows that Bahi ward has large area under irrigation than other ward, followed by Chali ward. Percentage distribution of the total area suitable for irrigation in the district is as shown in Figure 3.1.

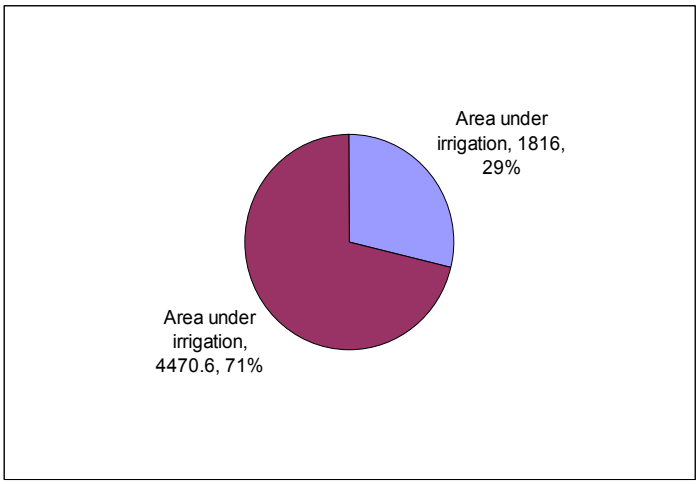


Figure 3.1: Percentage distribution of area under irrigation

Figure 3.1 indicates that 71% of the area suitable for irrigation in Bahi district is not utilized; this suggests that more effort is needed to mobilize human and financial resources to ensure that the potentials of this sub-sector are not lost.

Farm implements and storage facilities in the district 2007

Data from the district reports indicates that, although most of the people use hand hoes; there are still some few people who uses plough, power tillers and tractors. On the other hand although each household have its own means of storing food, there is at least one storage facility at community level in each division (Table 3.4).

Table 3.4: Distribution of farm implements and storage facilities by Division, 2007

Division	Plough	Pair of Oxen	Oxen Cart	Tractor	Magoye Ripper	Power Tiller	Storage Facility
Mundemu	400	700	100	5	10	3	1
Chipanga	500	730	231	3	10	3	1
Bahi	200	730	-	3	-	1	2
Mwitikira	748	760	147	2	10	1	3
Total	1,848	2,920	478	13	30	8	7

Source: Bahi District Council reports, 2008

Table 3.6 Shows that Mundemu division have many tractors than other divisions and Mwitikira division is leading in having lager number of

plough, pair of oxen and storage facilities. All in all the total number of farm implements and storage facilities in the district is not adequate to support efficient and effective farming and storage services in the district.

Problems facing farming activities in the district

Farming in the district is that of smallholders who cannot afford to buy and use fertilizers, agrochemicals and improved seeds. Unavailability and high price of agricultural inputs have tremendously impacted agricultural production in the district. Most farmers use traditional farm implements, such as the hand hoe, bush knife and axes. This practice has resulted into under utilization of the arable land available in the district. Table 3.5 gives an insight of the major problems facing crops production in the district.

Table 3.5: Crop production problems in the district

Crop production problems	Responses*
Crop diseases	6.3
High prices of farm implements	12.6
Unreliable supply of farm implements	5.6
Inadequate funds to buy agric inputs	15.9
Pests	25.2
Unreliable rainfall	64.1
Uneven distribution of water for irrigation	0.3
Floods	5.6

** Multiple responses*

Crops marketing problems in the district

The marketing structures for farmers' produce are fragmented and poorly developed. They lack organized farmers associations and co-operative societies. The inadequacy of travel and transport services is another setback in the marketing of agricultural produce in the district. Other problems facing crops marketing in the district include low prices, price fluctuation and lack of market information (Table 3.6)

Table 3.6: Crops marketing problems in the district

Marketing problems	Responses
Low prices	59.0
Frequent fluctuation of prices	2.7
High transportation costs	6.6
Lack of market information	39.1
Determination of prices by middlemen	15.6
Long distance to market places	0.4
Limited space for storing crop at market place	0.8

**Multiple responses*

Table 3.6 show the responses of households on the problems facing marketing of agricultural crops in the district; wherein most of the responses (59%) support that low price of crops an important problem in the area as far as marketing is concerned.

3.3.1.2 Livestock

Introduction

As with crops production, livestock keeping is also playing a significant role in supporting the households' economy and of the district at large. Based on the survey carried out in June 2008,

the district was estimated to have 28% of its population keeping cattle, 37% keeping goats, 19% keeping sheep, and 78% keeping chickens. In addition, the survey revealed that donkey, turkey and guinea pigs are kept by less than 10% of total households.

Livestock population in the district

Total population of cattle, goats and sheep in the district was indicated by 2006 livestock census to be 189,841, 39,470 and 7,604, respectively. Table 3.7 provides distribution of major livestock by wards and villages in the district.

Table 3.7: Major livestock distribution by ward and village in Bahi district

		Number of livestock kept		
Ward	Village	Cattle	Goat	Sheep
CHIPANGA	Chipanga 'A'	2,626	403	180
	Chipanga 'B'	2,726	673	116
	Chiguluka	3,809	856	255
	Sub total	**9,161**	**1932**	**551**
MPALANGA	Mpalanga	2,980	890	367
	Nholi	2,959	487	136
	Chidilo	2,280	621	208
	Sub total	**8,219**	**1998**	**711**
NONDWA	Nondwa	3,217	476	140
	Magaga	3,437	882	250
	Chifutuka	6,470	799	184
	Zejele	3,525	665	108
	Sub total	**16,649**	**2822**	**682**
CHALI	Chali Igongo	2,273	834	251
	Chali Makulu	2,107	580	70
	Chikopelo	5,619	1,189	179
	Chali Isangha	3,472	779	155
	Sub total	**13,471**	**3382**	**655**
CHIKOLA	Chikola	2,809	577	153
	Chimendeli	6,522	1,025	107
	Nghulugano	2,482	640	84
	Sub total	**344**	**344**	**344**
MPAMANTWA	Mkakatika	4,490	972	136

		Number of livestock kept		
Ward	Village	Cattle	Goat	Sheep
	Mpamantwa	2,562	682	67
	Bahi Makulu	5,144	1,007	80
	Sub total	**12,196**	**2661**	**283**
KIGWE	Kigwe	3,899	474	131
	Mpinga	2,693	1,277	148
	Mzogole	2,335	630	115
	Sub total	**8,927**	**2381**	**394**
IBIHWA	Ibihwa	3,520	788	98
	Mnkhola	3,309	564	85
	Sub total	**6,829**	**1352**	**183**
ILINDI	Mindola	2,275	920	132
	Ilindi	3,802	700	156
	Sub total	**6,077**	**1620**	**288**
BAHI	Bahi Sokoni	3,330	280	183
	Nagulo Bahi	5,208	620	151
	Uhelela	2,906	413	88
	Sub total	**11,444**	**1313**	**422**
MUNDEMU	Mundemu	2,520	522	168
	Chilungulu	2,270	824	61
	Nguji	2,977	760	84
	Sub total	**7,767**	**2106**	**313**
MSISI	Msisi	4,119	987	197
	Kisima cha Ndege	2,866	530	49
	Mchito	2,245	890	86
	Tinai	2,894	778	55

		Number of livestock kept		
Ward	Village	Cattle	Goat	Sheep
	Sub total	**12,124**	**3,185**	**387**
BABAYU	Babayu	2,570	584	176
	Asanje	2,420	247	74
	Kongogo	4,360	667	39
	Sub total	**9,350**	**1498**	**289**
LAMAITI	Bankholo	3,113	621	144
	Lamaiti	3,740	311	59
	Lukali	4,870	541	87
	Sub total	**11,723**	**1473**	**290**
MAKANDA	Chonde	2,980	320	63
	Makanda	3,830	650	174
	Sub total	**6,810**	**970**	**237**
MAYAMAYA	Mayamaya	3,798	670	107
	Mkondai	2,770	960	188
	Zanka	2,488	844	328
	Sub total	**9,056**	**2474**	**623**
CHIBELELA	Chibelela	3,068	877	105
	Isangha	2,398	597	130
	Sub total	**14,522**	**3948**	**858**
MTITAA	Mtitaa	4,017	650	85
	Nchinila	5,800	889	215
	Sub total	**9,817**	**1539**	**300**
IBUGULE	Ibugule	2,145	461	64
	Nkhome	5,169	909	121
	Sub total	**7,314**	**1370**	**185**
MWITIKIRA	Mphangwe	2,111	655	198

		Number of livestock kept		
Ward	Village	Cattle	Goat	Sheep
	Mwitikira	2,940	528	135
	Sub total	**5,051**	**1183**	**333**
	GRAND TOTAL	**189,841**	**39,470**	**7,604**

Source: Dodoma rural district 2006 livestock census

Table 3.7 shows that Nondwa ward is leading in cattle keeping, while Chibelela ward is number one in goats and sheep keeping. The overall results presented in the table indicates that Mwitikira ward have few livestock as compared to other wards in the district.

Grazing area in the district

Livestock statistics show that more than 95 percent of district livestock are indigenous breed. The indigenous breed depends mainly on availability of grazing area. Available data shows that the district is estimated to have 133,156ha of suitable land for grazing. Based on livestock carrying capacity of 2 hectares per livestock unit per year, the area is not enough to fully support the existing number of livestock population in the

area. The situation is thought to be worsened by inflow of pastoralists with their livestock from other districts/regions in seek for grazing land.

Livestock infrastructures in Bahi district

Information obtained from Ward Executive Officers of all wards in the district (2008) revealed that there is significant shortage of livestock infrastructure in the district. The status of required and available livestock infrastructure in the district is given in Table 3.8. The result in the table among other things shows that the district has 13 dips, 6 livestock health centres, 15 slaughtering slabs and 9 skin drying rakes.

