MAP OF THE MIGRATORY ROUTES OF THE NOMADS IN NORTHERN AND SOUTHERN RED SEA ZOBAS

WHO-ERITREA

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EXECUTIVE SUMMARY

Nomadic pastoralism is commonly practiced lifestyle in Sub-Saharan Africa. The lifestyle of nomadic pastoralists is often considered incompatible with the way of life or aspirations of the bulk of the population and vexes the plans of governments. Usually, the nomads move from place to place in search of grazing land for their livestock and drinking water for themselves and their herds.

In Eritrea, although the exact population size of the nomadic pastoralists is not known; various sources indicate that nomadic pastoralism is especially predominant lifestyle for a number of people who live on the peripheries (e.g., PENHA 1997)1. Nomadic pastoralism is especially common in the two zobas that border the red sea coast; i.e., the Northern and Southern Red Sea Zobas. The frequent movements of these populations mean they miss health services in static health facilities. To improve access to these services, and design appropriate response strategy it is very important to priori map the migratory routes of these groups. Accordingly, the Zobas have requested the WHO to assist them in this activity. The WHO has therefore commissioned WEKITA Consultancy Office in order to conduct this activity in NRS and SRS.

The main objectives of the study are: to identify the migratory and hard to reach populations by age group and gender; to identify the time and place for migration; as well as to map the migratory routes indicating time, place, and population.

The methodology applied to conduct the study included; Focus Group Discussions (FGD) with some of the nomadic people, community elders and women nomads; Desk review; as well as Key Informant Discussions (KID) with representatives of various social service rendering organizations.

The results of the study have shown that the general movement of these nomadic communities is seasonal. They tend to establish temporary settlements and stay for a week or two and continue their journey until they reach their final destinations. Duration of the journey varies from a day to one month depending on their anticipated final destination.

In total around 23 departures and 13 destination points are identified for the nomadic populations of NRS. Similarly there are around 30 departures and 11 destination points for the nomadic pastoralists in SRS. This indicates that although there are different departure points there are some common destination/arrival points where most nomads prefer to graze their livestock.

The nomads in NRS follow well defined routes to grazing reserves and watering points. Movement across Zobas is common and the nomads normally move long distances across the borders of three other Zobas. Cross border movement to the Sudan is also common from this Zoba. Generally, the Zoba is overwhelmed by across Zoba movement than internal movement. There is an overwhelming movement of families and communities from the Sub Zoba Shieb (NRS) to Geleb (Anseba) starting from the month of May up to September, other cluster of nomads migrate from sub zoba Foro (NRS) to Tserona (Debub) during May up to September still some large nomads migrate from the surrounding of Sub Zoba Afaabet and Nakfa to the

1 The Pastoral and Environmental Network in the Horn of Africa (PENHA), Health Needs Assessment of the Eritrean Nomadic Communities 1999; Asmara, Eritrea

surroundings of Zara and Bakla in Zoba Anseba. Internal movement within sub Zoba Ghindae especially from the camping sites of Agombosa to the upper plains of the zoba is also common to see.

In Southern Red Sea the movement is almost entirely done within the Zoba itself; and more specifically within adjacent places of the respective Sub Zobas. This is because; there is no marked difference in ecology, rainy season, as well as climatic conditions among the four sub zobas. Movement across Zobas is rare because the Zoba is bordered with Northern Red Sea Only. In the past some populations used to migrate to Ethiopia but this has tremendously decreased after the 1998 border war. In SRS movement is usually done by an individual herder the '*Loyna*'; who has to take the livestock of his family or tribe for a limited period of time. The nomads move to the places with relatively Mediterranean climate. *Siroru* and *Mindg*, *Afambo*, *Tio* and Gahro are home for most of the nomads in SRS during the dry season. The high movement seasons are between the months of April and October where the temperature reaches peak and there is very limited grass for grazing in the lower plains.

Information on the exact number of the mobile communities aggregated by age and gender is still scant because no study has been instituted before. However, the estimates made on this study can provide a good platform for health care planning purposes. The total number of nomads in Northern Red Sea is close to 82,000 which accounts for about 14% of the total population size. Similarly, the nomadic population in Southern Red Sea accounts for about 28% of the total population. Females account for over 51% of the total population of nomads in both of the zobas. Moreover, children account for the majority percent of the population. This suggests that health care services shall target these special groups.

Generally, not only does the nomad's lifestyle in both of the zobas provide a challenge for health care, but the poor roads and bridges also hamper healthcare delivery. This inadequate infrastructure increases the time and money spent on delivering health. Many patients or their families, have to walk long distances (sometimes more than 30 km) to reach a health center or walk to the main road to hitch a lift to the nearest hospital. Most villages are without a telephone or mobile telephone network. Hence, "A radio" communicator would ease the job greatly.

There is a serious need to mobilize adequate resources to provide community health services and deploy 'Health Promotion Officers' where appropriate. The construction of village health spots should be considered as an alternative strategy of providing effective health services. 'House to House' health services and Supplementary Immunization Activities should be invigorated to reach the most hard to reach communities.

Health services in targeted areas where many of the nomads and their livestock are gathered should be provided. For example, most of the nomads that migrate from Ghindae and Shieb sub-Zobas migrate to Geleb area in Zoba Anseba. Another place to which a significant number of nomads migrate is the area around Azhara River. Mostly the nomads from Afabet area go to Azhara. In addition to Geleb and Azhara, the grazing plains such as those found around Adi Keyih, Aiba, Tserona, and Mereb River are attractive grazing lands to the nomads that migrate from Foro and Ghindae sub-Zobas. Tio, Gahro, Afambo, Mindig, and Siroru are places in Southern Red Sea that are usually favored by most nomads as important grazing areas in the Zoba. The Ministry of Health branches in the two zobas need to focus on these grazing areas as they are usually more crowded with nomads than other places.

CHAPTER ONE

1.INTRODUCTION

1.1 Country Profile

Eritrea is situated in the Horn of Africa and lies north of the Equator. It has an area of 122,000 square kilometers. To the east, the country is bordered by the Red Sea, extending about 1,212 kilometeres from Ras Kasar in the north to Dar Elwa in the southeast. Djibouti borders Eritrea in the southeast, Ethiopia in the south, and the Sudan in the north and west. Administratively the country is divided into six Zobas (Regions), namely Anseba, Debub, Southeren Red Sea (SRS), Gash Barka, Maekel, and Northern Red Sea (NRS).

Rainfall in Eritrea ranges from less than 200 mm per annum in the eastern lowlands to about 1,000 mm per annum in a small pocket of the eastern escarpment. There are two major periods of precipitation in Eritrea. The first one, which is from June to September, covers both the western lowlands and the highlands. The second comes between October and March and covers the eastern lowlands.

Eritrea is strategically located along the Red Sea coast. Hence, it has fallen victim to many invaders and colonizers. The Ottoman Turks had stayed in control of the present day Eritrea from the middle of the sixteenth century to the second half of the nineteenth century when they were evicted by the Egyptians in 1872. In 1890, Italy declared Eritrea its first African Colony. In 1941, Italy was defeated and driven out from the Country by Britain, and the latter took over the administration of Eritrea. In 1952, Eritrea was federated with Ethiopia against the will of its people. The federation and subsequent annexation of Eritrea led to the Eritrean struggle for independence, which resulted in a destructive war lasting from 1961-1991. In 1993, a UN supervised referendum was held to determine Eritrea's political status; 99.8 percent of the voters chose independence.

Agriculture and pastoralism are the main sources of livelihood for about 80% of Eritrea's population. The agricultural sector depends on rain. Consequently, productivity is low and the agricultural sector, including livestock and fisheries, accounts for only about one-fifth of the gross domestic product (GDP). World Bank data profile for Eritrea suggests that the economy has been experiencing a steady growth through out the years 2001 till 2005. The growth record was the lowest in 2002 due to the severe drought followed by 2004 with a growth record of 2% only. The highest annual GDP recorded growth was at 4.8 % in 2005. Inflation which was as high as 19% in 2000 dropped to 10.3 % in 2005[2].

[2] *http://devdata.worldbank.org/external/CPprofile*

Eritrea is endowed with abundant natural resources including gold, copper, zink and granite as well as marble. [3] It has a vast arable land which accounts for about 26% of the total area. The Red Sea offers opportunities for the fishing industry, for expanding salt extraction industry, and tourism. At present, most of these natural resources have not been fully exploited.

Information on the size, distribution, and characteristics of the population is scanty and unreliable due to the fact that a population census has never been conducted since independence. Eritrea's interim poverty reduction strategy based on the 2002 estimate suggests that the population is about 4 million. The population is essentially rural with about 80% of the people living in the countryside. The population of Eritrea is not uniformly distributed throughout the country. About 55% of the population lives in the highlands. The age distribution is typical of high fertility regimes in which a larger proportion of the population is found in the younger age groups than in the older age groups. Eritrea is a multi-ethnic society with nine different ethnic groups speaking nine different languages and professing two major religions, namely, Christianity and Islam. The nine ethnic groups are: Afar, Bilen, Hedarib, Kunama, Nara, Rashaida, Saho, Tigre, and Tigrinya.

1.2 Objective of the Study

One of the major activities of the World Health Organization (WHO) in Eritrea is to support and facilitate sustainable outreach services carried out by the Ministry of Health (MOH) for hard-to-reach and mobile populations. In Eritrea, two Zobas are characterized by significant number of mobile populations. These are Northern Red Sea and Southern Red Sea. Both of these Zobas are identified by their arid, erratic often unreliable rainfall. Annual rainfall in most parts is less than 200mm and the soil has very low infiltration rate. This limited rainfall and poor soil quality has dictated the type of human activities in both of these Zobas. Most of the population relies on agriculture with pastoralist lifestyle being predominant. The population characteristically migrates from place to place in search of pastural ground and reliable water for livestock and human drinking.

Social services provision has been restricted due to the mobile nature of these populations. The government institutions promote sedentarization policy of the government. Hence, a remarkable portion of these nomads has been resettled as part of enacting the policy recently. Despite this policy, nomadism is still a problem for provision of timely health care services in both of these Zobas. The preferable means of providing health care services to these nomads is through outreach services which have been essentially established in both of these Zobas. However, the outreach services are not effective due to a number of reasons especially resource constraints. On the other hand, lack of information on the migratory route and the size of the nomadic populations in both of these Zobas is a constraint that militates against effective mobilization and allocation of resources.

[3] Tesfamariam Tekie Labor Market Trend 2003, ECOSOC Eritrea, 2003

In order to address this information gap, the WHO Country Office in Eritrea has commissioned a study to map the migratory routes of the nomadic populations of both the Northern and Southern Red Sea Zobas. The main objectives of the study are:

1. To identify the migratory/mobile and hard to reach population groups by age group and gender.
2. To identify the time and place for migration by these groups.
3. To map the migratory routes indicating time, place, and size of population.

This report is the result of the study conducted in the two Zobas.

1.3 Organization of the Study

This study is presented and organized into 9 sections. Findings from the two Zobas are presented differently in different topics. As much as possible the editor has attempted to ensure consistency of the flow of information, completeness, and appropriateness of grammar and spelling in the document.

Section One introduces the reader to the country and the study.

Section Two gives broad explanation and contextual definition of nomadism in Eritrea. Nomadic lifestyle and the general health condition of Eritrean nomads are briefly explained in this section.

Section Three is devoted to the methodology applied to conduct this study.

Section Four provides a broad outline of the characteristics and description of the study areas.

Section Five outlines the nomadic lifestyles in the two study areas.

Section Six is devoted entirely to the description of the current health services access in the two zobas with particular emphasis on the health needs of the nomads in the two zobas.

Section Seven provides a narrative explanation of the migratory routes of the nomads in the two Zobas. In this section departure and destination points are provided for the nomads that migrate from different angles and villages. Section Eight provides the population size of the most mobile communities. Section Nine provides the conclusive remarks and focused recommendations for outreach service planning purposes.

In addition to these sections the annexures provide more detailed statistics to supplement the main body.

Annex One provides the distance of the villages in SRS from the closest health facilities and the referral hospital in Assab. Annex Two provides the total population size of SRS classified by age cohort and gender.

Annex Three provides the population size of the most mobile communities in SRS classified by age cohort and gender.

Annex Four is similar to Annex Three but refers to NRS.

Annex Five provides the consolidated summary of mobile communities and the calendar of movement for the nomads that migrate from different departure points.

Tables containing detailed numerical data are annexed to provide sufficient quantitative information to decision makers. Especially Annex Five is useful for planning purposes as it provides the important movement calendar which could guide our understanding in planning outreach services. With regard to Annex Five, it is important to note that the population size of some mobile villages has been omitted as no information document was available. Especially in NRS the population size of some mobile villages in sub Zobas Nakfa, Adobha, and Karora is missing. To have more understanding about the villages that have mobile population and the movement routes, it is important to continuously refer Section Seven of this report.

1.4 To the Reader

Even though much effort has been made to describe the unique characteristics of the nomads in each of the two Zobas under each main topic, the reader is requested to tolerate the apparent but necessary duplication of information and analysis whilst treating the topics in the report for each of the two Zobas.

The pronouncement of certain names of places could not be as exact as when it is said by the local people. To the extent possible the writers have attempted to induce uniformity on the spelling of the names of places.

CHAPTER TWO

2. BACKGROUND TO NOMADIC PASTORALISM

Nomadism and pastoralism are the most notable life styles of many African populations. Most of the people in the continent depend on agriculture for subsistence. The farming and cultivation activities are usually undertaken by the sedentarized people.

On the other hand, the non-sedentarized and semi-sedentarized people engage largely in the rearing and herding of livestock for living. These people are commonly known as nomads or pastoralists.