Table 3.8: Livestock infrastructures in Bahi district

Ward	Dips			Livestock health centre			Slaughtering slabs			Skin dry rakes		
	Required	Available	Shortage	Required	Available	Shortage	Required	Available	Shortage	Required	Available	Shortage
Kigwe	1	1	-	1	1	-	3	2	1	3	1	2
Mtitaa	1	-	1	1	-	1	2	-	2	2	-	2
Ibugule	2	1	1	1	1	-	2	1	1	2	1	1
Mwitikila	2	1	1	1	1	-	2	1	1	2	1	1
Mpamantwa	2	1	1	1	1	1	3	-	3	3	-	3
Lamaiti	2	1	1	1	-	1	3	3	-	3	-	3
Msisi	2	-	2	1	-	1	3	-	3	3	-	3
Bahi	2	1	1	1	1	-	3	3	-	3	1	2
Chali	2	1	1	1	-	1	2	-	2	2	-	2
Babayu	2	1	1	1	-	1	2	-	2	2	-	2
Mundemu	1	1	-	1	1	-	2	1	1	2	1	1
Zanka	1	1	-	1	-	1	3	-	3	2	-	2

Ibihwa	1	-	1	1	-	1	2	1	1	3	1	2
Chipanga	2	1	1	1	1	-	3	1	2	3	1	2
Chibelela	2	0	2	1	1	-	2	1	1	2	1	1
Chikola	1	-	1	1	-	1	3	-	3	3	-	3
Ilindi	1	-	1	1	-	1	2	1	1	2	1	1
Nondwa	4	2	2	1	-	1	3	-	3	3	-	3
Makanda	2	-	2	1	-	1	2	-	2	2	-	2
Mpalanga	2	1	1	1	-	1	3	-	3	3	-	3
TOTAL	**35**	**14**	**21**	**20**	**8**	**13**	**50**	**15**	**35**	**50**	**9**	**41**

Source: District livestock office, 2008

Table 3.8 Further indicates that each facility ranging from dips to skin drying rakes is inadequate to more than 50% of the total requirement. This suggests that deliberate effort is required to address the problem.

Markets for Livestock in the district

As indicated before in the preceding sub-sections, livestock are among the key sources of income to smallholder-farmers and the district as a whole. As a result, tracing the places where livestock are being traded has been one of the issues in this subsection.

Livestock market in the district is of two kinds; the internal and the external markets. The internal markets explain the traditional weekly trade gatherings commonly known in Kiswahili as "*Minada".* Where as in each ward there is at least one "*Mnada" per* month. These trade traditional gatherings provide opportunities for small-holder farmers to sale among other things, their livestock, and hence increase their disposable income.

The major immediately external livestock market available to the livestock keepers' of Bahi district is Dodoma

Municipal. Table 3.9 indicates major routes livestock sellers take to reach the nearest external market.

Table 3.9: Livestock routes to the immediately external market

No	Routes	Check Point	Night Camps
1	Bahi - Dodoma	Kigwe	Bahi Sokoni
2	Nondwa – Chipanga - Dodoma	-	-
3	Mlazo – Manda - Dodoma	Mwitikira	-

Source: District livestock office, 2008

Problems facing livestock sector in the district

Low production

Because most of the livestock in the district is of indigenous breed, there has been low production of both meat and milk. A cattle for instance, is estimated to produce 2-3lts of milk per day during the rain season, an amount which decline to 0.5-1lt during the dry season. The average age at which a bull is being slaughter in the district range from 6 to 8 years; whilst, the average weight at slaughter varies from 200 to 300kg during rain season and 150-200kg during the dry seasons.

The mortality among calves and adults is estimated at 20-25% and 10% respectively. Goats and sheep in the district

are generally not milked; and they seem to thrive well. This is so because their weight during their life time range from 15 to 18kg and their motility rate is estimated to be below 5%. Nevertheless, considering the overall livestock situation the district is in general having poor livestock production coefficient.

Overgrazing and lack of pasture management

Pasture and water in the district are very scarce particularly during dry season, which to the large extent contributes to poor livestock condition. During dry season, livestock keepers are forced by circumstance to walk for approximately 2 to 7 km with their livestock seeking for grazing land. The situation is further being aggravated by poor range management; uncontrolled burning of rangeland and pastures; and absence of land tenure which could grant farmers control over their lands as a result users have no incentives to invest in pasture improvement.

Livestock support services:

Facilities for diseases prevention and control in the district are extremely inadequate. To arrest this situation, the district has mobilized livestock keepers, individuals and NGO's to own and operate cattle dips. Also the district

council has set aside 15% of its annual budget for livestock development fund. The district also had 6 veterinary health centres, which lack basic equipment and inadequate support services. All these combined together result into prevalence of frequent livestock diseases (Table 3.10).

Table 3.10: Diseases facing livestock by type

	LIVESTOCK	**DISEASES**
1	Cattle	East coast fever, black quarter, Red water (babesiosis), Foot and mouth , Brucellosis, Contagious Bovilie Pleurophenmonia (CBPP).
2	Goats	Foot rot, Anthrax and pneumonia and Contagious Caprine Pleurophenmonia (CCPP)
3	Sheep	Pneumonia and diarrhoea
4	Chicken	Newcastle, Coryza, fowl pox and fowl typhoid
5	Pigs	Mange, pneumonia and worms

Source; District live stock office, 2008

Inadequate funds

This is another serious problem facing the livestock sector despite of its contribution to district economy. Due to budget constraints the district council fail to fund the sector requirement of essential veterinary drugs and equipments.

In a nutshell Table 3.11 summarises the result of June 2008 survey on the problems facing livestock production in the district.

Table 3.11: Livestock production problems in the district

Livestock production problems	Responses*
Diseases	88.1
External parasites such as ticks	11.9
Internal parasites such as worms	1.0
Inadequate water for livestock	5.9
Inadequate pastures	5.0
Unavailability and high price of drugs to treat livestock	2.0

**Multiple responses*

Market problems

Livestock in the district is faced by several problem; these include low prices, price fluctuation, lack of proper market information and lack of slaughtering slabs. Table 3.12 indicates the magnitude of the problems as identified by households in a survey done in the district in June 2008.

Table 3.12: Livestock marketing problems in the district

Livestock marketing problems	Responses*
Low prices	73.9
Frequent fluctuation of prices	8.7
Lack of market information	40.6
Determination of prices by middlemen	1.4
Long distance to market places	1.4
Lack of slaughter slabs	4.3

*(Multiple responses)

3.3.2 Natural resources

3.3.2.1 Introduction

Bahi district is endowed with vast natural resources that include rivers and dams which provides great opportunity for fishing, irrigation, water for domestic uses as well as for livestock keeping and for being consumed by wild animals. Other natural resources in the district include forests, bee products, minerals and wildlife. The detailed explanations of these natural resources are given here under;

3.3.2.2 Fisheries

Fishing in Bahi district is mainly done seasonally; yet the sector has notable contribution to the individual income and that of the district as a whole. The main river for fishing in the area is river *Bubu*. Other rivers include *Lukali, Kasela and Mkambala*. In few cases fishing is being done throughout the year in areas with permanent swamps located in *Surunghai with an area of 290km^2, Nondwa (243m^2) and Mchito.*

Fish species found in the area are Clarias (*Kambale*), Tilapia (*Perege*), *Ningu* and Sardines (*Dagaa*) whereas, the main tools used in fishing are fishnets, fish traps and hook

lines. The estimates of harvested fish in the district between 2001 and 2008 are as indicated in Table 3.13.

Table 3.13: Estimated harvest of fish (in tons) 2001/02 – 2007/08

	Fish harvested (in tons)			
Species	2001/02	2005/06	2006/07	2007/08
Clarias(*Kambale*)	692.00	101.00	466.00	933.00
Tilapia(*Perege*)	341.00	72.00	363.50	1326.00
Ningu	2.50	0.25	0.50	12.00
Sardines(*Dagaa*)	0.90	0.25	2.50	8.00

Source: Bahi district council report, (2008).

Table 3.13 indicate that production of Tilapia and Clarias was high compared to *Ningu* and Sardines. It can also be seen from the table that production of all species was low in 2005/2006 season and highest in 2007/2008 season. While the decline in the year 2005/2006 is attributed to drought; the increase in the year 2007/2008 is associated with two things. The first is good rainfall experienced in that season, and the second is an increase in number of people engaging themselves in fishing activities in the area (Table 3.13).

Table 3.13: No. of Fishermen and fisheries facilities in the district

Year	Number of fisheries licenses	Number of fishermen	Number of fishing vessels	Number of fishing nets
2001/02	100	480	201	1846
2005/06	115	438	81	1676
2006/07	288	706	372	936
2007/08	407	938	877	1295

Source: Bahi district council report, (2008).

Fish Processing

Although the district has high potential for fishing industry, there is no fish-processing factory in the area. Most of the fishing products are processed by fishermen and/or petty traders through sun drying. Fishermen sell their fish to petty traders or directly to consumers mainly in Songea, Morogoro, Mbeya and Dar es Salaam this implies that deliberate efforts are needed to invest in fish processing especially.

Problems facing fishing sub sector in the district

Despite of the fact that fishing has great potential to contribute to the district economy, there are however, a number of problems facing this sub sector. These include;

lack of capital, inadequate expertise in fisheries management, unreliable annual rainfalls and disvaluing of fisheries activities by the indigenous, some thing which makes these activities to done by the people from outside the district; mainly from Ruvuma, Mbeya, Rukwa and Mara.

Other problems are poor and sometime the absence of infrastructure like reliable roads net work and electricity; and little budget to promote this sub sector.

3.3.2.3 Forestry

The district is also endowed with forestry resources. A good number of people in the district depend on trading forestry products as one of their important livelihood strategies. Furthermore, a significant proportion of charcoal and firewood supply to Dodoma municipality is from the district. Trend on volumes of forest products harvested in the district is indicated in Table 3.14.

Table 3.14: Estimated amount of forest products harvested (in m^3) 2002 to 2007

	Forest product harvested (m^3)			
Products/Year	2002	2005	2006	2007
Fire wood	222,499	2,841,471	3,033,346	3,443,821
Charcoal	1,611,607	2,018,291	3,822,045	4, 389,390
Timber	1,200,205	1,600,358	1,110,435	1,300,647
Poles	1,142,250	204,200	1,540,230	2,048,350

Source: District reports, 2008.

Data from Table 3.14 indicates that forestry products harvested since 2002 have been increasing and that there is no signs of having the trend declining, this implies that pressure on forests is increasing and hence efforts need to be in places to counteract the prevailing situation.

Forest reserves

The district is estimated to have about 2819.4ha covered with natural forests and 175ha covered with exotic forests, about 2644.4ha are forest reserves. *Mipululu* and *Miyombo* trees constitute the largest proportion of forest in the district. Other types of trees include *Mikungugu*, *Mitundulu, Mikola, Misami, Midoho, Mifulu, Mikoma and Migunga*.

Tree planting efforts in the district

Most of the tree planting efforts in the district has been initiated by Non Governmental Organizations. These include World Vision Tanzania, Dodoma Environmental Network, DODEA and MIGESADO. Inline with their tree planting campaign they also advocate for the use of improved cooking stoves. Although data are not available to indicate how many trees have survived, information shows that about 382211, 457218, and 397612 tree seedlings were planted in the district in the year 2005, 2006 and 2007, respectively.

Results from the survey carried out in 2008 indicates that although majority of households are aware of environmental protection bylaws and tree planting campaigns in the area, many households are still reluctant to plant trees due to fear among themselves that the trees will not survive. This fear is the result of the knowledge that they do not have adequate water for watering and their experience that most of newly established tree seedlings are being destructed by termites.

These have been among the major forest conservation challenges in the area. Currently, the activity of planting

trees in the district is only seriously practised in institutions like primary and secondary schools, who plant trees around their compounds.