Pastoralism is any production system that relies for substantial amount of its output on livestock. Essentially, pastoralism denotes economies that derive the bulk of the food supply from livestock using a great variety of herding practices on natural pasture. Pastoralism usually consists of highly heterogeneous groups in their objectives, strategies, needs, management style, and degree of mobility, hence, the basis for classification. According to Swift (1988) pastoralism is agriculture based life style in which 50% or more household gross revenue (i.e. the total value of marketed production plus the estimated value of the subsistence production consumed within the household) comes from livestock or livestock-related activities, or where more than 15% of household food energy consumption consists of milk and milk products produced by the household. The concept of pastoralism is much broader than nomadism. The latter refers to the mobility of pastoral populations and their animals mainly in search of grazing grounds. The nomads migrate from place to place with their livestock as influenced by the ecological, social, economic, and political conditions surrounding them. In short nomadism can be described as a strategy in pastoralism that is adopted to cope up with the changes that affect the productivity of their livestock.

Nomadic pastoralism is mostly prevalent in the arid and semi-arid zones of Africa. Pastoralists and nomads constitute about 16% of the total population of arid and semi-arid regions of East and West Africa (UNSO/UNICEF, 1992 cited in Tekeste et al., 1997).

The livelihood of pastoralists in many developing nations are directly linked to their animals, and thus to the environment in which they live. For this reason, any natural or human-caused crisis or disaster that affects the ability of the environment to provide resources to the people and livestock living in these regions places the people at serious risk of losing animals, and can impair their ability to cope with future emergencies. Generally, pastoral communities have the resources and the structural capacity to manage the effects of drought, but consecutive years of crisis can cause severe problems for pastoralists. Yet the underlying (and usually under recognized) reality is that pastoralism is a conservation strategy to make best use of dry lands both in space (in terms large and extensive ranges) and time (to make best use of seasonal grazing) to help pastoralists

secure their livelihoods in harsh and risk prone environments. This includes the importance of risk management and resilience enhancement. Even wildlife authorities tend to underestimate the importance of pastoralism as a conservation strategy, despite the fact that pastoralism is one of the few land use strategies that is compatible with wildlife conservation. If pastoralists' livelihoods are going to be improved and the degradation of the dry lands reduced, then it is critical that pastoralism is respected and developed as a sustainable land use system. Pastoralism is based on natural resource management that respects the limitations imposed on such dry lands, the necessity for mobility, and which integrates the local knowledge and institutional systems of pastoralists.

Another lifestyle characterized by migration of people from one place to another is called the transhumance. Transhumance involves regular seasonal migrations between, say, dry season and wet season pastures, upland and lowland pastures, upland and lowland cultivation. Probably a major difference between transhumance and nomadic pastoralism is that in transhumance the patterns of migration are more or less predetermined under normal circumstances. Nevertheless, predetermined migration does not in any way imply rigidity in traditional resource use by transhumants. These patterns are subject to substantial deviations in times of resource scarcity such as during drought. In general, the pattern of transhumance in East Africa is usually between highlands/plateaus and lowlands/flood plains.

2.1 Eritrean Nomads and Pastoralists

2.1.1 Outline of nomadic pastoralism in Eritrea

Constructing a context bound definition of pastoralism is difficult. Hence, in the case of Eritrea defining pastoralism is complex given that livestock make major contributions in various forms among the many ethnic groups throughout the country (Tekeste et al, 1997).

In Eritrea, nomadic pastoralism is widely practiced in three different ecological zones of the country. These are the northern plateaus and eastern lowlands of NRS, the eastern plains and semi-desert areas of SRS, and in the north-western lowlands of Gash Barka. According to Tekeste (1997) looking at their ethnic composition, the pastoral societies belong to the Tigre, Afar, and Beja ethnic groups, respectively.

Extensive long-range nomadism is a traditional practice in Eritrea, which over the last few years has diminished due to external circumstances. Typical nomads are found in the Sahel where large tracks of relatively unoccupied land allow free roaming. The Afar, Rashida, Beni-Amer, and the Hedareb are typical examples of nomadic pastoralists. Nomadic pastoralists among the Beni-Amer migrate seasonally with their herds to the Eritrean/Sudanese and Eritrean/Ethiopian borders. The Afar also migrates to the Eritrean Ethiopian and Eritrean Djibouti borders.

The Saho, Tigre, and Tigrinya practice transhumance between the Eastern coastal plains and the Eastern escarpments and the central highlands. The Tigrinya, Saho, and Tigre are sometimes called opportunistic farmers, as often practiced in the Sahel. They plant crops; usually sorghum and maize on their way to the East (where there is wet season pasture) and harvest them on their way back to the West in the dry season. The Beni-Amer migrate between dry season camps (*Demer Hagay*) and wet season camps (*Demer Kerem*) in search of forage and to distance themselves and their livestock from biting flies. In between there are many different degrees of transhumance depending on the number and kind of livestock raised, type of crops planted and distance traveled. Each of these groups has distinct production systems and set of strategies that have evolved through generations and are well adapted to the vagaries of arid and semi-arid regions.

According to Fre and Musa (1993) there are five main production systems in the context of pastoralism in Eritrea. These are:

i. *Highland Agro-pastoralism* is practiced in the hills or upland areas throughout Eritrea where the livestock are a major component of farming systems.
ii. *Valley-bound system* is characterized by the 'up and down' valley movement where the community move within very confined territories to and from the seasonal camps. This pattern is very common throughout Barka, the Gash Barka regions.
iii. *Sebk-Sagem* type of pastoralism is characterized by the uphill and downhill movements and is common in the Northern and Southern Red Sea Regions.
iv. *Cross-Boarder nomadism* refers to the pastoral activities where the nomadic pastoralists cross the borders between Eritrea and Sudan, as well as Eritrea and Ethiopia.
v. *Sea-related or coastal pastoralism* is combined with fishing and salt trade along the coastal areas in eastern Eritrea.

CHAPTER THREE

3. METHODOLOGY

Different data collection methods have been used in this study. These include questionnaire, key informant discussions and focus group discussions. Personal observation methods were also used. An outline of the methods used follows:

3.1 Document Review

Right before field takeoff many relevant documents were reviewed to help develop relevant data collection instruments. The World Health Organization's country office library, WEKITA Consultancy Office resource room, and other supplementary sources were adequately utilized.

Available literature on Eritrean pastoralists in general is sufficient as entry point for any scholarly or professional research; but information on the distinction between the various forms of pastoralism and particularly nomadism as a life strategy does not exist.

In 1997-1999 the Pastoral and Environmental Network in the Horn of Africa (PENHA) had instituted a health needs assessment of the Eritrean nomadic communities.

In this paper the study team has tried as much as possible to extract the theoretical perispectives on Nomadism from many documents. But it is necessary to acknowledge that we have heavily relied on the PENHA document because that is the only document we came across about the health needs of pastoralism.

Two desk teams were formed to conduct the desk review. Each of the desk teams had reviewed relevant documents on pastoralism as applied particularly to nomadic lifestyles and health needs. Relevant extracts from all documents were included within each section of this paper and the introductory part has by and large relied on the extracts of the desk review.

The population size for each of the villages in this study was obtained from various sources. Health statistics was obtained from the Health Managemetn Information System (HMIS) in each of the Zobas.

3.2 Key Informant Interview

Several key informants and opinion leaders were interviewed. In total 20 key informants have been interviewed of which 9 are from SRS and 11 are from NRS.

Checklists were prepared for the purpose of key informant discussions. The checklists are a combination of quantitative and qualitative nature. Information collected from the key informants was summarized using an already developed summary sheet.

Initially, brainstorming sessions and focused discussions were held with the WHO and MoH personnel to identify contact organizations and key informants. Based on the discussions a technical research protocol that included the list of potentially 'well informed' organizations was prepared and approved by the WHO.

Once on the field, key informants were selected based on the discussions held with the medical personnel of respective MoH branch offices in each of the zobas. The criteria used include:

- The length of time the 'key informant' has lived in the area;
- The extent to which the 'key informant's' organization is engaged in providing any social services to the nomads;
- the extent to which the 'key informant' is active in outreach services provided by any of the organizations mentioned below;
- the relevance of the study to the services of each of the organizations included and the longetivity the professional/personnel in charge of overlooking the provision of 'social services' to the nomads in that position;
- other individuals as recommended by the medical personnel of the ministry of health and the local administrators in each of the zobas;

The key informants were from the following organizations. Names and addresses of all key informants are provided in the annexure.

1. The branch office of the Ministry of Health in the two Zobas
2. Selected health facilities in each Zoba (hospital, health center, and health station)
3. The branch office of the Ministry of Agriculture in the two Zobas
4. The National Union of Eritrean Youth and Students' offices in the two Zobas
5. The National Union of Eritrean Women's branch offices in the two Zobas
6. The sub-Zoba administrations in each of the two Zobas
7. Opinion leaders, as well as
8. Well-informed individuals as recommended by the Ministry of Health and local administrators

3.3 Focus Group Discussions

Focus group discussions (FGD) involved both women and men of different age groups. A total of 10 focus group discussion sessions were held. Participants of FGD were selected randomly with the help of the area administrations. The team has also attempted to discuss with some nomads as they travel. Focus group discussions stressed on areas of movement and the route corridors. The FGD checklists have included assessment of the social organization and health needs of the target beneficiaries so as to enrich the study with relevant background and to build the understanding of the team leaders.

One person from the research team acted as a facilitator and the as a recorder. The size of one FGD was from a minimum of 2 up to a maximum of 8 persons. This was because it was difficult to make physical arrangements prior to the FGD.

3.4 Study Constraint

Time was the major constraint of the study. Information and statistics on the nomads of the two Zobas is scant. For this reason the research team took extra time to extrapolate the number of nomads from available resources. Moreover, some of the villages in each of the Zobas are not at all marked in any map. The coordinates for most villages is not given. This required the services of a cartographer which essentially took more time than otherwise required.

CHAPTER FOUR

4.DESCRIPTION OF THE STUDY AREAS

4.1 Northern Red Sea

Zoba NRS is one of the two Zobas of the country, which has a long coastline along the Red Sea, and occupies an area of 3,317,800 hectares (33,178 square kilometers). It includes part of the 'Green Belt Zone' of the northern highlands and partly by a portion of the coastal plains ecological zone.

The Zoba is bordered by Zoba Southern Red Sea to the south, by Zobas Maekel and Debub in the west and southwest, Anseba on the west and northwest, and the Sudan in the north. Altitude ranges from 1800m above sea level to 900m below sea level.

The total area of NRS accounts for 30% of the total area of the country. The population density is one person per 7 hectares or 0.06 square kilometer. Potential evaporation transpiration rate is 1,600 mm, and the length of growing period for crops is 75 days on average. The land is exposed to high and severe wind erosion. The average annual precipitation of the Central and Northern Highland parts of the Zoba ranges between 300-600mm. Pearl millet, sorghum, sesame, beans and maize are some of the crops that can be grown in this Zoba.

According to the study done by the Ministry of Agriculture of the Zoba the livestock population was 1,831,223 in year 2002. There were 178,532 cattle, 1,456,929 sheep and goats, 168,172 donkeys and camels, 26,867 hens and 723 beehives. The number of the cattle account for only 9.8% of the country's total cattle population, and goats and sheep for about 23.3%. The same source also reported that out of the respective total number, only 16.4% of the cattle and 9.2% of the sheep, 12.8% of the goats, 11.8% of the camels and donkeys, and 28.0% of the chicken were medicated and/or vaccinated in 2001, suggesting that coordination of human and livestock vaccination programs is required.

4.2 Southern Red Sea

SRS is located on the south eastern coast of Eritrea bordering Djibouti to the south and south western, and Ethiopia to the west and north western. It stretches to the Danakil Depression to the north and the Red Sea to the east. It is divided in to 4 sub-Zobas covering 2,327square kilometrs. The Zoba has a total population of about 60,581 that derive livelihood from fishing, pastoral nomads, salt plating and small scale trading. As the region is found on the semi arid Sahle-Saharan region, it experiences non-uniform torrential desert rainfall. It also has high evaporation and evapo-transpiration rate. It is so volcanic region that the soil has very low infiltration rate. The potential carrying capacity of the aquifer is very low. Hence, for the above stated reasons water in the zone is the most precious resource.

There are four sub-Zobas in SRS: Araata, Assab, Debub and Maekel Denkalia. Of the total area of 25 million km^2, the share of Araata is 28%, Maekel 26%, and Debub 47%. About 14% of the total area is said to be potentially arable.

Agriculture and human settlement are concentrated along the two sub Zobas with relatively mediterranean climate: Araata and Central Dankalia.

The number of livestock has decreased by 97% per annum for the period of 1998 to the year 2001. This has substantially affected the mode of life of the residents in the Zoba. It is estimated that 30% of household income is obtained from non-agricultural activities. This includes income from trade, self-employment and remittances.

Approximately 85% of the population is Afar with 15% being Tigrinya, Saho, Bilen, Tigre and Rashaida national groups. The Afar raises goats and camels mostly. As explained earlier a large percent are pastoralists (a few agro-pastoralists also exist around Afambo) while around 15% are engaged in fishing and trade activities with neighboring countries especially Yemen.

CHAPTER FIVE

5.RESULTS AND DISCUSSION

5.1 NORTHERN RED SEA

5.1.1 Nomadic Life Style

NRS is among one of the six administrative regions (Zoba) of Eritrea where nomadic lifestyle is predominantly observed. There are four different categories of nomads in the Zoba. These categories are identified based on their movement characteristics and lifestyles.

First, those who depend for their livelihoods heavily on animals and their products, migrate from the dry season to the rainy season or from lowlands to the highlands, and vise versa. The movement is very much diversified starting from within the Zobas to other Zobas, and across national borders. These people practice and experience movement related with the variation in rain fall, and hence they are treated as purely nomadic pastoralists. They don't have sedentary life.

Second, those whose livelihood is linked to diversified economic activities of crop production and animal rearing are named as agro-pastoralists. These people are engaged in agro-pastoral activities. It is only the head of the household (usually a man) and adult sons who move along with their cattle leaving their family at home. They have well-established sedentary houses. Moreover, they benefit from the social services than the pure nomadic pastoralists.

These people have permanent farming lands inherited from grand fathers and cultivate their land while undertaking livestock production. For instance, Tsenadegle from sub-Zoba Segeneiti own farm lands at Demas (Ghindae sub-Zoba) which they have inherited from their ancestors.