Environmental problems resulting from deforestation in the district

Like other part of central Tanzania environmental degradation due to deforestation and overgrazing is one of the major problems in Bahi district. This has resulted into declining soil fertility, reduction in the number of natural tree species and wild animals.

Results from the survey done (2008) in the district indicates that more than 80% of the surveyed households complained that land fertility has decline substantially in recent years compared to the past ten years ago. Similarly, number of tree species and area under natural forest, number and species of wild animals has declined. Deforestation has been caused by clearing of land for farming and cutting of trees for firewood and charcoal. Overgrazing in some of the places specifically in the Bahi lowland (valley) has been caused by presence of pastoralist immigrants mainly form *Sukuma* land.

Bylaws to curb deforestation in the district

In an effort to combat environmental problems several bylaws exists in the area. These include restrictions on setting fire on bushes/forests; restrictions on burning charcoal unless one has permission from Village Executive Officer's; imposition of fines to deviants; and requiring each household should plant at least 10 trees each year.

3.3.2.4 Bee-keeping

Bee-keeping, though is carried in a small scale is another source of district and individual income. Bee-keeping in the district is to the large extent (more than 99%) being carried out traditionally. Bee species found in Bahi district include stinging bees (*Apis mellifera steculata*) and stingless bees (*Mellipona spp. and Trigona spp*.). Number of both traditional and modern beehives in the district has been increasing over years in the district (Tables 3.15).

Table 3.15: Numbers of beehives in the district

Types	2002	2005	2006	2007
Tradition beehives	12,530 (99.88%)	27,549 (99.90%)	32,660 (99.75%)	35,407 (99.65%)
Modern beehives	15 (0.22%)	21 (0.10%)	83 (0.25%)	1,226 (0.35%)
Total	12,545 (100%)	27,570 (100%)	32,743 (100%)	36,633 (100%)

Source: District reports, 2008.

Table 3.15 further shows that although the modern beehives have been increasing, since 2002 they have not reached 1% of the total beehives in the district, signifying that most of the people uses traditional beehives.

Nevertheless, harvests of both honey and bee wax in the district has been increasing since 2002 to 2007. The production of honey and wax is shown in Table 3.16.

Table 3.16: Production of honey and wax in the district 2002 to 2007

Types	2002		2005		2006		2007	
	Honey (lts)	Wax (kgs)	Honey (lts)	Wax (kgs)	Honey (lts)	Wax (kgs)	Honey (lts)	Wax (kgs)
Tradition beehives	34,595	61463	44,544	69978	88,971	7851.5	115,455	83660.5
Modern beehives	-	-	-	-	-	-	3,429	600
Total(lts/kgs)	34,595	61463	44,544	69978	88,971	7851.5	118,884	84260.5

Source: District reports, 2008.

From Table 3.16 it can be seen that the amount of honey produced in 2007 is more than three times of that produced in the year 2002, whilst that of wax is nearly twice.

3.3.2.5 Wildlife

There is no identified game reserve in the District, but animals are found in some traditional forest reserves such as Dangiyo, Goima, Lamaiti and Chenene. Animals species found in the area are Elephant, Lion, Hyena, Hippopotamus, Antelope, Leopard and Hare. Since there are no identified game reserves, this sub-sector does not contribute to the district economy.

3.3.2.6 Mining

Mining sector in the district is still in the infant stage, currently what exist in the district is small scale salt, phosphate and gold mining carried out by local people using traditional methods. Gold is mined at Mafurungu hills in the western part of the district, phosphate in Chiwela and salt in Mpamantwa, Lamaiti, Chali, Kigwe and Ilindi wards. The largest deposit of salt is found in Ilindi ward. Several local people are engaged in salt mining for local use and export to other regions/districts in the country. Uranium is still in exploration in Bahi and Mpamantwa wards.

SECTION IV

4.0 ECONOMIC INFRASTRUCTURE

4.1 Introduction

Economic infrastructures such as road, railway, air transport; and electricity and telecommunication network are in poor condition; and in some areas do not exist. Road for instance, despite the fact that most of the residence in the area depends on roads for their travel and transport activities, the condition of road is very poor especially during rainy season.

Apparently, the aforementioned situation has significant effect on the individual income and the district economy as a whole. The following sub-sections present an account of each type of infrastructure in the district.

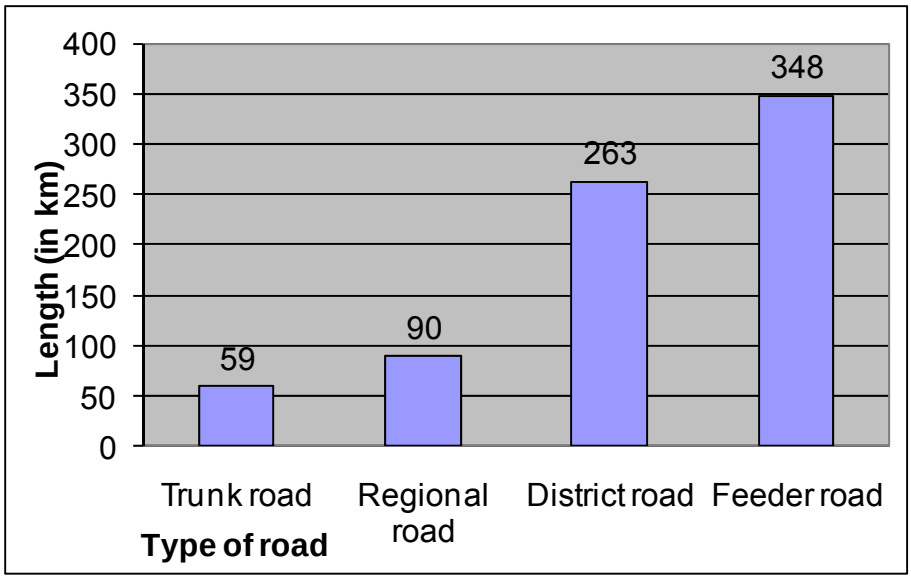
4.2 Road networks

4.2.1 Type of road network by levels in the district

Bahi district has an estimated road network length of 760km in which 59km are trunk roads, 90km are Regional roads, 263 are district roads and 348 are feeder roads (Figure

4.1). Large portion of roads in the district are in poor conditions.

Figure 4.1: Types of road networks in Bahi district by levels



Source: Bahi district council, 2008.

Figure 4.1 indicates that 46.21% of the roads in the district are feeder roads, 7.83% trunk roads and 11.95% regional roads. The distribution of these roads based on divisions located in the district is given in Table 4.1.

Table 4.1: Types of roads network by level and by division in the district

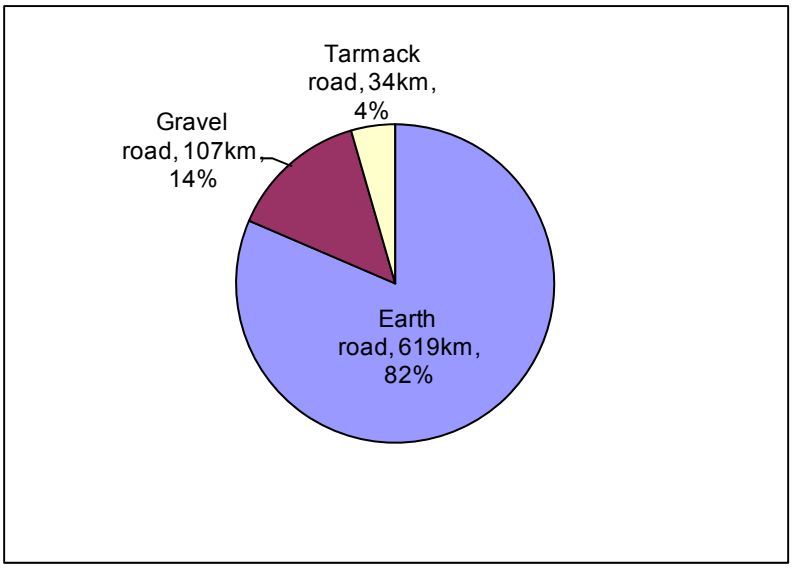
Division	Trunk Road (Km)	Regional Road (Km)	District Road (Km)	Feeder Road(Km)	Total (Km)
Bahi	34(57.60%)	12(13.3%)	22(8.4%)	71(20.4%)	139(18.3%)
Mundemu	25(42.40%)	17(18.9%)	119(45.2%)	155(44.6%)	316(41.6%)
Chipanga	-	1(1.1%)	83(31.6%)	93(26.7%)	177(23.3%)
Mwitikira	-	60(66.7%)	39(14.8%)	29(8.3%)	128(16.8%)
TOTAL	59(100%)	90(100%)	263(100%)	348(100%)	760(100%)

From Table 4.1 it can be observed that trunk roads are only shared between Bahi and Mundemu Divisions, leaving Chipanga and Mwitikira without any trunk road. On the other hand in total Mundemu division is having many roads (41.6% of all roads) than other division, implying that other division face relatively high inaccessibility problems compared to Mundemu division.

4.2.2 Types of road networks by surface condition

The classification of road networks based on the surface condition reveals that about 619km which is 82% of roads in the district are earth roads, 107km (14%) is gravel and 34km (4%) are tarmac roads (Figure 4.2). This implies that most of the roads are impassable during rain season.

Figure 4.2: Types of road networks by surface condition



Source: Bahi district engineer's report 2008

The distribution of road networks based on surface condition in each division in the district is given in Table 4.2.

Table 4.2: Distribution of roads by surface condition and by division in the district

Division	Tarmac (in km)	Gravel (in km)	Earth (in km)	Total (in km)
Bahi	34	7	98	139
Mundemu	-	40	276	316
Chipanga	-	-	177	177
Mwitikira	-	60	68	128
TOTAL	**34**	**107**	**619**	**760**

Source: Bahi district council, 2008.

Table 4.2 shows that tarmac road is located in Bahi division only and that in Chipanga division there are no roads made with gravel. Hence it is obvious that it is difficult to access Chipanga division during rain season as compared to other divisions.

4.3 Means of transport

The district is somehow well serviced by inter-regional transport links by the central line of the Tanzania Railway Limited (TRL) passing through the district. The railway line passes through two (2) villages in the district, namely; Kigwe and Bahi villages. Residents in the district use

Lories, Buses, Min-buses, Bicycle and Motor cycle as means of transport and transportation.

4.4 Telecommunication infrastructure and information services

The human activities now days have been improved by the availability of telecommunication system such as telephone, internet and e-mail services playing a significant role in socio-economic development in the country.

Communication companies available in the district include: TTCL telephone network and mobile phone service providers like ZAIN, VODACOM, TIGO, ZANTEL and one internet café. Furthermore, there are also about 8 receivable radio stations in district, namely; Tanzania Broad casting Corporation (TBC), Radio Free Africa (RFA), Kiss FM, Radio Mwangaza FM, Radio ONE, and Radio Uhuru, serving the entire district. Very few individuals in the district own and operate television sets.