Like the pure pastoralists, the agro-pastoralists are also involved in search for grazing lands for their cattle within and outside the areas where farming activities are undertaken.

Third, in Zoba NRS, regardless of changes in climatic conditions, some of its residents do not show any attempts of movement. This is because some of them live on irrigation activities though out the year by using crop rotations to suit the given season. For example, during the dry season watermelon is very common, while tomato, green pepper, vegetables, maize, and sorghum are sown during the rainy season.

Fourth, Zoba NRS entertains various climatological conditions including hot, medium, and cold temperatures in different seasons. Hence, those who live in areas of hot climate are forced to migrate to the highland. The hot temperature exposes many people to very harsh living condition, especially for children, women, and old people. The main reason for migration of the people discussed in this fourth category is to escape the extremely high temperature. They are not nomadic pastoralists, nor agro-pastoralists.

Usually, the duration of time spent in the highlands, and lowlands is from May to September and from October to April, respectively. The departure and/or arrival time of the nomadic people is largely determined by the coming of rainfall and/or the hotness of the climate.

The movement of people from place to place is not done in exodus. It is made on individual person or clan basis. At the time of migration, the herdsmen (pastoralists) move with the livestock.

The most mobile people in respect of sub-Zoba are people of Shieb, plains of Ghindae, the administrative areas of Agombessa, Metkel Abiet, Shebah, Asus and Adishuma.

5.1.2 Access to Health Service

According to the key informant and focus group discussion, the Agombessa people from Ghindae sub-Zoba, and Maret people from Nakfa sub-Zoba are mentioned as having purely nomadic pastoral life style, and move on clan basis. They do not have permanent area to live in.

The elders who participated in the FGD emphasized that the migration on clan basis has been inherited from their forefathers. This inheritance enables them:

1. To cooperate and participate in cases of death, illness, marriage and bereavements.
2. To defend common enemies raised against them in the areas where they occupy for grazing for their livestock.

The movement by clan enables them to cooperatively overcome different challenges during their movement. For instance, if one of the clan members suffers illness, some of the clan members carry him/her to the nearest health facility and the others look after the livestock and family members of the sick nomad.

Residents of administrative areas of Agombesa are absolutely disadvantaged with regard to access to social services such as education and health due to their continuous nomadic movement across the inconvenient grazing lands on the terrains. This adverse situation let them to suffer from different diseases. In particular, it was confirmed by the key informants that, pregnant women, and aged adults are victims of recurrent attacks of diseases making them the most vulnerable section of the nomadic pastoralists.

However, the Government of the State of Eritrea plans to undertake resettlement program for the Agombesa nomads within the administrative area of Demas in the near future. Demas is found on the way to Massawa near Gahtelay.

Major Types of Diseases

The following are the major diseases prevalent in NRS:

1. Malaria is the most prevalent disease. According to a key informant from the regional branch office of the MoH in NRS significant improvement has been achieved in reducing the incidence of the disease.
2. Measles mainly affects the children. It is rarely seen in adults.
3. Pneumonia attacks mainly children under the age of 5 years.
4. Upper respiratory tract infection is commonly seen in the adult people.
5. Diarrhea is another common disease that attacks both the children and the adult.
6. Malnutrition.

Information Access and Support of Medication

Information as regards occurrence of any kind of disease in the areas of the nomads is accessed and obtained from:

a) Outreach health workers,
b) Health Committees members of each village, who organize task of sanitation, follow up of pregnant women, and children,
c) Representatives from administrative areas who are responsible and accountable for the health conditions of the people in the administrative areas, and especially women and children.

Modern Medical Service

The health facilities constructed and health personnel deployed by the Government of Eritrea in various areas of the Zoba provide various health services, in many places inadequate, though. Furthermore, first aid treatment is provided based on the training given to some inhabitants of the area. This perfectly works in the case of malaria.

Traditional Medication Practices

As it was clearly stated in FGD of Foro sub-Zoba, malaria is cured in many cases by the traditional way of treatment. The people use leaves from the tree known as Terminalia and Aloe. They make the leaves dry and grind them into powder and mix these two types of leaves with water. After filtering the liquid medicine, the patient is recommended to take 2 cups of it daily. However, this practice causes consequences such as severe vomiting.

5.1.3 Migratory Routes of the Nomads of the Zoba

5.1.3.1 Movement within the Zoba

Many of the nomads develop a pattern of migration within their Zoba. The migration within the Zoba aims mostly at searching for grazing lands and water for the livestock. These nomads rarely undertake farming activities when they migrate within their Zoba.

A. Migration from Nakfa sub-Zoba

Many of the nomads from Nakfa sub-Zoba migrate to the sub-Zobas that are found within Zoba NRS. This section presents the migratory routes of the various nomads that originate from the sub-Zoba.

i. Migration to Tabeh River

The nomads that start from the administrative areas of Diket, Beyan, Bakila, Maret, and Apolo move to a place specifically called Tabeh. Tabeh is a convenient grazing ground that is found on both sides of Tabeh River. The nomads settle temporarily in a scattered manner. Tabeh River is found near Felket River.

When the amount of grass can no longer sustain the livestock, the nomads continue their journey to a place known as Katar in the first place and then to Dembobet. Katar is located near Mahmimet – a village where there is a health center; where as, Dembobet is found near the Sudanese border.

Thus, the migratory route followed by the nomads from Diket, Beyan, Bakila, Maret, and Apolo goes through Tabeh and Katar and takes them to their final pasturing destinations in the vicinity of Dembobet. The number of months stayed in each of the stop over points mentioned fluctuates highly with the abundance of grass available for the livestock.

ii. Migration to Aflag (Mahmimet area)

Some of the nomads from Beyan, Bakila, and Maret follow a different migratory route. Those who take the different route move to Aflag Rihib and Aflag Chebib which are also found in Zoba NRS.

iii. Migration to Debir Chinchay

Other nomads who migrate to Debir Chinchay include the pastoralists from Rora Saeda, part of Bakila, and part of Maret.

Generally, the places to which most of the nomads move within Zoba NRS are called as Tabeh, Katar, Debir Chinchay, and Dembobet. These four places are pass points (corridors) where the nomads stop over during their movement in search of pastoral ground and water. According to the participants of focus group discussion, most of the nomads who migrate from Nakfa sub-Zoba to the aforementioned places finaly reach the grazing grounds in the vicinities of Dembobet and Debir Chinchay. Those reaching at these two places are nomads who own or herd a large number of livestock.

The nomads who move to the grazing grounds mentioned in this section gather at Mahmimet and Karora towns for marketing activities. If the nomads are scattered around Tabeh, Katar, and Amberbeb they undertake market transactions at Mahmimet. On the other hand, those nomads who pasture their animals at the grounds of Debir Chinchay, Dembobet, and Shekiket go to Karora to undertake sales and purchasing activities. Thus, these gathering places can be taken to provide the essential public services to the nomads.

As most of these nomads migrate in a scattered manner farming is not customarly practiced. The movements to Tabeh, Katar, Debir Chinchay and Dembobet take the courses of the Felket River and Tabeh River.

iv. Migratory Routes from Nakfa sub-Zoba to Tabeh, Katar, Debir Chinchay and Dembobet

The nomads have two routes that lead them to their destination in the course of the migratory movement to find grazing grounds for their livestock. The routes are herein identified as Route 1 and Route 2.

(a) Route 1: Movement through River Felket

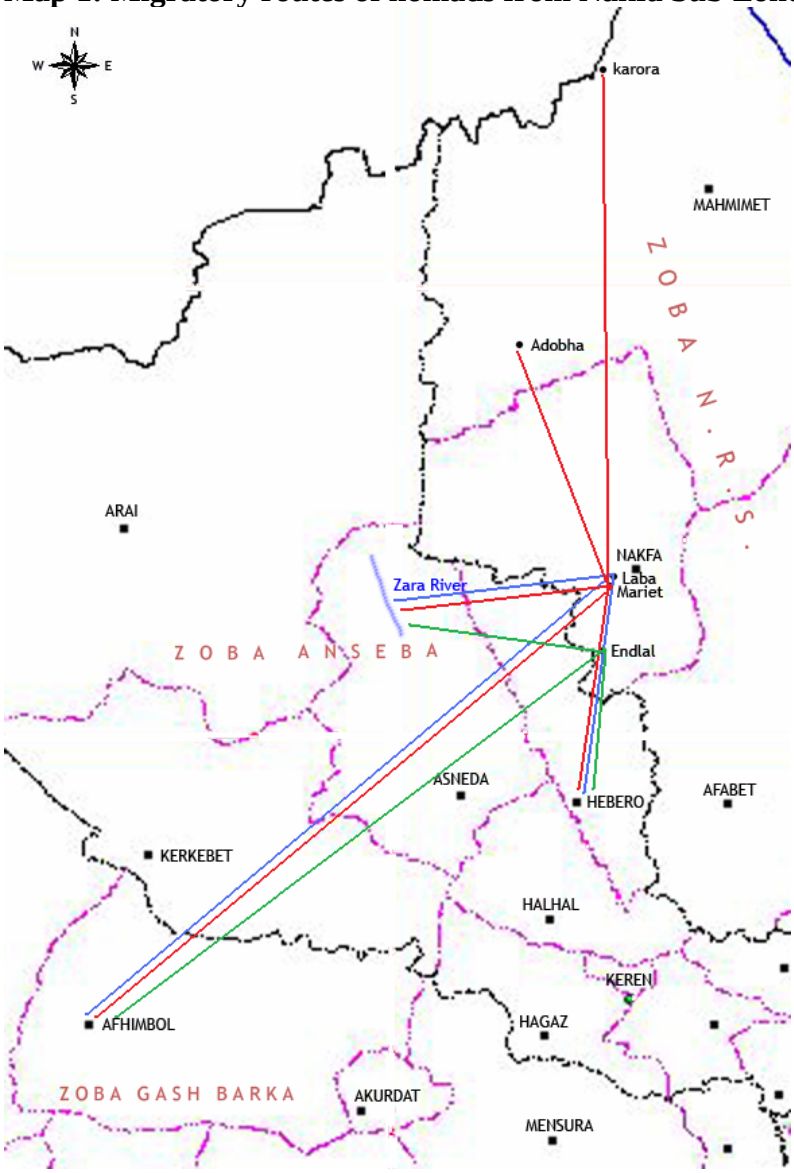
The nomads who follow River Tabeh begin their migration from the areas of Nakfa and head their way to Agrae and then to Gilal, which will take them to Afmihet and then to Katar, Debir Chinchay and Dembobet.

(b) Route 2: Movement through River Tabeh

Again the nomads starting from the areas around Nakfa they head towards the Halibet hills and then to Debir Iban. Debir Iban takes the nomads to Gilani – a place where Felket River and Tabeh River join.

Other nomads in the sub-Zoba are those who originate from Agrae and Ela Selam. Agrae is characterized by a lowland climate. The destination point for these nomads is the Karora sub-Zoba. They move to Karora mainly during the months of November through April.

Map 1: Migratory routes of nomads from Nakfa Sub Zone



As shown on the sketch the nomads from Nakfa sub-zone travel long distance crossing zoba borders and small rivulets. The nomads leave Nakfa on November and stay in the destination areas indicated until the month of April. The days spent on the journey differ with the distance of the destination areas, but on average takes three weeks.

B. Migration from Karora and Adobha sub-Zobas

The residents of Karora and Adobha areas migrate mostly within their respective sub-zobas. The months of movement are from April to the end of December.

Substantial number of nomads from the villages of Adobha and some from Karora Sub-Zoba migrate to Toker areas. In addition to the livestock herding activities, they also undertake irrigation activities based on the flooding that come through Toker River.

C. Migration from Foro Sub-Zoba

The administrative areas in the sub-Zoba serve as starting and ending points of the migratory movement within Zoba NRS. Directions of the routes are:

From	To	Finally To
- Aromaile	Kumhle	Serde
- Mahfied	Gedem and Robrobia	
- Gedem Lahazen	Ruba-Hadas (Asuba) and Mahfied	Laa'ten (Nefasit area)
- Kumhle	Aromaile up to the adjacent escarpment,	
- Arebto	Gedem and Ruba Hadas	
- Robrobia	Gedem	Habento-Serde
- Denanlo	Alumdege	
- Melka	Kumhle & Serde	
- Hadish	Ruba Hadas and adjustment escarpments bordered to sub-zone Adi-keih.	
- Irafaile	Mount Gebgeb Wessena	
- Gebgeb Wesen	Mount Wengebo	

In general, the movement within Foro sub-Zoba is from lowlands to the highlands and to the adjacent escarpments of the Zoba, and vise versa.

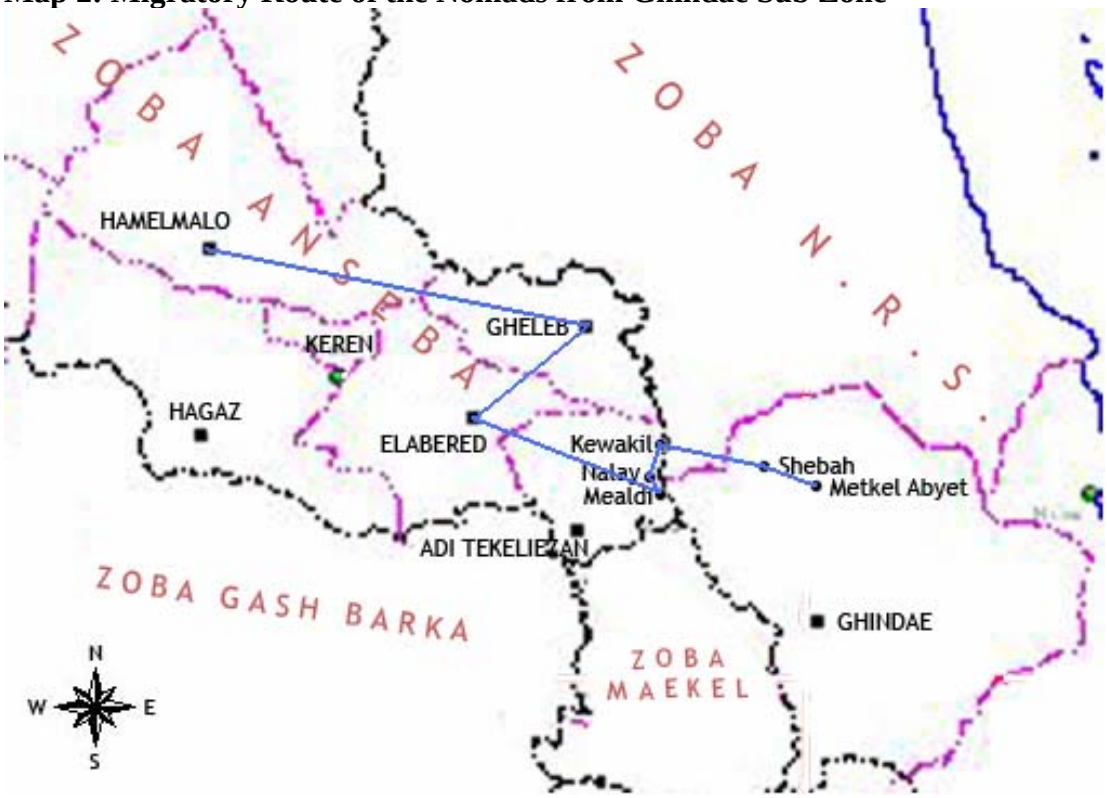
D. Migration from Ghidae sub-Zoba

There are a number of nomadic pastoralists who migrate within the territories of Zoba NRS.

The most mobile people are the residents of Agombosa, Metkel-Abiet, Shebah, Adishuma, Gumhot, Ailot and Asus.

The people from Gahtelay take the route towards Ghindae, Laa'ten and Nefasit during the hot season. Likewise, the residents of Demas move to Tserat, Nefasit and its territories.

Map 2: Migratory Route of the Nomads from Ghindae Sub Zone



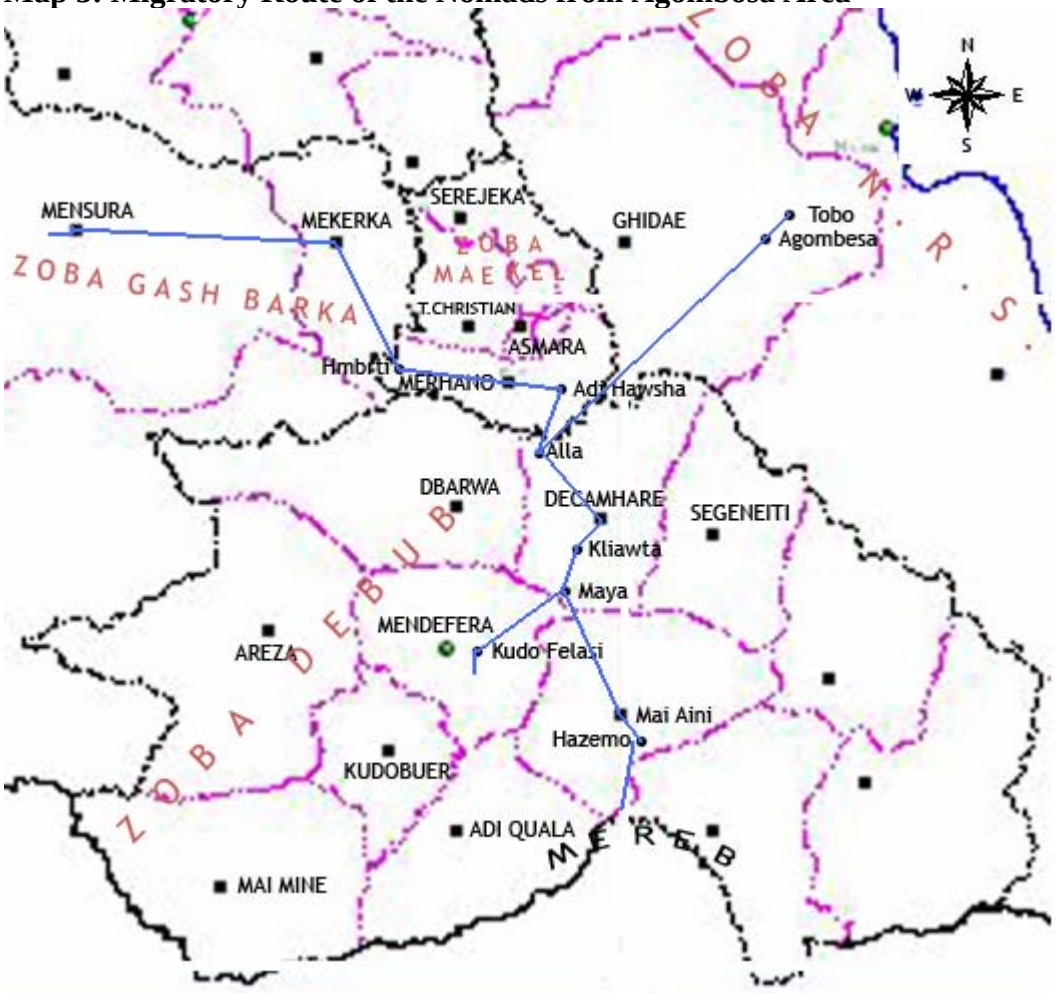
The nomads from Shebah, Metkel Abiet and some from Adi Shuma live their villages on early May and stay in Zoba Anseba until the month of September. The days spent on the journey on average are two weeks but still depend on the distance of the ultimate destination. A few nomads also migrate from Adi Shuma on the month of November and still around Reisi Adi which is not far from Adi Shuma. Mostly they commute to their village intermittently until the month of February.

The people of Agombosa move to Laa'ten, Ara'den, Nabarat, Mount Agombesa, Nefasit, Hidel-Hiulum, Modot, Mount Bizen, Atba, Gaab, Mogot, Ruba Beareza, Tserat, Enda-Arit, Mai-habar and Embatekala during the summer season.

Among the people of Agombosa homelets or camping sites (locally known as 'Dembes') are owned by a traditional succession rule where forefathers accede to their sons as an inherited property. These homelets are used as camping sites during the winter rain. Once the winter rain is over then these winter homelets are the start points where the people have to diverge to different points from their respective camping sites. The following camping sites are used as start points for the nomadic movements:

1. Tobo (plains)
2. Wettablo (Mount)
3. Miskilih (Mount)
4. Emba Tuga (Mount)
5. Agameda (Mount.)
6. Rabono (plains)
7. Gersetdega (Mount)
8. Indelregel(Mount)
9. Nekala (Mount)
10. Hinrob (Mount)
11. Haineba(Mount)
12. Gadet Mount)
13.Zizala (Plains)
14.Gelaeta (Mount)
15. Wekire
16. Aine (River)
17. Tagodeli (Mount)
18.Asrow (Mount)
19. Alimle (Mount)

Map 3: Migratory Route of the Nomads from Agombosa Area



The nomads from Agombosa travel long distance. They live their camping sites in Agombosa early November. They travel through different places as indicated on the sketch until they finally reach the destinations. They stay away from their camping sites in Agombosa until the month of February and come back again to Agombosay early March.

E. Movement from Ghelaelo sub-Zoba

Nomadic pastoralists from the villages of Bada, Buya, Asaela, Simutti, Akelo, and Engel migrate to mountain Wengobo and up to the escarpments connected with Adi-Keih sub Zone and stretched to the border lines of Ethiopia via Bada and its environs.

F. Migration from Afabet sub-Zoba

There are 15 administrative areas within Afabet sub-Zone. These administrative areas are Eastern Afabet, Western Afabet, Kelhamet, Gedged, Felket, Naro Anis, Gulbub, Gadim-Halib, Ayitahal, Gebgeb, Naro-Tebait, Shabait, Kubkub, Mihdaf, and Aget. Most of the settlers of the administrative areas migrate to the eastern lowlands where the rainy season is during the months of November, December and January. They stay there starting from the month of October until April of the next year.

In other words, the nomads return to and reside in their home villages from the month of May through September. These people undertake farming activities when they return to their home villages.

i. Migration to Hirgigo Area

Before they reach the Hirgigo area, the nomads that originate from Afabet sub-Zoba follow two migratory routes. These routes are:

a. Starting from Afabet sub-Zoba and the Marsa Gulbub area the nomads head towards Gubet together with their livestock. Continuing on their journey they advance towards Hasmet Selina through Kobae. Once the grazing grounds are depleted the nomads advance further to Wekiro and then to Emberemi. As these nomads do not try to settle for a long period in one specific area, they continue their movement to Sikar which is found around Mai-Atal area. Finally by crossing the asphalted Asmara – Massawa road they advance towards Hirgigo area where they stay for most part of the time. They graze their livestock in the Hirgigo area.

   Those nomads who follow this migratory route stay in each of the aforementioned major places and along the migratory route for about 15 days on average before they further advance to the next grazing ground and finally until they reach at Hirgigo.

b. On the other hand, the nomads that migrate to Hirgigo areas following the second route and move through the following major grazing grounds.

   The route starts again from Afabet sub-Zoba and leads the nomads to En River, which further takes them to Laba River. Following Laba River the nomads take a long journey until they reach the grazing grounds of a place called as Shebah Gedged. Continuing on their journey they advance towards Gahtelay. After settling temporarily around the grazing lands of Gahtelay the nomads cross the Asmara – Massawa road and through the Demas administrative area they move to Hirgigo where they join the other nomads who followed the first route to Hirgigo.

According to the focus group discussion participants from Afabet sub-Zoba, the nomads who follow the two different migratory routes meet at Dogoli and Mai-Atal and jointly they move towards their destination points at Hirgigo area.

Thus, Dogoli and Mai-Atal can be taken as appropriate places from where some medical services can be provided to the nomads.

G. Migration from Gadim Halib

The Gadim Halib area encompasses the nomads that originate from Gadim Halib, Adi-Nesredin, Abarara, and Atombossa. The nomads from Gadim Halib area migrate to grazing grounds named as Agamet – which is found on the way to Keren, - Hikano, Aitihal, Ferferet, and around River Azhara. All these grazing grounds are found within Afabet sub-Zoba. Even though Gadim Halib is also found within the same sub-Zoba administration, since the places such as Agamet are much colder than Gadim Halib area during the rainy season at the highland, the nomads move towards the aforementioned places both in search of grazing grounds and friendly temperature.

These nomads start migrating from the villages around Gadim Halib in the month of May and stay in the grazing grounds of the highlands in Afabet sub-Zoba until October. In other words, during the months of October through April the nomads return to their home villages around the Gadim Halib area.

The grazing grounds around Azhara River are mainly settled by nomads from Gadim Halib and Shabait. The nomads who originate from other villages pasture their animals scattered around the other grazing grounds.

In addition to pasturing for their livestock, the nomads from Gadim Halib who migrate to Azhara River also undertake farming activities.

With regard to access to medical services, the nomads who settle temporarily around Agamet, Hikano, Aitihal, Ferferet, and Azhara River travel to the health center that operates from Felket.

i. Migratory routes from Gadim Halib area to Azhara River

There are two different migratory routes taken by the nomads to migrate to Agamet, Hikano, Aitihal, Ferferet, and Azhara.

Route 1: Movement by motor vehicles

The women, children and other nomadic family members who do not move with livestock use this route to reach their destinations.

Route 2: Movement on Camel backs and on Foot

The nomads who move grazing and herding their livestock use a shortcut route which is mapped as followes.

Starting from Gadim Halib areas they advance to Ela Am-et which leads them to Labka River. After moving along Labka River for a certain distance, they reach a place called Ethaket. Continuing on their journey they move further to Etmabet and finally they reach Azhara and the other grazing grounds. This route which extends from Gadim Halib to Azhara, including all the aforementioned places along the route, is called Hambelait.

H. Migration from Shabait area

In addition to the nomads who migrate from Gadim Halib areas, other nomads from Afabet sub-Zoba also move to Azhara. These other nomads start their journey from the villages in the Shabait administrative area.

The villages in the Shabit administrative areas are Shabait, Aidab, Meibetot, and Askak.

The settlers of Aidab do not move to other places during the months of July through November. However, the nomads from Meibetot migrate to Ghebgeb for farming activity and for grazing their livestock.

However, during the winter season at the highlands of Eritrea – December through May – the nomads of Shabait, Aidab, and Meibetot migrate to the places around Azhara River.

I. Migration from Ghebgeb area

The villages administered under the Ghebgeb administrative areas are Ghebgeb, Dihna, Tsighe, Wed-Bare, Gil-At, Ech-Amur, Ed-Anjebet, Seresir, Elalaba, Shetuk, Hiyabo, and Hiyab.

The villages in the Ghebgeb administrative area where nomadic population settle are Dihna, Tsighe, Bariay, Geliat, Jaemur, and Elalaba. All of the nomads that originate from these villages migrate to the same grazing gounds. They migrate to Mizah, Hareriwa, Elak, and Azhara.