Table 4.3: Number of telephone providers and other communication services providers by division

Division	Number Of Telephone Land Lines	Number Of Radio Stations	Number Of Internet Centres	Number Of Mobile Phone Providers	Number Of Sub Post And Post Offices
Bahi	3	6	-	5	-
Mundemu	4	8	1	5	-
Chipanga	-	6	-	3	-
Mwitikira	-	7	-	1	-
TOTAL	7	27	1	14	-

Table 4.3 shows that land lines phones are only share between Bahi and Mundemu division and that while there are no postal services in the district; internet service is only found in Mundemu division.

4.5 Energy

A survey conducted in June 2008 in the district indicates that the main sources of energy in the district are; fuel, charcoal and kerosene. Others include; animal dung and gas.

Table 4.4: Energy sources for cooking in Bahi based on the sample survey of 2949 households

Sources of energy	Number of responses	Percentage*
Animal dung	1	0.0
Fuel wood	2844	97.7
Charcoal	270	9.3
Gas	1	0.0
Kerosene	2	0.1

*Data set was based on multiple responses

Table 4.4 shows that fuel wood is being used by majority (98%) of the surveyed households mainly for cooking. Very few (9.3%) uses charcoal as sources of energy for cooking. Table 4.5 indicates the sources of energy for lighting in the district. These include; animal dung, crop residual, dried tree leaves, fuel wood, Kerosene, Electricity generator and bio gas. Solar power is used by few households located in town centres and by religious institution. Despite the fact that national electricity grid passes through the district; electricity from the grid have not been taped for use in the district. Nevertheless, plans for supplying electricity to the district form this grid are underway.

Table 4.5: Energy sources for lighting in Bahi based on the sample survey of 2949 households

Sources of energy	**Number of responses**	**Percentage**
Animal dung	1	0.0
Crop residuals	33	1.1
Dried tree leaves	46	1.6
Fire wood	189	6.4
Kerosene	2768	93.9
Electricity from generators	9	0.3
Electricity from Solar power	4	0.1
Electricity from Biogas	2	0.1

*Data set was based on Multiple responses

Table 4.5 above indicates that Kerosene is the major source of energy for lighting used by nearly all households (93.9%), followed by fuel wood (6.4%) and crop residuals (1.1%).

SECTION FIVE

5.0 SOCIAL SERVICES

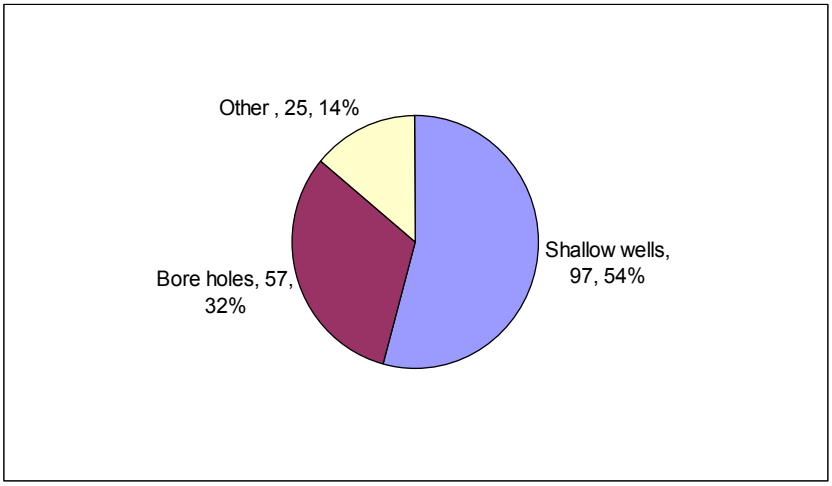
5.1 Introduction

Adequate social services are important for development and wellbeing of a community under consideration. In this regard, provision of adequate social services to communities has been a foremost goal in development policies in many governments. These social services involve health, education and water and sanitation. Health issues discussed in this section includes morbidity, mortality and health facilities. Issues in education sector include primary and secondary schools profiles. In general the content in this section discloses the status and the manner in which social services are rendered in the district.

5.2 Water supply and sanitation

Nearly all places in the district are rural, rural water supply in the district for domestic use is still a development challenge. By 2008, the district has a total number of 179 water sources. These are 57 bore holes, 97 shallow wells and 25 other sources (Figure 5.1). In this context other sources include dams, springs and rain water reservoir. A good percent (66%) of these water sources are functioning, whereby they serves 61% of the total population.

Figure 5.1: Water sources by type



District statistics of 2008 indicated that only 37% of the households in the district access water within 400m. With regards to toilets, the survey conducted in 2008 gives an impression that most of households in the district have toilets. Table 5.1 summarises the results of the survey indicating that most (86%) of the sampled household have pit latrine at their homes.

Table 5.1: Types of toilets in the district

Variable	Responses	Percent
Households with no toilet	361	10.6
Households with pit latrine	2935	86.0
Households with improved pit latrine (i.e. with vent. Pipe)	118	3.4
Total	3414	100.0

5.3 Health sector

5.3.1 Top ten diseases in the district

The top ten diseases in the district include, Malaria, ARI, Diarrhoea, Intestines worms, Ear infection, Eye infection, Pneumonia, Skin infection, Non-infection and Gastrointintis Urinary Track. Information from District Medical Officer,

these disease accounts for more than 70% of the reported cases of morbidity in the area. Table 5.2 below indicates cases of morbidity caused by each of the top ten diseases in the district between 2005 and 2007.

Table 5.2: Morbidity cases caused by the top ten diseases in Bahi 2005-2007

Diseases	2005 Dodoma rural			2006 Dodoma rural			2007 Bahi district		
	No. of reported cases	No. of reported cases <5yrs	No. of reported cases ≥5yrs	No. of reported cases	No. of reported cases <5yrs	No. of reported cases ≥5yrs	No. of reported cases	No. of reported cases <5yrs	No. of reported cases ≥5yrs
1.Malaria	126,209	79,626	46,283	124,944	76,292	48,652	37,643	24,704	12,939
2..ARI	52,103	27,472	24,631	50,264	33,464	16,800	17,808	11,580	5,928
3.Diarrhoea	20,825	15,062	5,763	22,497	16,266	6,231	5,645	4,627	1,801
4.Intestines Worms	8,455	4,744	3,711	7,247	3,495	3,752	2,114	1,116	1,033
5.Pneumonia	20,077	12,495	7,582	19,537	11,559	7,978	6,182	3,831	2,351
6.Eye infection	17,615	12,140	5,475	20,334	15,243	5,091	5,737	4,226	1,511
7.Ear infection	3,275	1,892	1,383	3,819	2,234	1,585	1,344	926	418
8.Skin infection	5,637	3,187	2,450	6,477	4,259	2,218	3,066	1,985	1,081
9.Non-infection Gastrointintis	5,212	2,185	3,027	5,909	2,797	3,112	1,846	1,286	560
10.Urinary Track Infection	3,378	1,015	2,363	3,825	1,280	2,545	922	335	587

Source: District Medical Office-Bahi, (2008).

Data from Table 5.2 indicated that Malaria is by far leading disease followed by ARI. The Table further shows that more than a half of the people reported to have suffered form the top eight diseases in each year in the district are under five children. This implies that efforts need to be done to rescue the lives of this age group.

5.3.2 HIV/AIDS Status in the district

5.3.2.1 HIV/AIDS situation in general

HIV/AIDS though not in the top ten diseases, it is growing problem in the district. The exact number of people infected with this disease is not yet known. This is so because some patients do not get health care in health facilities located in the district. However, the available data indicates that for the year 2007 there were about 816 reported cases of HIV/AIDS. The most affected areas in the district include Ibihwa, Mundemu, Bahi Sokoni, Zanka, Mtitaa and Lamaiti.

In an effort to control the problem of HIV/AIDS the district in collaboration with NGOs, CBOs and FBOs) has made services related to HIV/AIDS available to people. These services include counselling and testing of pregnant women for the infection of the disease in all health facilities in the district. Some of the NGOs, CBOs and FBOs dealing with these services include Bahi Development Group (BADEGRO), *Chipanga* Women and Children Rights (CHIWOCHI), *Faraja* Human Trust (FARAJA), World Food Programme (WFP) and Diocese of Central Tanganyika (DCT).

5.3.2.2 HIV/AIDS infections to pregnant women in the district

All pregnant women attending clinics in the district have to be tested for HIV/AIDS. Data from clinics in the district indicates that between 2005 and 2007 a total number of 3812 pregnant women were HIV/AIDS tested, out of which 233 found positive. Table 5.3 indicates the distribution of HIV/AIDS tested pregnant women by ward between 2005 and 2007.

Table 5.3: Distribution of HIV/AIDS tested pregnant women by ward 2005-2007

WARD	2005		2006		2007		TOTAL	
	Blood Tested	HIV Positive	Blood Tested	HIV Positive	Blood Tested	HIV Positive	Blood Tested	HIV Positive
Ibihwa					517	9	517	9
Mpamantwa	4		19	4	23	3		
Nondwa					440	4	440	4
Mtitaa					355	26	355	26
Lamaiti					34	14	34	14
Chikola					34	14	34	14
Chali	98	8	101	13	123	30	378	55
Msisi					65	3	65	3
Mpalanga						12		12
Chibelela					133	7	133	7
Bahi	234	05	612	26	493	29	1340	60
Mwitikira								
Mundemu	21	3	188	9	118	2	327	14
Kigwe					2	2	2	2
Makanda					100	1	100	1
Chipanga								
Babayu					5	1	5	1
Ibugule					93	2	93	2
Zanka						4		4
Ilindi								
Total	**357**	**16(4.5%)**	**920**	**52(5.7%)**	**2535**	**165(6.5%)**	**3812**	**233**

Source: The District Executive Director's Office (2008)

Table 5.3 above reveals that HIV/AIDS infections to pregnant women in the district have been increasing since 2005; wherein 4.5% of those pregnant women tested HIV/AIDS in 2005 were positive and those tested in 2007, 6.5% were found positive.

5.3.2.3 Efforts to control HIV/AIDS infections in the district

Bahi district engages itself in educating the community about HIV/AIDS. Five thematic areas have been identified and dealt with in this regard. These are prevention, treatment, advocacy, impact mitigation and institutional strengthening. Several committees have been formed and trained for the purpose of coordinating the training program. These committees include Council Multi-sectoral AIDS Committee (CMAC); Ward Multi-sectoral AIDS committee (WMAC); and Village Multi-sectoral AIDS Committee (VMACS).

Each ward has been provided with one focal person who has been trained on the Peer Health Educators (PHE) to facilitate education/training on his/her area. The CMAC meets quarterly to monitor progress, while the WMACs and VMACS meet monthly.

In the areas of impact mitigation and treatment, Bahi district in collaboration with some NGOs, FBOs and CBOs do help the infected people with special nutritious food and/or treatments. The Bahi Development Group (BADEGRO), Chipanga Women and Children Rights (CHIWOCHI), Faraja human Trust (FARAJA), World Food Programme (WFP) and Diocese of Central Tanganyika (DCT) have been identified as contributors in this area.

By 2008, 50 households with orphans and 22 households of People Living With HIV/AIDS (PLWHA) have been served. The services include provision of Anti-Retro-Viral Drugs (ARVs); bus fare to Dodoma regional hospital;

and food allowance during medical consultation at the regional hospital.

5.3.3 Health Facilities

Health services in Bahi district are provided by the Government, NGO's and a growing number of private dispensaries and pharmacies. The district has mobile clinics which operates during local and national vaccination campaigns. There is also health development Programmes such as Child Protection Development and Survival programme which is supporting health services at village level.

The district has no hospital, it has three health centres owned by government, thirty five dispensaries, out of which thirty three are owned by the government and the remaining two are privately owned (Table 5.4). The existing health facilities are un-evenly distributed wherein about 60 percent of residents walk between five to

seven kilometers to get health services. Referral services are being obtained from Dodoma regional hospital, Mirembe and Mvumi hospitals.

The Dodoma regional and Mirembe hospitals are located about 70 kilometres away from most of villages in the district; and the Mvumi hospital is located about 150 kilometres away.

Table 5.4: Number of health facilities in the district

Facility	2002 Dodoma rural			2006 Dodoma rural			2007 Bahi district			2008 Bahi district		
	Govt	Private	Total	Govt	Private	Total	Govt	Private	Total	Govt	Private	Total
Dispensaries	30	2	32	30	2	32	30	2	32	33	2	35
Health centres	3	0	3	3	0	3	3	0	3	3	0	3
Hospitals	0	0	0	0	0	0	0	0	0	0	0	0

Source: District Planning Office, 2008.

5.3.4 Clinic attendance by pregnant women

Place of delivery and frequency of clinic attendance by pregnant woman is considered to be an important factor for safe delivery. Health standards require that for safe delivery, a pregnant woman must attend clinic at least five times before delivery. Table 5.5 indicates place of delivery and frequency of clinic attendance by pregnant women in the district.

Table 5.5: Place of delivery in the last pregnancy by age

Place of delivery and clinic attendance	Age (years)		Total
Place of delivery	15 - 49	> 49	
Home	239 (29.0%)	28 (32.2%)	267 (29.3%)
Place attended by traditional birth attendants	119 (14.5%)	29 (33.3%)	148 (16.3%)
Clinic	465 (56.5%)	30 (34.5%)	495 (54.4%)
Total	823 (100.0%)	87 (100.0%)	910 (100%)
Frequency of clinic attendance			
Never attended	22 (2.7%)	39 (44.3%)	61 (6.7%)
Below five times	484(58.7%)	33(37.5%)	517(56.7%)
Five time or above	318(38.6%)	16(18.2%)	334(36.6%)
Total	824(100%)	88(100%)	912(100%)

Table 5.5 shows that although majority of the women involved in the survey (56.5%) have delivered in clinics, still there is a substantial number of women who have delivered at home and places attended by traditional birth attendants. The table further, indicates that majority of the interviewed women (more than 58%) have attended clinic less

than five time before they got delivered. This implies that efforts are needed to rectify the situation.

5.3.5 Health personnel

Like many other parts in Tanzania, a district has a severe shortage of most of health personnel (Table 5.6). Such shortage combined with that of health facilities has resulted into unacceptably high ratios of population per health facility/personnel. Indeed this situation limits the ability of the district to provide quality health services.

Table 5.6: Number of health personnel in the district

Staff Category	Required	Available	Deficit	% deficit
Medical Officers (MO)	1	1	0	0.00
Assistant Medical Officers (AMO)	3	2	1	33.30
Assistant Dental Officer(ADO)	1	1	0	0.00
Health secretary	1	1	0	0.00
Clinical Officers	75	22	53	76.70
Nursing Officer's (RN)	12	9	3	25.00
Nurse and Midwife (TN)	84	23	61	72.62
Public Health Nurses	76	5	71	93.42
Health officers	8	4	4	50.00
Health Assistants	20	3	17	85.00
Medical records	5	0	5	100.00
Dental Assistants	3	0	3	100.00
Medical Attendants	46	48	+2	+4.35
Pharmacy Assistant	3	0	3	100.00
Pharmacy technicians	1	0	1	100.00
Laboratory Assistant	3	0	3	100.00
Laboratory Technicians	1	0	1	100.00
Laundry Attendants	12	2	10	83.30
Total	355	121	238	67.04

Source: District Medical Office, 2008

Table 5.6 shows that except for Assistant Medical Officer, Medical attendants and Nursing Officers, the percentage of staff deficit for other categories of staff is 50 or more. This gives an impression that

there is serious shortage of health personnel in the district.

5.3.6 Child immunization status in Bahi district by division (2002-2007)

The Child immunization services in the district have been mainly on, among others BCG, DPT3, OVP3, Measles and TT2. Available data provide information on immunization coverage for three out of the four divisions located in the district; namely, Mwitikira, Mundemu and Bahi; data for Chipanga division were not available. Table 5.7 – 5.9 gives an account of child immunization in Mwitikira division.

Table 5.7: Child immunization status in Mwitikira division

Immunization	2002 Dodoma rural			2005 Dodoma rural			2006 Dodoma rural			2007 Bahi district		
	Target	No.	%	Target	No.	%	Target	No.	%	Target	No.	%
BCG	386	299	78	301	382	127	330	278	84	340	172	51
DPT3	386	386	100	305	336	110	330	323	98	340	201	59
OVP3	254	215	85	169	199	118	194	166	86	200	100	50
MEASLES	386	388	100	305	377	124	330	331	100	340	213	63
TT2	384	189	49	979	370	38	898	228	25	920	320	35

Source: Bahi District Medical Officer

From Table 5.7 it can be seen that Mwitikira division has good immunization coverage between the 2002 and 2006, as compared to that of 2007.

Table 5.8: Child immunization status in Mundemu division

Immunization	2002 Dodoma rural			2005 Dodoma rural			2006 Dodoma rural			2007 Bahi district		
	Target	No.	%	Target	No.	%	Target	No.	%	Target	No.	%
BCG	402	388	97	452	516	114	471	445	94.5	350	343	98
DPT3	402	375	93	452	442	98	471	479	101.7	350	329	94
OVP3	402	398	99	452	447	99	471	479	101.7	350	309	88
MEASLES	402	352	88	452	390	86	471	474	100.6	350	360	103
TT2	402	217	54	452	244	54	471	197	41.8	350	129	37

Source: Bahi District Medical Officer

Table 5.8 shows that, with the exception of TT2, Mundemu division is having good immunization coverage in since 2002 to 2007. In fact as compared to other divisions Mundemu division is doing far better than others.

Table 5.9: Child immunization status in Bahi division

Immunization	2002 Dodoma rural			2005 Dodoma rural			2006 Dodoma rural			2007 Bahi district		
	Target	No.	%	Target	No.	%	Target	No	%	Target	No.	%
BCG	1480	490	33	1701	1157	68	-	-	-	1491	911	61
DPT3	1436	578	39	1443	502	34	-	-	-	1491	868	58
OVP3	1490	595	40	1702	703	41	-	-	-	1488	1076	72
MEASLES	1518	428	28	398	150	38	-	-	-	1490	769	51
TT2	-	-	-	-	-	-	-	-	-	-	-	-

Source: Bahi District Medical Officer

Table 5.9 shows that, there is poor immunization coverage in Bahi division with immunization coverage in different years for most of the diseases being below 70%.

5.3.7: Basic Health Indicators in the Region

Basic health indicators in the district are for the year 2002; Table 5.10 provides a summary of these indicators with indication of the Bahi district position in comparison with other district in Dodoma region.

Table 5.10: Basic health indicators in the district 2002

	District				
Variable	**Dodoma rural (Bahi and Chamwino)**	**Kondoa**	**Mpwapwa**	**Kongwa**	**Dodoma Urban**
Infant mortality rate (IMR) (per 1,000 births)	152	115	80	-	130
Under five mortality rate (U5MR) (per 1,000 births)	157	202	100	-	220
Maternal mortality rate (MMR) (per 100,000 births)	400	130	339	661	214
Life expectancy (Years)	51	53	47	52	56

Source: Dodoma region profile, 2003

Data from the Table 5.9 indicates that Bahi and Chamwino district – the then Dodoma rural district are worse in all indicators presented in the Table. Mpwapwa district is doing better in IMR and U5MR, but poor in MMR and life expectancy. Dodoma urban district, though with high life expectancy than the rest of the district, still is doing worse in other indicators as compared to Kondoa, and partly Mpwapwa district.

5.4 Education sector

5.4.1 Primary education

5.4.1.1 Distribution of primary schools and standard one pupil enrolments

In the year 2008 the required number of primary schools in the district were 112 schools, however, the available number of primary schools were seventy 70, signifying the there was a deficit of 42 primary schools in the district. The distribution of primary schools by division is given in Table 5.11.

Table 5.11: Distribution of Primary Schools in the Divisions

Division	Required	Available	Shortage
Chipanga	34(30.4%)	20(58.8%)	14(41.2%)
Bahi	26(23.2%)	18(69.2%)	8(30.8%)
Mundemu	36(32.1%)	21(58.3%)	15(41.7%)
Mwitikira	16(14.3%)	11(68.8%)	5(31.2%)
Total	**112**	**70(62.5%)**	**42(37.5%)**

Source: Bahi District Education Officer, 2008.

Table 5.11 indicates that Mundemu and Chipanga divisions are required to have many schools than Bahi and Mwitikira divisions. It also shows that 68.8% of the required primary schools in Mwitikira division were available, while nearly 42% of the required schools in Chipanga and Mundemu were lacking.

Owing to enrollments, data from district education officer shows that boys enrolled for the year 2007 exceeded the target; however, in the year 2008 there was a decline in enrolment for both girls and boys. The problem was more for girls than for boys (Table 5.12).

Table 5.12: Standard one gross enrolment

SEX	2007			2008		
	Target	Registered	%	Target	Registered	%
Boys	2889	3145	109	2958	3202	108
Girls	3111	3119	100	3616	3156	87
Total	6000	6264	104	6574	6358	97.7

Source: Bahi District Education Officer, 2008

Table 5.12 shows that in 2007 primary school enrollment were targeted at 6000 pupils and in 2008 were targeted at 6574. The performance as indicated in the Table reveals in 2007 the target was surpassed by 4% and that in 2008 there was a decline in enrollment from 104% in 2007 to 97.7%.