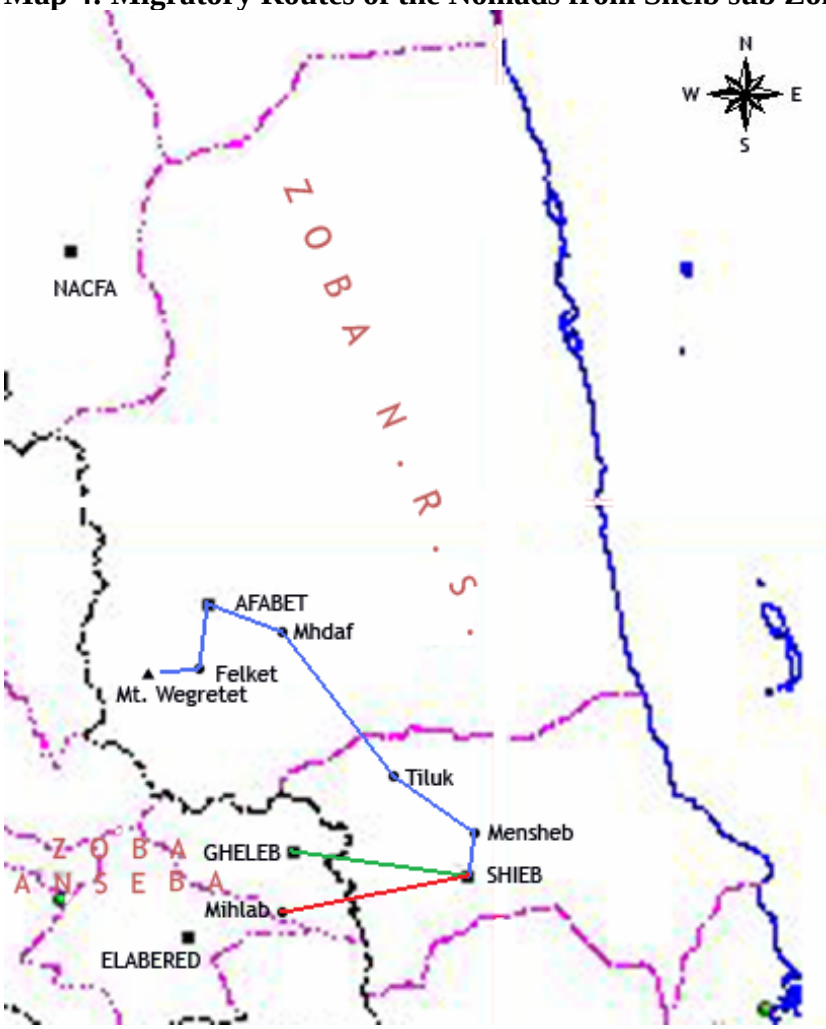
J. Migration from Shieb sub-Zoba

Some part of the nomads from the Sheib area move to Afabet sub-Zoba. The specific place to which the nomads move is called Wegretet. It is mountainous area which is used only for pasturing the livestock.

The nomads of Shieb sub-Zoba move from the villages of Dielo, Menshib, Tiluk, Biset.

The route they use to reach their destination – Wegretet - is as follows. They start from Shieb areas and move to Mihdaf through Kabir Taesa, and finally they reach at Afabet sub-Zoba (Wegretet). On their journey to Wegretet they face a very steep hill by the name Kubub Emanat which they have to cross to reach at the grazing grounds.

Map 4: Migratory Routes of the Nomads from Sheib sub Zone



The nomads from Shieb mostly travel to Zoba Anseba and specifically to Geleb and Mihlab. They leave Shieb late April and stay in Zoba Anseba until the month of September. The journey to Zoba Anseba (Geleb and Mihlab) is not long but might take 4-5 days.

Table 1: Departure and Destination Points/areas of Nomads that Migrate Within Zoba NRS

S.No.	From		To	
	Specific Place	**Sub-Zoba**	**Specific Place**	**Sub-Zoba**
1	Diket	Nakfa	Tabeh River and Katar	A river that passes through Agrae, Algena, Amberbeb then finally Sudan
2	Beyan			
3	Bakila			
4	Maret			
5	Apolo			
6	Beyan	Nakfa	Aflag (Mai-Himet)	Adobha or Karora
7	Bakila			
8	Maret			
9	Rora	Nakfa	Debir Chinchay and Dembobet	Karora
10	Bakila			
11	Maret			
12	Karora area	Karora	Karora and Adobha	Karora and Adobha
13	Adobha area	Adobha		
14	Afabet area	Afabet	Mai-Atal, Degoli, and Hirgigo	Ghindae
				Massawa
				Massawa
15	Gadim Halib area	Afabet	Agamet	Afabet
			Hikano	Afabet
			Ayitahal	Afabet
			Ferferet	Afabet
			Azhara	Afabet
16	Shabait area	Afabet	Azhara, and Gebgeb	Afabet
				Afabet
17	Ghebgeb	Afabet	Mizah	Afabet
			Hareriwa	Afabet
			Elak	Afabet
			Azhara	Afabet
18	Shieb area	Shieb	Wegretet	Afabet

S.No.	From		To	
	Specific Place	**Sub-Zoba**	**Specific Place**	**Sub-Zoba**
19	Aromile	Foro	Kumhle	Foro
			Serde	Foro
20	Mahfied	Foro	Gedem and Ruba Hadas	Foro
21	Kumhile	Foro	Aromaile and adjacent escarpment	Foro
22	Arebto	Foro	Gedem and Ruba Hadas	Foro
23	Robrebia	Foro	Gedem, Habento, and Serde	Foro
24	Denanlo	Foro	Alumdege	Foro
25	Melka	Foro	Kuhile and Serde	Foro
26	Hadish	Foro	Ruba Hadas and escarpment of Foro	Foro
27	Irafaile	Foro	Mt. Wengobo(gebgebwesena)	Foro
28	Gebgebwesena	Foro	Irafale and Mt. Wengebo	Foro
29	Agombesa or specifically from the camping sites (*Dembe)*	Ghindae	Laa'ten, Ara'den, Nabarat, Mt, Agombesa, Nefasit, Hidel-hiulum, Modot, Mt. Bizen), Atba, Gaab, Mogot, Ruba Beareza, Tserat, Enda-Arit, and embatekala	Ghindae
30	Ghahtelay	Ghindae	Ghindae, Laa'ten and Nefasit	Ghindae
31	Bada, Baya, Asaella, Simutti, Akelo,and Enqel	Gelaelo	Mountain Wengobo and escarpment of Adi-keih,national borded of Ethiopia.	Foro, Gelaelo

5.1.3.2 Movement across Zobas

Many of the nomads in Eritrea migrate to other farming and pasturing places crossing the borders of the zobas of their origin. This section describes the migration movement of the nomads of Northern Red Sea Zoba across zoba borders.

A. Migration from Foro sub-Zoba

The nomadic pastoralists of Foro sub-Zoba that practice migration across zobas usually depart from five administrative areas of the sub-Zoba. These administrative areas are Aromaile, Ruba-Hadas, Robrobia, Denanlo, and Gebgeb Wesena. This section describes the migratory routes of the nomads that depart from these administrative areas.

B. Migration from Aromaile

The nomadic pastoralists that depart from Aromaile migrate to Tserona, plains of Hazemo, and Kohayin area. These destination points that serve as grazing grounds for the nomads are found in Zoba Debub. The migratory routes followed to reach at these grazing grounds include:

Aromaile → continues to Robrobia → Rubahadas → Aleley (Ruba)→ Alelia (terrain area which takes two days to finish)→ Adikeih→ Adi wrgera→ Medagya(atound ka'atit) → Adi Awhi → (or Ka'atit) → Ka'atit→Embereandi → Ouna-Andom→ Zerbabit→ Gemae→ Aiba→ Tserona → dispersed to plains of Hazomo and kohaine areas.

The nomads pasture their animals scattering around the plains and hills of these grazing grounds.

C. Migration from Ruba-Hadas

The nomadic pastoralists that begin their migration from Ruba-Hadas move to and scatter around Ouduf, seven Villages of Merhit, and the Mereb River. These destination points that serve as grazing grounds for the nomads are also found in Zoba Debub. The migratory routes followed to reach at these grazing grounds include:

Ruba Hadas → Asuba (rivulet) → Siluh (terrain) → Hadish Adi (near Halay) → Birikito → Mirigats → Kaatit → Adi Oukubios and Adigahad→ Sereo → Berak Hutsa→ Ounawato and Keik Kewhi→ Ouduf (near, mereb) → Teventa →Seven villages of Merhit → River Mereb and Scattered to different areas along the Rever.

The final destination points here are Ouduf, Teventa, Merhit villages, and Mereb River.

D. Migration from Robrobia

The nomadic pastoralists of Robrobia reach up to Hadish Adi (near Hazemo), Terenta, and Seven Villages of Marhine. These destination points that serve as grazing grounds for the nomads are also found in Zoba Debub.

Likewise, the nomads from the administrative areas of Arebto, Mahfied, Kumhile, Lahuzien and Malka follow the same routes as Robrobia.

The migratory routes followed to reach at these grazing grounds include:

departing point: Robrobia → Arebto (which is located on the River Aliqede→ After that they depart to Adi Roso →Continued to Bazit (Maittabar) → Keih Core→ Dekemhare → Mai Edaga→ Adi Golgbl → Giniseba → Mai Aini→ Hadish Adi (near Hazomo) → Terenta → Sven Villages of Marhine .

Most of the nomads from Robrobia area that migrate to the destination points mentioned here feed their livestock scattering around the river.

E. Migration from Denanlo, Irafaile, Midhilo

The nomadic pastoralists that depart from Denanlo, Irafaile, and Midhilo migrate to Adi-Keyih, Tserona, Hazemo, Endazmach Okbit and Kohayin areas. These destination points that serve as grazing grounds for the nomads are found in Zoba Debub. The migratory routes followed to reach at these grazing grounds include:

Denanlo, Irafaile, and Midhilo → Alumdege (Ruba) → Aida Ali (Mt) → Ruba Nabegede→ Midihlo Mt) → Karbosa (name of Road found near Kohaito) → Adi-Keih → Adi wrgera→ Medagya(atound ka'atit) → Adi Awhi → (or Ka'atit) → Ka'atit→Embereandi → Ouna-Andom→ Zerbabit→ Gemae→ Aiba→ Tserona → dispersed to plains of Hazomo and kohaine areas.

The nomads pasture their animals scattering around the plains and hills of these grazing grounds.

F. Migration from Gebgeb-Wessena

The nomadic pastoralists that depart from Gebgeb-Wessena migrate to Adi-Keyih, Tserona, Hazemo, and Kohayin area. These destination points that serve as grazing grounds for the nomads are also found in Zoba Debub. The migratory routes followed to reach at these grazing grounds include:

Gebgeb-Wessena, → Mt. Mereblo → Geredif (near Senafe) → Arbabae (near Kohaito) → Kohaito→ Adikeih → Adi wrgera→ Medagya(atound ka'atit) → Adi Awhi → (or Ka'atit) → Ka'atit→Embereandi → Ouna-Andom→ Zerbabit→ Gemae→ Aiba→ Tserona → Hazomo and Kohaine areas.

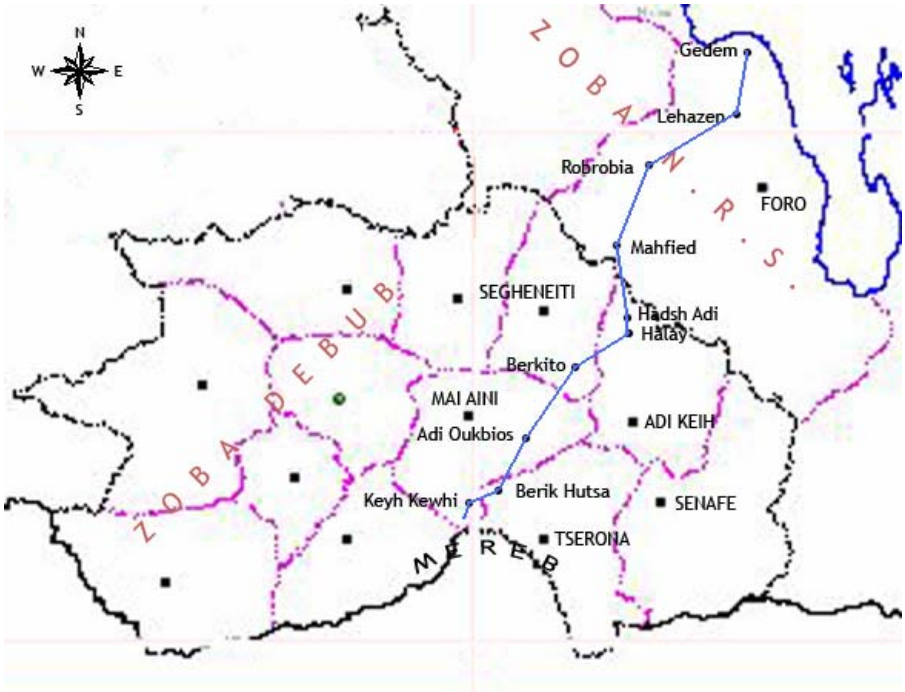
Most of the nomads from Gebgeb-Wessena area that migrate to Tserona, Hazemo, and Kohaine feed their livestock scattering around the river.

G. Migration from Zula and Afta

The nomadic pastoralists that begin their migration from Zula and Afta meet on their way with Robrobia migrants and reach up to reach up to Hadish Adi (near Hazemo), Terenta, and Seven Villages of Marhine. These destination points that serve as grazing grounds for the nomads are also found in Zoba Debub. The migratory routes followed to reach at these grazing grounds include:

Zula and Afta → Malka → Hidele → Arebto then continued their journeys with the people of Robrobia → Arebto (which is located on the River Aliqede→ After that they depart to Adi Roso →Continued to Bazit (Maittabar) → Keih Core→ Dekemhare → Mai Edaga→ Adi Golgbl → Giniseba → Mai Aini→ Hadish Adi (near Hazomo) → Terenta → Sven Villages of Marhine.

Map 5: Migratory Routes of the Nomads of Foro Sub Zone



Foro which is a sub Zoba in NRS ,is where nomads from six villages within the the sub Zoba leave for the Mereb river to graze their livestock. The migration months are between May and September. There are also some other nomads that migrate to the Ruba Hadas river between the months of November and April.

H. Migration from Ghidae Sub-Zoba

The Ghindae sub-Zoba consists of 16 administrative areas. These are:

1. Zoba 1, (part of the town of Gindae)
2. Zoba 2, (part of the town of Gindae)
3. Zoba 3, (part of the town of Gindae)
4. Gahtelay
5. Demas
6. Adi-shuma
7. Metekel Abiat
8. Shebah
9. Fishe-Mirara
10. Tseret
11. Embatekala
12. Nefasit
13. Laaiten
14. Maihabar
15. Agambessa
16. Dengolo

The nomads from the administrative areas of Metkel-Abet, Shebah, and Adi-Shuma from the Ghindae sub-Zoba migrate to two Zobas, namely Zoba Maekel, and Zoba Anseba. This migration across zobas is done for some main reasons including the search for grazing grounds, the undertaking of the farming activities in the highlands during the "kebesa" rainy season, the search for colder weather, and in search of *beles* for food that becomes available during the summer months of June, July, and August mainly along the eastern escarpments of Zoba Maekel.