5.4.1.2 Status of primary school facilities in the district

Data presented in Table 5.13 shows that the district faces a shortage of essential facilities to facilitate smooth learning; as indicated by the extent of inadequacy ranged from 31% to 91%.

Table 5.13: Status of primary school facilities in the district

Particulars	Building			Furniture				
	Class room	Teachers' house	Latrines	Desks	Tables	Chairs	Shelves	File cabin
Requirement	712	529	1437	11206	1386	1386	712	589
Available	491	132	550	5907	631	867	157	54
Shortage	221	397	887	5299	755	519	555	535
% shortage	31%	75%	62%	47%	54%	37%	78%	91%

Source: Bahi District Education Officer, 2008

From the information in Table 5.13, it can be seen that in terms of buildings; shortage of teachers' houses is more pronounced than other required buildings. On the other hand, when considering shortage of furniture; file cabin shortage is more pronounced than others.

5.4.1.3 Status of primary school facilities in the district

Information from district education officer shows that the district is supposed to have 758 primary school teachers, nevertheless by the year 2008 there were 559 teachers in the district. Table 5.14 shows the number of available teachers and their qualifications.

Table 5.14: Number of primary school teachers by sex and qualifications

Education Level	Male	Female	Total
Degree	0	0	0
Diploma	7	0	7
Grade A	273	214	487
Grade B/C	60	05	65
Total	**340**	**219**	**559**

Source: Bahi District Education Officer, 2008

Shortage of primary school teachers and facilities have resulted into undesirably high ratios of some basic education indicators, such as pupils - class ratio; pupils - desk ratio; and pupils – book ratio (Table 5.15). Therefore, much effort is still required for improving facilities and teachers for primary schools in the district.

Table 5.15: Basic pupil – facility/teacher ratios in the district

Item	Year	
	2007	2008
Pupils - class ratio	1:67	1:84
Pupils - desk ratio	1:70	1:70
Pupils - book ratio	1:6	1:6
Pupils – teacher ratio	1:54	1:54

Source: Bahi District Education Officer, 2008

Table 5.15 indicates that the district is doing better/worse in terms of the basic indicators as compared to the national or regional standard.

5.4.1.4 Primary school pupils drop out

Data from Table 5.16 indicates that 63.7% of students enrolled in standard I the year 2001 managed to complete standard VII, implying a drop out of 36.3%. The data further indicate the drop out faces boys and girls equally. Reasons associated to this drop out include low income by majority of the parents; traditions and culture like girls' early marriage and boys looking after livestock.

Table 5.16: Pupil dropout rate in primary school

Variable	**Boys**	**Girls**	**Total**
Pupils admitted in std I in 2001	1812	1703	3515
Pupils completed std VII in 2007	1163	1076	2239
Completion rate	64.18	63.18	63.70
Dropout rate	35.82	36.82	36.30

Source: Bahi District Education Officer, 2008

5.4.1.5 Pupils sat for standard VII examinations selected to join secondary schools

Data from Table 5.17 show that about 56% and 39% of boys and girls respectively, sat for standard VII examination in 2007 passed. If boys and girls are combined, the overall performance of students passed the exam in 2007 stand at 47.7% implying a general poor performance.

Information from the district education office reveals that due to shortages of secondary schools in the district, of those 47.7% students who passed the examinations only 35% got an opportunity to continue with secondary school education with most of them being boys. However, compared to past years, the number of pupils joined secondary schools has increased significantly due to the introduction of community secondary schools in recent years.

Table 5.17: Pupils passed STD VII exams and joined secondary schools

Pupils	**2007**		
	Boys	**Girls**	**Total**
Sat for examination	1,163	1,076	2,239
Passed examination	512 (44.0%)	276 (25.7%)	788 (35.2%)
Selected to join secondary schools	512 (100%)	276 (100%)	788 (100%)

Source: Bahi District Education Officer, 2008

5.4.2 Secondary schools

5.4.2.1 Distribution of secondary education in the district

In the year 2006 there were five secondary schools only. However, towards the end of the year 2007 there has been a drastic change in number of these schools from the 5 (2006) to 20 (2007/2008). This change has been fuelled by the government policy of encouraging communities to establish secondary schools in each ward. Statistics shows that by 2008,

out of those twenty secondary schools only twelve (12) were operating and eight were under construction.

Unfortunately, as with primary schools, increased number of secondary schools has not matched with increased number schools facilities and staffs. Therefore provision of quality education in the district is quite challenging.

5.4.2.2 Status of secondary schools facilities

The status of secondary school facilities in the district by school is summarized in Table 5.18 indicating that up to 2008, Mundemu secondary school has many class rooms (75% of the required) than other schools followed by Bahi secondary school, having 68.7% of the required class rooms. Looking on availability of desks Chipanga secondary school is far better than others by having 85.5% of the required desks, followed by Mundemu having 82.5% (Table 5.18)

Table 5.18: Number of class rooms and desks in the district 2008

	School name	Class rooms			Desks		
		Required	Available	Deficit	Required	Available	Deficit
1	Mwitikira	16	8(50)	8(50)	361	252(69.8)	109(30.2)
2	Chibelela	16	5(31.3)	11(68.7)	320	44(13.8)	276(86.2)
3	Mtitaa	16	7(43.8)	9(56.2)	280	160(57.1)	120(43.7)
4	Mpalanga	16	5(31.3)	11(68.7)	160	94(58.8)	66(42.2)
5	Chikopelo	16	8(50)	8(50)	398	279(70.1)	119(29.9)
6	Chipanga	16	4(25)	12(75)	117	100(85.5)	17(14.5)
7	Kigwe	16	7(43.8)	9(56.2)	360	242(67.2)	118(32.8)
8	Bahi	16	11(68.7)	5(31.3)	419	224(53.5)	195(46.5)
9	Babayu	16	3(18.8)	13(81.2)	150	80(53.3)	70(46.7)
10	Chanama	16	3(18.8)	13(81.2)	-	-	-
11	Mundemu	16	12(75)	4(25)	350	290(82.9)	60(27.1)
12	Ibihwa	16	5(31.3)	11(68.7)	166	102(61.5)	64(48.5)
13	Lamaiti	16	3(18.8)	13(81.2)	139	160(115.1)	-
14	Magaga	16	4(25)	12(75)	160	80(50.0)	80(50.0)
15	Msisi	16	3(18.8)	13(81.2)	160	40(25.0)	120(75.0)
16	Mpamantwa	16	3(18.8)	13(81.2)	-	-	-
17	Ibugule	16	3(18.8)	13(81.2)	-		-
18	Chikola	16	5(31.3)	11(68.7)	120	80(66.7)	40(33.3)
19	Zanka	16	7(43.8)	9(56.2)	120	80(66.7)	40(33.3)
20	Ilindi	16	3(18.8)	13(81.2)	-	-	-
Total		**320**	**109(34.1)**	**211(65.9)**	**3780**	**2307(61.0)**	**1473(39.0)**

* Numbers in brackets are percentages

Source: Bahi District Education Officer, 2008

5.4.2.3 Status of secondary schools teachers

The district education office estimated that the required number of teacher by 2008 in the district was to be 183. However, in the same year the available number of teachers was 84 only which is 45.9% of the total required number of teacher. Table 5.19 below summarises the distribution of teachers in secondary school located in the district.

Table 5.19: Distribution of secondary school teachers by school in 2008

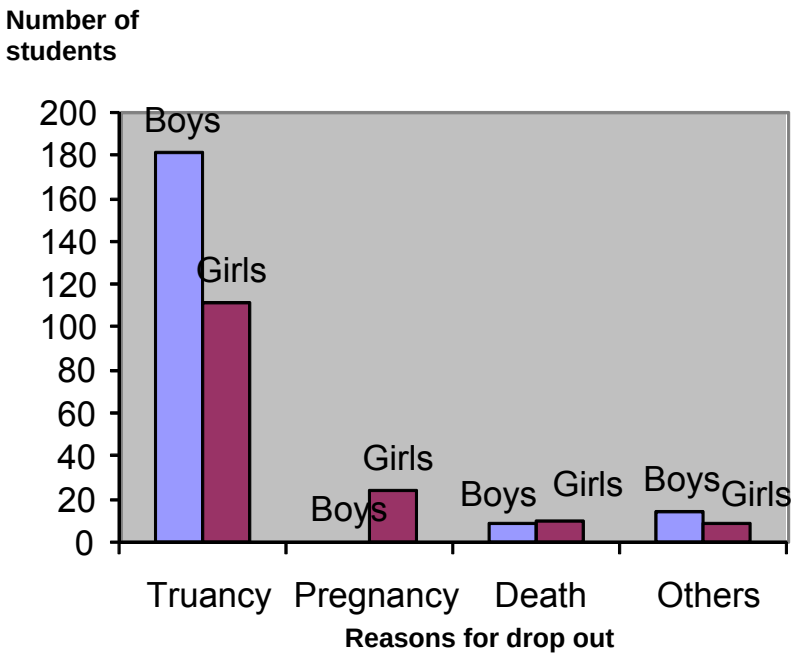
S/N	School name	Teachers		
		Required	Available	Deficit
1	Mwitikira	37	9(24.3%)	28(75.7%)
2	Chibelela	-	-	-
3	Mtitaa	20	5(25.0%)	15(75.0%)
4	Mpalanga	-	-	-
5	Chikopelo	14	5(35.7%)	9(64.3%)
6	Chipanga	10	5(50.0%)	5(50.0%)
7	Kigwe	20	13(65.0%)	7(35.0%)
8	Bahi	25	14(56.0%)	11(44.0%)
9	Babayu	12	4(33.3%)	8(76.7%)
10	Chonama	-	-	-
11	Mundemu	17	8(47.1%)	9(62.9%)
12	Ibihwa	8	6(75.0%)	2(25.0%)
13	Lamaiti	20	15(75.0%)	5(25.0%)
14	Magaga	-	-	-
15	Msisi	-	-	-
16	Mpamantwa	-	-	-
17	Ibugule	-	-	-
18	Chikola	-	-	-
19	Zanka	-	-	-
20	Ilindi	-	-	-
Total		**183**	**84(45.9%)**	**109(54.1%)**

Source: Bahi District Education Officer, 2008

5.4.2.4 Status of drop out in secondary schools

Students drop out in secondary schools is among the challenges facing this sub sector in the district. In the 2007 alone the district recorded a total drop out of 358 students, with 57% (204) being boys. The reasons associated to secondary school drop out in the district are truancy (81.6%) 292, pregnancy (6.7%) 24, death (5.3%) 19 and other reasons (6.4%) 23. Figure 5.2 below shows secondary students drop out by reasons and sex in the year 2007.