When the residents of Metkel-Abet and Shebah migrate to two sub-Zobas in Zoba Anseba, the nomads from Adi-Shuma move to Zoba Maekel and Zoba Anseba. The nomads from the former administrative areas migrate not only for search of grazing

ground for their animals, but also to undertake farming activities in the villages of the highlands.

However, the nomads from Adi-shuma move to the eastern escarpments of the Zoba Maekel for food from the cactus trees and for grass to feed their livestock.

Even though, the migration calendar of the nomads in the three administrative areas under discussion is the same, due to the difference in the direction of migration followed by them, the routing and destination points will be presented in separate topics.

I. Migration from Metkel-Abet and Shebah

Residents of Metkel-Abet and Shebah have the same migration route and pattern. For this purpose their routing and destination points will be discussed under this section.

Basically, these nomads migrate to the villages in the highlands starting from May stay there until October. Since most of them undertake farming activities, many nomadic families stay in the highlands during the rainy and harvesting months of the highlands.

The nomads from Metkel-Abet and Shebah migrate to two sub-zobas in Zoba Anseba, namely Adi-Tekelezan, and Geleb sub-Zobas.

i. Migration to Adi-Tekelezan sub-Zoba

Adi-Tekelezan is found 40 kilo meters North of Asmara. It is a highland town around which there are many villages. Thus, starting from May the nomads from Metkel-Abet and Shebah migrate to farming and grazing areas near the villages administered under this sub-Zoba.

The particular places around Adi-Tekelezan to which the nomads move and reside in for about six months in each year are called Amra, Kewakil, Silay and Migidi, Nalay, Dehasiwa and Kirbe-Halib, and Mealdi.

According to the key informants and focus group participants from the area the estimated number of nomadic households who reside temporarily in Adi-Tekelezan sub-Zoba is presented in the following table:

Table 2: Estimated number of nomadic households who stay in Adi-Tekelezan Sub-Zoba

S.No.	Village/Area	No. of Households
1	Amra	120
2	Kewakil	70
3	Silay and Migidi	50
4	Nalay	50
5	Dehasiwa and Kirbe-Halib	80
6	Mealdi	70

The aforementioned areas are mountainous areas. Nalay is a river that is used by nomads as water source for their cattle and for domestic use. The key informants state that Kewakil can be taken as a central place for the purpose of providing public service to the nomads who move to the sub-Zone.

ii. Migratory routes to Adi-Tekelezan sub-Zoba

There are two migratory routes to Adi-Tekelezan sub-Zoba.

(a) Route 1: Movement with livestock

They start from Metkel-Abet and Shebah and head towards Solomona along the Solomona River which takes them to Filfil. They spend their first night at Filfil. Continuing on their journey they move along the asphalted road that takes them to Sabur at which they spend their second night of migration. Their third night is also spent at Mealdi and at their fourth night they reach at their destination places such as Kewakil, and Nalay. This route is usually taken by those nomads who take the livestock and donkeys along with them.

(b) Route 2: Movement on camel's back

The rest of the nomads from Metkel-Abet and Shebah move on the back of camels. These are usually comprised of women, children, and those who migrate mainly for the purpose of undertaking farming activities and not herding livestock.

The route starts from Metkel-Abet and Shebah and they head towards Abune-Teklehaimanot area following Ferekendot River. They spend their first night at Abune-Tekelehaimanot. Their second night is spent at Mirara. Then you progress to wards Amra and later to Silay and Migidi. Then they settle around Amra, Silay, and Migidi in a scattered manner.

iii. Migration to Geleb sub-Zoba

These migrate only from Shebah administrative area in the Ghindae sub-Zoba. The specific place to which the nomads migrate with their livestock is known as Aybaba Administrative Area. The key informants from Ghindae sub-Zoba estimate the number of these nomads to be around 40 households.

J. Migration From Adi-Shuma

The nomads from Adi-Shuma in Ghindae sub-Zoba have been practicing movement to Zoba Maekel and Zoba Anseba. In Zoba Maekel they migrate specifically to Dirfo and Riesi-Adi areas.

These nomads migrate to the aforementioned areas in the highlands starting from May stay there until September. They do not undertake farming activities; rather, their purpose of migration is to search food – the famous cactus fruit that is found mainly in the Dirfo area, to find grazing ground to their livestock, and to escape the very harsh and hot temperatures of the eastern lowlands during May to September.

i. Migration to Dirfo

The estimated number of households from Adi-Shuma who migrate to Dirfo is 100.

ii. Migration to Riesi-Adi

The Adi-Shuma nomads who move to Riesi-Adi area spend the months from May to October in the grazing and farming places specifically known as Aginad, Hamadit, and Dangura.
These nomads undertake farming activities to produce agricultural harvest that may feed their household members for two months on average. Furthermore, they graze their livestock in the hills of the aforementioned places of Riesi-Adi.

iii. Migration to Elabered sub-Zoba

Elabered sub-Zoba is found about 70 kilo meters from Asmara on the way to Keren. The nomads who happen to migrate to this sub-Zoba from Adi-Shuma reside temporarily in the areas specifically known as Adi-Berbere and Ankel.

The number of the households that move to these places from Adi-Shuma is estimated to be 150 households. This is to say that most of the nomads from Adi-Shuma migrate to Adi-Berbere and Ankel.

The purpose of their migration is mainly for undertaking farming activities and grazing their livestock.

K. Migration from Agombesa

The Agombesa nomads leave for across zoba migration from the camping sites ("Dembe") and surroundings of Alla. They migrate specifically to the following grazing areas:

i. Migration to Mereb River

Some part of Agombosa nomads finally reach at a grazing area around Mereb River.

The route taken by these nomads include the following transitional and destination points:

Camping sites → surroundings of Alla → Dekemhare → Mai-Aini → Hazemo and finally to Mereb River.

ii.Migration to Oubel

Some part of Agombosa nomads finally reach at a grazing area around Oubel.

The route taken by these nomads include the following transitional and destination points:

Camping sites → surroundings of Alla → Dekemhare → Kela-awta (near Dekemhare) →Ma-aya→ Mereb River → Sheha → Ainikereni → Kudofelasic → Anagir → Oubel where there are a main grazing grounds.

iii. Migration to Mensura

Other members of the Agombosa nomads migrate totally to a different direction. That is they migrate to Mensura which is found in Zoba Gash Barka.

The route taken by these nomads include the following transitional and destination points:

Camping sites →Surroundings of Alla→ Adihawisha → Himbiriti → Mekerka and finally they reach at Monusura – Gash Barka..

iv. Migration to Eastern part of Zoba Maekel

The rest of Agombosa nomads migrate to grazing lands that are found in Zoba Maekel. The grazing grounds in Zoba Maekel where the nomads feed their livestock in a dispersed manner are, Durfo, Adinefas, Seidishi, Gulie, Lesei,and Shegrini.

Camping sites ("Dembe") represents the temporary houses where the Agombesa people spend their live during the rainy season of the lowlands. These are stated as follows:

1. Tobo
2. Wettablo (Mt.)
3. Miskilih (M)
4. Emba Tuga (Mt.)
5. Agameda (Mt.)
6. Rabono (plain)
7. Gersetdega (Mt)
8. Indelregel(Mt)
9. Nekala (Mt)
10. Hinrob (Mt)
11. Haineba(Mt)
12. Gadet Mt)
13.Zizala (Plas)
14.Gelaeta (Mt)
15. Wekire (P)
16. Aine (Ruba)
17. Tagodeli (Mt)
18.Asrow (Mt)
19. Alimle (Mt)

L. Migration from Nakfa sub-Zoba

The nomads from Nakfa sub-Zoba migrate to various places that are found in other Zobas and within Zoba Northern Red Sea.

There are twelve administrative areas in Nakfa sub-Zoba. These administrative areas are named as Nakfa Zone 1, Nakfa Zone 2, Diket, Apolo, Beyan, Agrae, Ela Tselam, Endilal, Laba, Bakila, Maret, and Rora Tsaeda. The nomads from some of the administrative areas travel to Zoba Anseba and Zoba Gash Barka and the others migrate within Zoba Zoba Northern Red Sea. In this section we will present the migration cross zobas.

Mostly the nomads of this sub-Zoba come from the administrative areas such as Diket, Beyan, Endilal, Bakila, Maret, and Rora Tsaeda.

The people from Nakfa sub-Zoba migrate to other places starting from January and stay in those places until April. In other words the nomads stay in their villages during May through December. Since Nakfa sub-Zoba is mostly known for its highland climate in the zoba, it gets rainfall during the months of June through August like other highlands of Eritrea. Thus, in order to undertake farming activities and find good grazing ground, the nomads stay for most part of the year in their villages.

From the living traditions of Nakfa population, it is understood that most of the settlers of this sub-Zoba do not undertake farming activities. Mostly their subsistence activities are related to livestock rearing. Those nomads from the sub-Zoba that engage themselves in farming activities are the ones commonly known as the 4 Rora. The 4 Rora include Laba, Endilal, Bakila and Maret. When the nomads from these areas return to their home villages they undertake farming activities; migrated from their home villages, however, they undertake only livestock rearing activities.

M. Migration from Laba, Maret, Endilal, and Bakila

Laba, Maret, Endilal, and Bakila are seen as highlands in Nakfa sub-Zoba.

The nomads from Laba and Endilal migrate in search of grazing land during the months of January through April. Basically, the nomads from these four areas migrate to two different grazing grounds of which one is found in Zoba Anseba and the other is found within the Zoba.

i. Migration to Zoba Anseba

Those nomads who migrate to Zob Anseba are nomads who own or herd a few number of livestock. But those who own or herd a large number of livestock move to Karora sub-Zoba which is found within Zoba NRS.

The specific places in Zoba Anseba to which the nomads from Laba and Endilal migrate are known as Habero, Tahra and Zara; the later is found along Zara River. Since Tahra is a place with a large plain grazing ground for livestock, a large number of the nomads stay in the place scattered to feed their livestock.

ii. Migration to Zoba Gash Barka

The nomads that originate from Maret are known for their mostly nomadic life in Nakfa sub-Zoba. They do not do any farming activities. Their main subsistence activity is the herding of livestock.

The nomads from Maret have two routes of migration of which one leads to Zoba Gash Barka, and the second leads to Karora and Adobha sub-Zobas. The Maret nomads travel to a pastoral ground in Gash Barka which is specifically known as Afhimbol. Their route to this pastoral ground is mad through crossing Zoba Anseba. The nomads from Maret who migrate to Afhimbol are those who have a large number of livestock.

They stay in Afhimbol areas during the most part of the year starting from the month of May.

N. Migration from Sheib sub-Zoba

The nomads of Sheib sub-Zoba start to migrate starting from the month of May. Especially during June most of the nomads evacuate from their home villages to escape the harsh temperature that prevails in the eastern escarpments during the months of May through September. In other words the nomads from Sheib sub-Zoba settle in their home villages only during the months of October through April of the academic year.

Those who return in October to their home villages are the nomads who do not undertake farming activities on the grazing lands to which they migrate. The nomads who engage farming activities in the areas to which they migrate do not return to their home villages until the end of November.

i. The Migratory Routes of the Nomads from Sheib sub-Zoba

The settlers of Sheib sub-Zoba move to two different directions. One section of the population make movement across the Zoba to Zoba Anseb, and the second section migrate within the Zoba.

ii. Migration to Zoba Anseba

A significant number of the nomads from Sheib sub-Zoba move to Zoba Anseba both for undertaking farming activities and for grazing their livestock. Within Zoba Anseba the nomads migrate to the following two different places.

iii. Migration to Geleb Area

Geleb area has very vast grazing ground and it is covered with various species of trees that make conducive for the nomads to settle dispersedly around the area. Many of the nomads who move to this area undertake farming activity. In other words, those nomads who migrate to Geleb from part of Shieb, Wekiro, Gedged, Girgir, Getsgemiro, Weat and Tiluk have farming land in Geleb.

Most of the nomads who enter Geleb settle in an area specifically known as Gerbet. And the lesser number of nomads that migrate to Geleb make their shelter and feed their livestock in an area specifically known as Arey. They settle there dispersedly.

iv. Migration to Mihlab

There are also nomads who migrate to Mihlab area in Zoba Anseba. The specific area to which the nomads migrate is called Misahikat.

The routes used by the nomads who advance towards Geleb and Mihlab follow Laba River. After joining Laba River the nomads head their way towards Gaebet and they spend their first night there. The next place on their migratory route at which they spend their second night is called Demedige. Continuing on their journey the nomads move to Fazihat and then to Tasassa which leads them to Wedi-Ju and finally they reach at Geleb.

According to the focus group discussion participants the there is a very steep hill at Wedi-Ju and it takes them about two hours to climb the hill. The name of the hill is known as Kehat. They say that it becomes a great challenge to most pregnant women, old age persons and children.

O. Migration from Zoba Anseba

i. Migration to Ghindae sub-Zoba (Metkel-Abet and Shebah)

Again some part of the nomads who migrate from Elabered move to sub-Zoba Ghindae to pasture their livestock and undertake farming activities in the areas of Metkel-Abet and Shebah.

The specific place from which the nomads migrate is named as Shieb-Seleba. Shieb-Seleba is an administrative area in the sub-Zoba of Elabered. Around 40 households are estimated to migrate from this administrative area to Metkel-Abet and Shebah. In addition to these, other nomads from Ferhen Administrative Area in Hamelmalo sub-Zoba migrate to Metkel-Abet and Shebah for pasturing their livestock and for undertaking farming activities. The nomads from Shieb-Seleba and Ferhen were originally residing permanently in the villages of Metkel-Abet and Shebah before several years. In other words, once in their life their village of origin happened to be Metkel-Abet or Shebah. However, due to recurrent migration to Shieb-Seleba and Ferhen, some years ago they started to reside permanently in the areas of Shieb-Seleba and Ferhen as registered residents of those area administrations. For undertaking farming activities and in search of grazing ground, now they migrate to the areas of Metkel-Abet and Shebah.