Figure 5.2: Secondary school students drop out by reasons and sex



Source: Bahi District Education Officer, 2008

5.4.3 Tertiary education in the district

The district has two institutions offering tertiary education; namely, Kigwe DCT and Ibihwa DCT Technical Colleges. These colleges are located in Kigwe and Ibihwa ward respectively; they are all owned and operated by the Diocese of Central Tanganyika (DCT), implying that there is no government institution offering tertiary education in the district. This situation also indicates a serious shortage of institutions offering tertiary education in the area.

SECTION SIX

6.0 CROSS CUTTING ISSUES

6.1 Introduction

The cross-cutting issues discussed in this section include governance and development actors existing in the district and the manner in which they operate. Other cross cutting issues such as environment, HIV/AIDS and poverty have been adequately discussed in the preceding sections.

6.2 Governance

6.2.1 Introduction

Governance is defined as a system of making decisions and managing of country's affairs and resources. Good governance is the one that is transparent; accountable; follow the rule of law; and involves people in decision making on matters affecting their life.

Governance is therefore exercising of power on political, socio-economic and administrative issues with the aim of maintaining peace and socio-

economic development. Governance is done through administrative structure in a society. The administrative structure of the Bahi district is consisting of four divisions, twenty wards, fifty-six villages and about 450 Vitongoji.

6.2.2 Governance Organization

Government at any level is an instrument of power and has three organs which assist the government to implement her targets. The organs are known as executive, legislative and judiciary. The executive is an organ which has government workers, ministers and president and the core business is to coordinate administrative functions and execute scheduled activities for socio-economic development and poverty reduction. The Legislative is mainly the Parliament which has a core business of making and amending laws. The Judiciary is an organ which maintains laws and orders of the country.

The key elements of governance are effectiveness and efficiency of the administrative units in conducting and attending meetings, forming and coordinating functions of various committees,

conducting seminars, involving stakeholders in planning and implementation of community targets, and effectiveness and efficiency in reporting and dissemination of information on community's matters.

Like other districts in Tanzania, governance in Bahi district takes place through delegation of power to planning and implementation levels which emanates from district level to the village level.

6.2.2.1 District level

This level has departments working under directives of the executive director and the district commissioner. The main activities include translation of regional and national policies to fit the district and lower levels in the district, coordinating development and political activities at the district level and other levels in the district.

6.2.2.2 Ward Level

In Bahi district there are twenty wards which are always represented to the district by elected councillors. Like other levels this level has executive officers whose main activities are to provide coordination services to all villages in the respective wards. The ward has ward development committee (WDC) which is under the chairmanship of the councillor and the ward executive officer is a secretary. The WDC is responsible for coordinating development plans of all villages in the ward.

6.2.2.3 Village Level

Village governments were created by the local government (District Authorities) Act no 7 of 1982. Each village has a village council with 25 members consisting of sub-village representatives, religious leaders and extension officers in the ward.

Decision making is through the village assembly and the core committees. Sometimes the development committees make decisions on the matters concerning the village on behalf of the village assembly. The villagers have two major sittings,

namely; the village annual general assembly and the village councils meetings. The village council has the power of making by-laws necessary for implementation of village priorities. These by laws are first discussed by at the village annual general assembly before they become operational.

6.2.3 Stakeholders' involvement in district development issues

Planning process of the Local Government Authorities is based on available opportunities and obstacles to development which involves stakeholders in identification of opportunity and obstacles to development and formulates strategies to solve challenges caused by the existing obstacles. The local government has directed stakeholders to involve beneficiaries at all stages of planning and implementation. Various studies conducted in Bahi district showed that majority of stakeholders' involvements in planning and implementation of priorities at village level is still a challenge.

6.3 Development actor in the district

6.3.1 Introduction

As with other districts in Tanzania, Bahi district have got several development actors, which contribute to socio economic development activities by providing different support services. The actors are categorized in different groups like Ministries, regional administrative secretariat, local authority, and Local and International Organizations. Each actor has its own roles to the development of the community. These roles are presented in the following subsections.

Ministry for instance, is the policy setter and provider of grants to the regional administrative secretariat and district council level. The regional administrative secretariat has the role of giving advice to the local authorities; and the Local authority (district council) is a supervisor of the implementation of policies and directives. District council has also got the role of mobilizing and organizing other actors in the district, and giving feedback to the regional administrative secretariat and respective ministries.

The community has a role of identifying their own problems and needs which are to be solved by various actors in collaboration with them. Both local institutions (i.e. Local NGOs, FBO, CBO, SACCOS and schools) and international institutions (i.e. NGOs, international development agencies) have the roles of supporting the implementation of the policy through provision of socio-economic services like health services, formal and/or informal education and capital generation.

6.3.2 Distribution of development Actors in the district by role and area of operation

Data present in Table 6.1 indicate that there is about 30 development actors operating in the district. Most of these development actors (46.66%) are local organizations i.e. CBOs and FBOs); about 23% are international organizations. The Table further shows that the local organizations mainly concentrates on promotion of entrepreneurship (i.e. training on livestock keeping and gardening, handcraft skills), provision of health services and environmental conservation; and the international organizations

concentrates on agriculture and food security, health and to some extent primary education.

Table 6.1: Distribution of international organization by roles and areas of operations, 2008

ACTOR	OBJECTIVES	LEVEL OF ACTION	AREA OF OPERATION (wards)	ACTIVITIES
IFAD	Support agricultural activities and social responsibilities	International	Mpalanga ward ADP-Mundemu ADP-Chipanga	To build classrooms
CMSR	Combating HIV/AIDS and provide food aids to the victims	International	Msisi ward Ibugule ward	To provide food, clothes aids and education to HIV/AIDS victims and orphans
WFP	Control food shortage (food security) and providing food aid	International	Bahi district	To educate people on how to store food and plant crop which sustain the prevailing drought whether
World Vision	Provision of social services such as Health, education and water	International	Bahi district	To provide food, clothes aids and education to HIV/AIDS victims and orphans

AFRICARE	Control spread of malaria	International	Zanka ward Ibhiwa ward Ilindi ward Mpalanga ward Mtitaa ward Msisi ward Chipanga ward	To provide food aid, mosquito nets, clothes, to children living in difficult condition including orphans
DANIDA	Raise education standard	International	Bahi district	To building classrooms
ITI	Reduction of eye diseases such as trachoma	International	Bahi district	To educate on personal hygienic

Table 6.2: Distribution of national organization by roles and areas of operations, 2008

ACTOR	**OBJECTIVES**	**LEVEL OF ACTION**	**AREA OF OPERATION (wards)**	**ACTIVITIES**

Ministries	Set policies	Central Government	Bahi District	To train the staffs with respect to different ministries To provide capital grants
Regional Secretariat	Provision of advisory services to all sectors in local levels authorities	Regional	Bahi District	To Provide advise to all sectors in local government
Local Authority	Implementation of policies and maintain supervision	District to sub village level	Bahi District	To supervise and link policies between ministries and local levels and implementation policies

Table 6.3: Distribution of FBOs by roles and areas of operations, 2008

ACTOR	**OBJECTIVES**	**LEVEL OF ACTION**	**AREA OF OPERATION (wards)**	**ACTIVITIES**

YWCA	Self reliance to youth	Local	Mwitikira ward Mundemu ward	• Tailoring • Entrepreneurship
DCT	Provision of social services and aids (Health, education and worship)	Local	Ilindi ward Makanda ward Lamaiti ward Chikola ward Ibihwa ward Zanka ward Chipanga ward	Social Services • Health (HIV/AIDS) • Water (Wells) • Education (nursery schools)

Table 6.4: Distribution of CBOs by roles and areas of operations, 2008

ACTOR	OBJECTIVES	LEVEL OF ACTION	AREA OF OPERATION (wards)	ACTIVITIES
RENATA	Self reliance to women	Local	Bahi ward	Buying and selling agricultural crops
SULUNGAI (Women gardening)	Self reliance to women	Local	Bahi ward	Crop gardening
WASTARA	Raise standard of living	Local	Bahi Ward	Loan
FARAJA	AIDS	Local	Zanka ward	To provide foods, clothes, to orphans
Livestock cooperative	Improve Livestock breeding and poverty reduction	Local	Ilindi ward Mindola ward	Livestock keeping
WEMA	Improve nutrition and raising individual's income	Local	Msisi ward	Keeping dairy goat

Mkombozi Beekeeping	Raise individual's income	Local	Msisi ward	Keeping bees
AMCOs GROUP	Increase food production	Local	Mtitaa ward	To provide agricultural inputs (seeds), small irrigation schemes
Bega kwa bega Group	Self reliance	Local	Kigwe ward	Salt mining
WENEZI	Environmental conservation	Local	Makanda ward	Tree planting and making firewood stoves
KISEDET	Youths empowerment on self reliance activities and raising income	Local	Kigwe ward	To train youth on carpentry, tailoring, livestock keeping, mushroom production and processing

SACCOS	Raise capital and reduce poverty	Local	Msisi ward Mpalanga ward Mwitikira ward Lamaiti ward Ibihwa ward Mtitaa ward Nondwa ward Bahi ward Mundemu ward	To improve savings and provide loans To training entrepreneurs

Table 6.5: Distribution of NGOs by roles and areas of operations, 2008

ACTOR	OBJECTIVES	LEVEL OF ACTION	AREA OF OPERATION (wards)	ACTIVITIES
NGO's DONET	Conserve environment	Regional	Zanka ward Babayu ward	To provide seminars on environmental conservation
DODEA	Conserve environment	Regional	Makanda ward Ibihwa ward	Tree nurseries Distribute tree seedlings and growing tree planting, and selling to the community
AFNET	Combating malaria	National	Mundemu	To distribute mosquito nets with NGAO
TAWLA	Support women on human rights and laws	National	Bahi District	To educate women and create awareness on human rights
TASAF	Poverty reduction and support Social Services	National	Zanka ward Mpalanga ward	To build classrooms, dispensaries, wells, deep tanks
TANAPA	Conserve wildlife societies and support social services to the neighbouring villages	National	Zanka ward	To build classrooms, deep tank and educate people on environmental conservation

SECTION SEVEN

7.0 POTENTIAL AREAS FOR INVESTMENT

7.1 Introduction

Bahi district has many opportunities which can be utilized for socio-economic gain. Detailed explanations of these opportunities are as given in the next paragraphs:

7.2 Human capital

The District has unutilized manpower that can be used in economic production. Despite the low education they have, still these group can facilitate economic development of the district if they will be empowered. However, the existing empowering development actors have tried to facilitate their economic activities though more effort is required. It is not an accident to meet the youth moving around the town operating small business as they call them ‘ matching guys’ who operate under the very minimal capital.

This shows that they are willing to invest but they have no capital. Thus provision of investment opportunities such as financial as well as technical assistance will expand their investment areas. Empowerment of the youth in global economy should not only concentrate on financial assistance but also in technical assistance. Therefore this age group can be empowered to establish small industries by using the available resources.