This shows that there are nomads who happened to change their administrative areas permanently and who travel to the areas or villages of their origin as nomads to get grass for their animals and undertake some farming activities.

They migrate to Metkel-Abet and Shebah starting from November and stay in the surroundings of these administrative areas until the end of May if the rainy season in the eastern lowlands were good enough for growing grass and farming activities.

ii. Migratory routes from Hamelmalo sub-Zoba to Metkel-Abet and Shebah

Those who migrate from Hamelmalo to Ghindae sub-Zoba also have two routes that lead them to their destination in the course of the migratory movement. The routes are:

(a) Route 1: Movement with livestock

The nomads set out from the place called Aibaba and they head towards Hinzib and then to Koroh. Then they move across Nalay and through Amna Teklehaimanot they reach at Metkel-Abet and Shebah areas where they undertake farming activities and pasture their animals.

(b) Route 2: Movement on camel's back

The nomadic migrants start their movement from Aibaba in Hamelmalo sub-Zoba and through Zinhirib they reach at Kuroh. Kuroh is a place found in the administrative area of Mihlab. Continuing on their journey, then they head towards Nalay which leads them to a place called Sabur. After crossing Sabur they reach at their final destinations in the vicinities of Metkel-Abet and Shebah. It takes them about seven days to reach at their destination points starting from Aibaba.

P. Migration from Zoba Debub to Zoba NRS

In the study of the NRS, it was stated that the NRS gives home for about 60,000 populations who come across its borders as pastoral nomads from the highlands during the rainy season of the eastern lowlands. This happens usually between the months of September and February. During the rainy season of the highlands the following villages migrate from Zoba Debub to Zoba NRS.

1. Hazemo (Aiba Endabastifanos)
2. Gemae
3. Ruba Shire
4. Egri-Mekel
5. Dibi
6. Kurbelli
7. Tserona
8. Maiagam
9. Seri-Oie
10. Digm
11. Zerbabit
12. Kelay-Beatet
13. Berik Hutsa
14. Ouna Gobai
15. Keyih Kewhi
16. Adi Gehad
17. Adi Oukibios
18. Adi Ziwab
19. Kaetit
20. Embakokat
21. Mirgats
22. Mai-li-oi
23. Adi-Tokalu
24. Wenkeb
25. Aret
26. Awhine
27. Abaselama
28. Adi Wegera
29. Berhinet
30. Deri-a
31. Halay
32. Semdi
33. Hadish Adi
34. Hebo
35. Adi Kuntsi
36. Tsenadegle
37. Senafe
38 Shimejana

The migrants from the aforementioned villages follow similar routes followed like the lowlanders during the summer of the highlands. Specifically, the routes are identified as follow:

i. Migration to Demas and Gahtelay

Some of the pastoralists from Zoba Debub migrate to Zoba NRS grazing areas during the months of September through February. The migratory route they follow is:

Pastoralists from Hebo and all Tsenadegle areas move through Aligede River and down to Agameda. Some of them scatter around Laaiten, Nafasit, and extend up to Ghindae particularly around Demas, and Gahtelay.

ii.Migration from Senafe and Shimejana

Other pastoralists from Zoba Debub migrate to Gelealo, Simiti, and Endeli. The migratory route they follow is:

Pastoralists from Senafe and Shimejana migrate through the mountain of Emba-soira and dispersedly move to Foro sub-Zoba (Irafaile, Wengobo), and to Gelaelo sub-Zoba (Simiti, and Endeli).

iii. Migration to Foro sub-Zoba

Still other pastoralists from Ruba Hadas area migrate to Foro sub-Zoba.

The majority of these pastoralists move only for search of pasture areas. Where as the minority of those, like the Tsenadegele in Demas migrate for cultivating crops and feeding livestock.

Table 3: Departure and Destination Points/areas of Nomads that Migrate Acrros Zobas

S.No.	From		To	
	Specific Place	**sub-Zoba**	**Specific Place**	**sub-Zoba**
1	Metkel-Abet	Ghindae	Amra Kewakil Silay Migidi Nalay Dehasiwa Kirbe-Halib Mealdi	Adi Tekelezan
2	Shebah			
3	Metkel-Abet	Ghindae	Aybaba	Geleb
4	Shebah			
5	Adi Shuma area	Ghindae	Dirfo area Riesi Adi	Asmara Ghindae
			Adi Berbere Ankel	Elabered
6	Laba	Nakfa	Habero Tahra Zara	
				Habero
7	Endilal			Asmat
				Asmat
8	Bakila			
9	Maret		Afhimbol	Dighe
10	Shieb area	Shieb	Geleb	Geleb
			Mihlab (Misahikat)	Geleb
11	Shieb-Seleba	Elabered	Metkel-Abet, and Shebah	Ghindae
12	Ferhen	Hamelmalo		

S.No.	From		To	
	Specific Place	**sub-Zoba**	**Specific Place**	**sub-Zoba**
	Aromaile	Foro	Hazomo and Kohaine	Tserona (May-September)
	Ruba Hadas	Foro	Along River Mereb	Sub Zoba Tserona and its surrounds
	Robrobia	Foro	Along River Mereb	Sub Zoba Tserona and its surrounds
	Denanlo	Foro	Hazomo and Kohaine	Tserona and Mai-mine
	Hadish	Foro	Hazomo and Kohaine	Tserona and Mai-mine
	Arebto, Mahfied, Kumhile, Lahzien, and Malka	Foro	Along River Mereb	Sub Zoba Tserona and its surrounds
	Gebgebwesena	Foro	Hazomo and Kohaine	Tserona and Mai-mine
	Afta and Zula	Foro	Along River Mereb	Sub Zoba Tserona and its surrounds
	Irafaile	Foro	Hazomo and Kohaine	Tserona and Mai-mine
	Camping sites (Dembe)	Ghindae	Along River Mereb and Hazomo	Sub Zoba Tserona and its surrounds
	Camping sites (Dembe)	Ghindae	Oubel	Mai-mine
	Camping sites (Dembe)	Ghindae	Mensura	Mensura
	Camping sites (Dembe)	Ghindae	Durfo, Seidishi, Gulie, Adi-nifas, and Shegirini	Zoba Maekel

5.1.3.3 Cross-Border Movement

The nomads that originate from Adobha and Karora areas also migrate to the grazing areas in the Sudan if the available grass and vegetation is not sufficient to feed their livestock.

5.1.3.4 Size of Mobile Communities of the Zoba

As it can be shown from the above table, the total population size of Zoba NRS is estimated to be 617, 417 as of December 2006. This estimation is arrived at based on the census conducted in the year 2002. This census data has been updated to give population size of the Zoba for the year 2006.

The officially declared growth rate of 2.8% has been applied to the figures. This method has been adopted as there was no census in the year 2006 or 2007.

Table 4: Population of NRS Zoba categorized by sub Zoba

sub Zoba	Number of Population
Gelealo	96191
Foro	55159
Ghindae	71846
Massawa	39866
Dahlak	3550
Afabet	120277
Nakfa	63484
Karura	51083
Adobha	59552
Shieb	56408
Total	617,417

The following table shows the total number of nomadic pastoralists as categorized by age and gender groups. The nomadic pastoralists in Zoba NRS constitute 14% of the total population in the Zoba. In other words, the total nomadic pastoralists in the Zoba are estimated to be 82, 603 as of December 2006.

Out of these 34,681 are male and 47,922 are female nomads. The male nomads constitute 42% and the female constitute 58%.

Table 5: Population Size of Nomads by Age and Gender group in Zoba NRS

Age	Male	Percent	Female	Percent
<5	7471	9.04	8769	10.62
5-9	8371	10.13	9828	11.90
10-14	897	1.09	8262	10.00
15-19	4269	5.17	5012	6.07
20-24	1561	1.89	1833	2.22
25-29	903	1.09	1060	1.28
30-34	945	1.14	1110	1.34
35-39	903	1.09	1060	1.28
40-44	1190	1.44	1396	1.69
44-49	945	1.14	1110	1.34
50-54	1476	1.79	1736	2.10
55-59	1110	1.34	1297	1.57
60-64	1396	1.69	1640	1.99
65-69	945	1.14	1110	1.34
70-74	986	1.19	1157	1.40
75-74	534	0.65	627	0.76
75-79	779	0.94	915	1.11
80+	**34681**	41.99	**47922**	58.01

5.2 SOUTHERN RED SEA

5.2.1 Nomadic Lifestyle

Cross border and sea related or coastal pastoralism are common in SRS. Official statistical data (2006) from the SRS Office suggests that 85% of the Zoba's people have '*Sebk Sagm*' lifestyles. However, focus group discussions and key Informant interviews in the Zoba have inferred that though the 85% represents pastoralist lifestyles, it does not necessary indicate that all the pastoralists have nomadic lifestyles. The later argument is further substantiated by the fact that the population of livestock has exponentially decreased after the border dispute. Between the years 1998-2001 only livestock population was reduced by 97%.

As pastoralists they migrate seasonally either within the Zoba, crossing Zoba borders, or across the national borders to Yemen, Ethiopia and Djibouti. The main reason for movement is scarcity of water and grass. The departure points for the nomads of the SRS are known as most of the nomads have known villages where they reside in the presence of water and grass. If they are around their home villages' women and the elderly look after the livestock. They travel on foot but donkeys and camels are also sometimes used. Movement is determined based on the availability of water and grass. Often, they migrate between the months of June to September. Because the climate is harsh and the distance might be longer, they start the journey before the rain starts in the destination areas.

Normally there are three typical movement patterns in SRS.

1. The first is where only the able bodied person is required to move to a reliable grazing area and water source. In this type of migration it is the man who usually has to move to the pastoral area to graze the livestock around. This usually happens in a situation where there is no suitable transport facility for all the family members; or else if they are supposed to stay for a very short period of time. Movement is scheduled only after confirming that the area of migration is endowed with sufficient grass and water for the livestock. Livestock can only move if the family members who are supposed to stay behind have sufficient food for the periods the livestock will be absent. This can be either in the form of enough food reserve and water or other source of income in the absence of the livestock. This type of migration has necessitated the engagement of women and children in petty trade activities.
2. The second type of movement pattern; is where the family as a whole has to move with the livestock. This type of movement is practiced where there is no alternative source of income and food for the household. In light of the severe transport problems it is often difficult for the whole family to move far away from their permanent settlement. However, where there is no other alternative food source for the children; the whole family has to move with its 'Sienano'Ari' (mobile shelter of the Afar ethnic group).
3. The third is where a village as a whole has to temporarily leave in search of water and grazing land. This occurs in very rare cases when draught threatens the very life of the whole village/community and the livestock.

During the FGD and key informant discussion the researchers[4] have realized that the first and second types of movement are practiced in the Zoba. Movement of the village or community as a whole is almost absent at the present. Recently, people have tended to move individually with usually one man looking after the livestock of the family or the tribe. The reason for this is because importation of goods from Yemen and Djibouti (eventually to be sold to major capital markets in Eritrea) has provided families alternative source of income. Moreover, with various advocacy programs by the Ministry of Agriculture more people are tending to engage in Agro-pastoralism with good indications of producing cash crops[5]. Hence, the mode of life has been shifting from pure nomadic pastoralism to semi-nomadic pastoralism and petty trade activities. In 1999 PENHA document have reported "…..among the Afars it is the whole family that moves…." However, during our study; FGD and Key Informant participants have explained that women and children do not move far away from defined staying areas. Usually the caretaker locally known as '*Loyna*' takes all the livestock of the family and relatives and stays away with them for defined periods of time. The 2002 EDHS indicated that from the 43.7% of women who have ever moved from their place of birth only 0.7% were due to drought, forestation and famine; 10.7% had moved because of war and the likes; the rest 33% was due to marriage and other social obligations. This indicates that movement of women and children in the Zoba is very much limited. According to Mengistu (2006) "the Afar migrates to the Eritrean Ethiopian and Eritrean

[4] From WEKITA consultancy office

[5] The Government Policy is also for sedentarization of the pastoralists. The settlement policy takes the form of villagization process. The aim is to facilitate the provision of social services easily.

Djibouti borders. The household (women and children) always remained in the traditional territory where as able bodied men migrate afar with dry herds across borders."[6] Hence, the scanty and often erratic and unpredictable rainfall coupled with war and instability in the Zoba has forced many nomads to change from highly mobile to a temporary sedentary life. Similarly, 60% of the people in Zoba do not own livestock (PENHA 1999). This might be as a result of scarcity of water and small grazing land. Hence, despite being livestock oriented the pastoralists in SRS are resorting to other mode of life such as salt mining, fishing and trading.

5.2.2 Access to Health Service

In terms of access to health services considerable strides have been made after independence. At the advent of independence there were only 7 health facilities in the Zoba. However, after independence additional 15 were constructed. At the moment there are 22 health facilities in the Zoba which are fairly distributed to all the sub Zobas. Fourteen are health stations, two are hospitals, one mini-hospital and the remaining 5 are clinics. There are sufficient health facilities that provide health care to the nomads through outreach services. Around 10 health facilities are providing outreach services, though this has been stopped temporary due to budget constraint. The estimated number of beneficiaries per health facility in the Zoba is 3000 which is very low compared against a general trend of 10,000-15,000 in the other Zobas of the Country.[7]

At the present time the distance to travel to access a health facility is about 29 km, which is quite a long distance considering that the climate in the Zoba is harsh. In the same vein, the distance from the referral hospital and the capital of the Zoba is extremely long which makes emergency health problems difficult to deal with. The average distance of villages from the Zoba Hospital in Assab is about 200 km; the distance might reach 400 km in certain cases. To mitigate this problem a mini-hospital has been constructed in Tio though not fully staffed. In the rural areas maternal waiting homes are available for delivery purposes. These were established to keep the nomadic women in close supervision before and after delivery. The maternal waiting rooms provide lodging and accommodation free of charge. During the conduct of the study, tents provided by the WHO as maternal waiting homes were not distributed to their respective targets because of transport problems.