7.4 Natural resource

7.4.1 Water resources

This is very important opportunity which a district should identify. In the District there are water sources which if utilized many economic gains can be realized. There is a seasonal rive called Bubu which supplies water for irrigation. This irrigation is practised in Bahi Sokoni where paddy is grown. Despite the production of paddy which has been a major cash as well as food crop in the area, fishing project can be established in viable wards. Thus, irrigation

agriculture emphasis as well as fishing could lead to employment, improve food security and increase of income to the district and its effect will spill over to other districts.

7.4.2 Winds

In Bahi wind blows from East/south to northwest. The wind is usually dry contributing to the semi-arid condition of the area. The wind speed increases in July with the strongest winds occurring on October. During the driest season the wind speed is higher as compared to the wet season. This is a resource for generating electricity for domestic and industrial use.

7.4.3 Mining

Mining sector in the district is still in the infant stage; currently what exist in the district are small scale salt, phosphate and gold mining carried out by local people using traditional methods. Gold is mined at Mafurungu hills in the western part of the district, phosphate in Chiwela and salt in Mpamantwa, Lamaiti, Chali, Kigwe and Ilindi wards. The largest deposit of salt is found in Ilindi ward. Several local people are engaged in

salt mining for domestic uses and export to other regions/districts in the country. Uranium is still in exploration in Bahi and Mpamantwa wards. Thus, the empowering of the small scale miners can lead to high production of mines in a high quantity and quality for domestic and export purposes.

7.4.4 Forest products

Relatively high altitude areas are located in the northern part of the district wherein there is Chenene Mountain ranges covered with dense forests. The forests provide posts, charcoal and fuel wood, honey, wax, herbs and other forest products to the community. Thus, if good arrangements are made these forest products forms another area for investment.

7.4.5 Land for crop production

The district has adequate area for cash and food production. The major crops grown in the district include Maize, Sorghum, Bulrush millet, groundnuts, sunflower, paddy, Bambara nuts, cassava, sweet potatoes and to a lesser extent

finger millet, getropher and grapes. Cereals like Maize, Sorghum, Bulrush millet and finger millet, cassava and sweet potatoes are mainly grown for food while paddy is for both cash and food. Other crops which are mainly grown for both cash and food are Groundnuts and Bambara nuts. Sunflower and simsim are mainly grown for cash. Thus, land for crop production is another area for investment, since there is possibility for producing and processing various crops produced in the area.

7.5 Processing of livestock products

Total population of cattle, goats and sheep in the district has is 189,841, 39,470 and 7,604, respectively (Livestock census, 2006). This amount is enough to feed the industry as raw material. Therefore meat processing industry and other livestock products such as milk, cheese, calcium phosphates from bones, skin and hides could be established.

7.6 Provision of education services

Investment in education sector at all levels from pre-primary school education to University is now open to private sector. In the district there is primary and ordinary level secondary school in each ward; although its quality is still low. Pre-primary school education, advanced secondary school education, Vocational training and university education are virtually non-existent. Therefore, there is a room further investment in this sector.

7.7 Provision of communication services

Telecommunications are vital in servicing and stimulating development. Investment in the quality and quantity of telephones, internet and fax links is highly needed in the district. The road and railway network in Bahi District is of greater impact on the development of the district. The railway line is important for inter-regional trade of Bahi and other linking areas including Dar-es Salaam, Morogoro, Singida, Tabora, Shinyanga and Mwanza.

APPENDICES

APPENDIX I: DODOMA REGION IN BRIEF

1.0 Location

Dodoma Region is one of the central regions of Tanzania main land. It lies between latitude 4^0 and 7^0 3^0 Sounth and longtude 35^0 to 37^0 East.

2.0 Bounderies

North - Arusha Region

East - Morogoro and Tangs Regions

South - Iringa Region

West - Singida Region

3.0 Land area

Total land - 41,311 sq.km

Percentage of total land area to that of Tanzania - 5%

4.0 Census population

1978 - 972,005

1988 - 1,235,277

2002 - 1,698,996

5.0 Climate

i) Rainfall

a. Dry savanna type of climate
b. Rainfall range between 400mm – 900mm annually
c. Long dry season starts late April to early December

ii) Temperature

a. Maximum 26.8^0C
b. Minimum 21^0C

iii) Altitude

Average of 1040 metres abopve sea level

6.0 Administrative units

Districts	-	6 (2007)
Division	-	26 (2002)
Wards	-	145 (2002)

APPENDIX II: BAHI DISRTICT IN BRIEF

Location

Bahi District is one of the six districts of Dodoma Region. It extends between latitude 4° and 8° South and between longitude 35° and 37° Easts.

Capital -Bahi ward

Year of establishment - 2007

Land area

a. Total land area - 5428 sq. Km.

b. Percentage of total land area to that of Dodoma region - 13%

5.0 Administrative units

Division	-	4
Wards	-	20
Villages	-	5

6.0 Bounderies

East	-Dodoma municipal and Chamwino district
North	-Kondoa district
South west	-Iringa region
West	-Singida region

7.0 Climate

The district has semi- arid type of climate. It experiences one rainfall in a season during the months of November to April and the rainfall is usually erratic. Annual rainfall ranges from 500 – 800mm and the temperature ranges from 29°c to 33°c.

8.0 Population

Total population - 178,981 (as per 2002 population census)

Population density: - 33/km^2 (as per 2002 population census)

Sex ratio: - Male/female = 0.89 (as per 2002 population census)

9.0 Major ethnic groups: Gogo

10.0 Major languages: Gogo, Swahili

11.0 Major crops

Millet, Sorghum, Maize, Paddy, Cassava, Potatoes, Legumes, Groundnuts, Sunflower and Simsim

12.0 Major livestock

Cattle, Goats, Sheep, Chickens, Pigs and Donkeys

13.0 Important minerals:

Salt, lime, Gold and Uranium which is under exploration

APPENDIX III: TANZANIA AGRO-ECOLOGICAL ZONES

Zone	Sub-Zone and Areas	Soils and Topography	Altitude	Rainfall (mm/yr)	Growing Season
I. Coast	North: Tanga (except Lushoto) Coast & Dar es Salaam South: Eastern Lindi & Mtwara (except Makonde Plateau)	Infertile sands on gently rolling uplands Alluvial soils in Rufiji Sand and unfertile soils Fertile clays on uplands & river flood plains	Under 300m	North: Bimodal 750 - 1200 mm South: Unimodal 800 - 1200mm	North: October-December & March - June South: December - April
II. Arid Lands	North: Serengeti, Ngorongoro Parks, part of Masailand, Masai Steppe	North: Volcanic ash and sediments. Soils variable in texture and very susceptible to	North: 1300 - 1800m	North: Unimodal, unreliable 500 - 600 mm	March - May

	Tarangire Park, Mkomazi Reserve, Pangani & Eastern Dodoma	water erosion South: Rolling plains of reddish sandy clays of low fertility. Susceptible to water erosion Pangani river flood plains with saline, alkaline soil	South 500 - 1500m	South: Unimodal, unreliable 400 - 600 mm	
III. Semi-Arid Lands	Central Dodoma, Singida, N.Iringa, some of Arusha, Shinyanga South-eastern:	Central: Undulating plains with rocky hills and low scarps. Well-drained soils with low fertility. Alluvia hardpan and saline soils in Eastern Rift Valley and Lake Eyasi. Black cracking soils in Iringa	Central 1000 - 1500m South-	Central Unimodal, unreliable 500 - 800 mm South-eastern:	December - March

	Morogoro (except Kilombero & Wami Basins & Uluguru Mts) Also Lindi & SW Mtwara	South-eastern: Flat or undulating plains with rocky hills. Moderately fertile loams and clays in South (Morogoro) infertile sands in centre.	eastern 200 - 600m	Unimodal, unreliable 600 - 800 mm	
IV. Plateaux	Western: Tabora, Rukwa (North & Centre), Mbeya (North), Kigoma, part of Mara Southern: Ruvuma & Southern Morogoro	Western: Wide sandy plains & Rift Valley scarps. Flooded swamps of Malagarasi & Ugalla rivers have clay soil with high fertility Southern: Upland plains with rock hills. Clay soils of low to moderate fertility in South, infertile sands in	800 - 1500m	Western: Unimodal, 800 - 1000mm Southern: Unimodal, very reliable, 900 - 1300mm	November - April

		North			
V. Southern & Western Highlands	Southern: A broad ridge from N. Morogoro to N.Lake Nyasa, covering part of Iringa, Mbeya South-western: Utipa plateau in Sumbawanga Western: Along the shore of L. Tanganyika in Kigoma and Kagera	Southern: Undulating plains to dissected hills and mountains. Moderately fertile clay soils, with volcanic soils in Mbeya South-western: Undulating plateaux above Rift Valley. Sandy soils of low fertility Western: North-South ridges separated by swampy valleys. Loams and clay soils of low fertility in hills with alluvium and ponded	South 1200 - 1500m S.West 140 - 2300m West 1000 - 1800m	Southern: Unimodal, reliable, local rain shadows, 800 - 1400mm South-western: Unimodal, reliable 800 - 1000 mm Western: Bimodal 1000 - 2000mm	Northern: December - April South-western: November - April Western: Oct. - December & February - May

		clays in valleys.			
VI. Northern Highlands	Northern: foot of Mt. Kilimanjaro & Mt. Meru, Eastern Rift to Lake Eyasi Granitic Mts: Uluguru Mts in Morogoro Pare Mts in Kilimanjaro, Usambara Mts in Tanga, Tarima Highlands in Mara	Northern: Volcanic uplands. Volcanic soils from lavas as ash. Deep fertile loams & clays. Soils in dry area prone to water erosion Granitic Mts: Steep mountains side in highland plateaux. Soils are deep, friable and moderately fertile on upper slopes, shallow & stony on deep slopes	North 1000 - 2500m Granitic 1000 - 2000m	Northern: Bimodal, varies widely 1000 - 2000mm Granitic Mts. Bimodal and very reliable 1000 - 2000mm	Northern: Nov - February & March - June Granitic Mts. Oct. - December & March - June

VII. Alluvial Plains	K Kilombero (Morogoro) R Rufiji (Coast) U Usanga (Mbeya) W Wani (Morogoro)	K. Central clay plain with alluvial fans East & West R. Wide mangrove swamp delta. Alluvial soils, sandy upstream, loamy downstream in floodplain U. Seasonally flooded clay soils in North, alluvial fans in South W. Moderately alkaline black soils in East, and alluvial fans with well drained black loam in West		K. Unimodal, very reliable, 900 - 1300mm R. Unimodal, often inadequate 800 - 1200mm U. Unimodal 500 - 800mm W. Unimodal, 600 - 1800mm	K. November - April R. December - April U. December – March W.December - March