There are around 20-30 Community Health Workers but these should be treated as employees of the Ministry of Health because remuneration and incentives are not lucrative for them to assume the assignments provided. Previously, the Zoba was using the Growth Monitoring Promotion Program of the ECD; however with the phasing out of the ECD project the program has terminated. There is serious resource need to invigorate the program.

The health outreach program which was basically started to support women during delivery has stopped because of transport problem and has created unnecessary birth complication which could have been handled easily. The Zoba is using the Traditional

[6] Abraham Mengistu; Pastoralism in Eritrea (2006); Hamelmalo College of Agriculture
[7] Interviewee, Afeworki Berhe, MoH SRS Zoba

Birth Attendants (TBA). Over the years the Ministry of Health has realized that the TBA's were in fact attempting to handle delivery cases which are virtually beyond their professional capacity. The TBA's truly lack the capacity to handle cases which require serious risk management skills. The need to establish Health Posts is very much important. The health posts can be constructed in a suitable place and ideal design for the nomads and rudimentary health care services can be provided by local people themselves. In short, distance from the center and transport problems are the most outstanding issues in terms of health care services problems. From the key informant and FGD participants the problem is not to locate where the nomads dwell; rather it is with resource constraint. The Head of the Ministry of Health of the Zoba has strongly stressed "we can easily locate the nomads, we know them, and it only takes 10 days to tell them that a certain health program is to run in a particular date. Their awareness as far as health care is concerned has changed to the positive. It is not like the way we assume; it has totally been changed to the positive. He further added that what we need is resources especially transportation facilities. As an alternative, we are resorting to use camels as transport means though we again need money to buy the camels and manage them.

In the year 2006, a total of 35,961 beneficiaries have paid visits to all the health facilities in the Zoba; which shows that awareness to health services provision has grown. Diarrhea continues to be the top most reported disease in children under the age of one accounting for about 42%; indicating that there is deficiency in nutritional content. Moreover, malnutrition is ranked fourth in children under the age of one. Malnutrition and Diarrhea are two related diseases; if there is malnutrition there is diarrhea and vice versa. Similarly, diarrhea, malnutrition, and TB are the highest reported diseases in children under five years of age respectively; showing that the three diseases are interdependent. In adults, urinary infection is highly reported while diarrhea and TB are ranked third and fifth respectively. Nutritional intake is low and diet is monotonous for the SRS nomads; especially those who are afar from the sea coast they depend entirely on milk and it's by-products. Where there is food aid they also make porridge as a substitute but supplementary intake is low. Likewise, the common diseases among the people of SRS are related to style of life, environment, and are mainly preventable by simple and appropriate health measures. Aggregate results for all ages show that acute respiratory tract to the commonest accounting for about 23.5% of all other diseases. The following table provides the top 10 diseases for all ages in Zoba Southern Red Sea in 2006.

Table 6: Top 10 Diseases in SRS

Type of Disease	Percent
Diarrhea of all forms	10.85
Infection of the eye	6.82
Anemias and Malnutrition	1.68
Acute Respiratory Tract Infection	23.53
Oro- Dental Infection	1.72
Skin Infection and Scabies	9.09
Ear Infection	2.83
Gastritis/Duodenal Ulcer	3.33
Other Urinary Tract Infection	3.40
Soft Tissue Injury	1.09

Source: MoH Zoba Southern Red Sea; HMIS 2006.

There are about seven medical doctors in the Zoba; but only three were functional at the time of the study. All these doctors are located in Assab Hospital. These doctors have work overload. The average number of patients seen daily is 44 and the average waiting time is 1.5-2 hours. This, considering that the patients might come from as long as 400 km might discourage health services use. The climate can not be friendly to allow the medical workers to work in the afternoon hours. The other health facilities are poorly staffed. Often than not, health stations and centers are managed by a health assistant. One of the health facilities is not staffed at all. Over the time the load to Assab Hospital has grown as referral reports from the health facilities on the peripheries has increased. The following table provides the number of health experts per health facility as of April 2006.

Table 7: List of Health Facilities in SRS

Name of Health facility	**Number of experts**		
	Doctors	Nurses	H.A
Aytos Health center	0	0	2
Ayumen Health center	0	0	2
Egroli Health center	0	0	2
Tio Mini-Hospital	0	4	7
Afambo Health station	0	1	4
Bel'ubuy Health station	0	1	2
Edi Health station	0	0	2
Abo Health station	0	1	2
Beylul Health station	0	0	2
Debaysima Health station	0	0	0
Rahayta Health station	0	0	2
Wade Health station	0	1	3
Bahti meskerem Health station	0	1	2
Asab Hostpital Hospital	7	9	27
Port clinic Clinic	0	1	1
Refinery Clinic Clinic	0	-	1

Source: MoH Zoba Southern Red Sea, 2006

The need to hasten community health care and promote TBA's to health promoters is very much important. While for the nomads sound health care planning at national level is required.

Annex one provides the distance from Assab and health facilities to each of the villages included.

5.2.3 Migratory Routes of the Nomads of the Zoba

5.2.3.1 Movement within the Zoba

The movement of the pastoralists in Debubawi Keyeh Bahri is usually within the Zoba itself. Moreover, given the very harsh climate; children and women can not afford to travel long distances with the livestock. Camel is used as a means of transport only if the whole family is moving. The *Loyna* who is in charge of the livestock of his community has to travel on foot for long distances. As they travel the Afar ethnic group has a very good tradition of asking any person they find along their way about the situation ahead. Usually, the person coming opposite direction has to tell what he has seen in the places he has left back; the availability of water, food for humans and livestock and not the least about any potential danger to the life of the traveler. This custom which is locally known as the '*Dagu*' is very much important in determining whether there is reliable water, food for the livestock, children and women, whether or not the family has to move, how many days can a family stay in the area of migration. As a matter of fact, movement areas in the Zoba are known though the routes vary considerably. Movement routes are not well defined but may be done along the water streams, springs and catchment areas. In the subsequent sections the areas of migration; departure and destination points will be presented for each of the four sub Zobas in Debubawi Keyeh Bahri.

A. Migration from Debubawi Denkalia

Debubawi Denkalia is the southern most of the Zoba. The population includes fishermen and pastoralists. It is the third most populated sub Zoba in SRS. The total population reaches close to 14,021 (2000) of which the proportion of males and females is equal at 50%. This sub Zoba is unique as it borders with Djibouti, Ethiopia and the Red Sea coast.

Most of the nomads in Debubawi Denkalia move to the upper plains of Siroru and Mindig as well as cross the borders of Ethiopia and Djibouti. Many nomads also move to Mountain Musa Ali which connects the borders of the three countries: Eritrea, Ethiopia and Djibouti.

The pattern of migration in this Sub-Zoba is one which is characterized by up-hill down hill movement between the upper plains of the Musa Ali Mountain, the Siroru and Mindig plateaus as well has the Gahro as well as Rahyta plains.

i. Migration to Mountain Musa-Ali

A number of nomads come from Debaysima which is a small village close to the mountain Musa Ali in search of grass and water. Musa Ali has a relatively large grazing area on its down hill catchment areas. There are no nomads coming from other sub Zobas to this area. The movement is within the sub Zoba itself. However, in certain instances livestock from Djibouti come to the Musa Ali mountain ranges.

Occasionally, nomads from Deda'eto which is close to the Djibouti border come to the Musa Ali Mountain. The route taken from Dedaeto to Musa Ali is not exactly known but they take different courses.

Migration routes include along the Asbol stream which flows to the Red Sea from the Musa Ali Mountain. Those coming from Djibouti come along the Enka'ele and Wiema streams which both flow to the Red Sea.

ii. Migration to Gahro

Nomads from Abew, Kiloma and Rahaita and too often from Djibouti travel to the Gahro plains. Nomads and their livestock who come from Djibouti are not allowed to join those staying in Eritrea. A separate grazing land is left for those coming from Djibouti for the purpose of disease prevention.

The migration route taken follows the Enka'ele stream which passes between Kiloma and Eyuli and flows to the Red Sea.

The time taken from the departure points to Gahro is very short since all these departure points mentioned are found very close to the Gahro plains. Usually, the family stays behind with women and children, while the husband can in most cases commute with the livestock every other day.

iii. Migration to Siroru and Mindg

During the summer rain the upper plains of Siroru and Mindg is very green. The Siroru and Mindg area enjoys a highland climate. This area is unique because it also gets a little rain during the winter rain. It is about 2000m above sea level which makes it suitable for livestock and humans alike.

Nomads from Wade, Siduh Ela, Gahre, Me'ebale, Abew, and Araano migrate to the Siroru and Mindig areas.

During the winter rain the livestock move down from the upper plains to the catchment areas along the Gahre stream and downhill areas of Nebro.

The routes taken to Siroru and Mindg are through the Gahre stream and along the Me'ebale and Wade hills. A number of the nomads also stay around Arubi until they feel that the grass around Arubi is not sufficient and move to Siroru and Mindg.

In short the Siroru and Mindg are highly visited by the nomads in the Debubawi Dankalia.

iv. Migration to the Sea Coast

The Rahyta and the Beilul administrative areas also migrate along the Red Sea coast. Where there is scarcity of grass between the months of June-September; many of them engage in fishing as an alternative source of income. Livestock are sold during the months indicated while the rest are sent to grassy areas with one villager (the Loyna). The villages along these administrative area that include Hilika, Bihta, Ber'asole, and Adbaro (Beilul area) as well as those in the Rahyta administrative area: Burie (is different from Bure) and Gahro (is different from Gahre) move along the Red Sea coast.

Map 6: Migratory Routes of the Nomads from Maekel Denkalia sub Zone

Most nomads in Debubawi Denkalia travel to Siroru and Mindg. These places enjoy a meditaranian climate and have the opportunity of rain during the off rain period in the Zoba. Between the months of June and October these plains are full of livestock that come from Wade, Siduh Ela, Gahra and Me'ebale. The days spent on the journey reach upto 5-6 days since the plains are found within the sub Zoba itself. There are also some nomads who cluster around the Mountain Musa Ali, which is found at the juncture of Ethiopia, Djibouti and Eritean borders. The months of migration are similar for all the nomads of the Debubawi Denkalia.

B. Migration from Ara'ata

Ara'ata is a sub Zoba which is adjacent to the NRS Zoba. It is the second most populated sub Zoba in SRS. In the year 2000, the population was 20,287. The proportion of males to females is again 50%.

The sub Zoba is rich in wildlife and there is tremendous grazing area in the vicinities of Tio. The population is both pastoralist (towards the center and south) and fishermen along the sea coast. There are around 17 small streams and a number of small mountains in the sub Zoba. Migration takes along these streams and small mountains. Most of the streams flow to the west (some to Ethiopia and others to the Semienawi Keyeh Bahri) as well as the Red Sea.

The most mobile communities in the Zoba are those from Fra, Awra'e, Halhal, Egroli, Hamerti, Ayumen, As'hara, Sahl, Morah, Aytos and Mihta.

More often than not, the destination area is the Tio plains especially during the summer rain while during the winter rain they move to Gororoha and Aytos areas. Those close to the sea coast travel to Yemen. Movement to Ethiopia is not observed.

i. Migration to the Tio Plains

The nomads from As'hara, Sahl, Morah and Bihta migrate to the Tio surrounding areas. The routes taken include through the Aytos stream. Those who depart from around Hawra follow another route along the Hewra stream through the valleys between Yela'e, Sebkule, Yangudi, Dilahalol, and Anagir.

The Tio plains are such vast that the nomads are highly scattered with their livestock. A number of the nomads also gather around the Gororha area which is a small village around Tio.

Moreover, a number of pastoralists are far and wide scattered around the grazing areas of the Gebreru, Del'ule, Bahl, Darayto and Dedi'et streams. These rivers all flow to the Red Sea.

The time of migration to Tio is between the months of October to April when there is relatively sufficient grass around Tio.

ii. Migration to Ayumen

Some nomads from around Aladeben, Bihta, Sebhura and Morah move to Ayumen before they finally go to the Tio plains. These nomads are not different from those who migrate to the Tio plains; they only use Ayumen as a grazing corridor where they rest their livestock for a few weeks. The days stayed in Ayumen is not too long but may reach up to three weeks.

Map 7: Migratory Routes of the Nomads from Ara'ata Sub Zone

Some nomads from the surrounding of Meidr and Adaylo travel to Gel'alo starting from the month of May. The distance is quite long and they to use camels if available. Otherwise they pass through the plains of Tio and graze their livestock till they reach Gel'alo. It takes some three weeks until they reach Gel'alo. They leave their villages late April and stay away until the month of October. Others from around As'hara, Sahl, Bihta and Morah travel to the Tio plains which hold relatively green grazing areas during the dry season. The months of migration are between October and April and the journey does not take long days.

C. Migration from the central SRS (Maekelay Denkalia)

The central Debubawi Keyeh Bahri is divided in seven administrative areas and roughly around 25 villages within the administrative areas. The total population of the sub Zoba reaches about 14,482 (2006). The sub Zoba borders with the Arrata sub Zoba and with Southern Denkalia sub Zoba. It also borders with Ethiopia to the south and the Red Sea to the North Eastern part. The people toward the sea coast practice fishing while those towards the south around the Afambo administrative area also plant some crops. The Afambo administrative area enjoys a relatively mediterranean climate and good rain. There are a total of about six rivers (all intermittent and seasonal) in the sub Zoba. The largest is the Megelal River which travels about 65 km and has about 1000m^3 catchment areas. Generally the pastoralists in this sub Zoba move to the upper plains of Siroru and Mindig. Specifically, the movement of the pastoralists within each administrative area is:

i. Migration from Awrae

People from Awrae administrative village do not move too much. If any, they move individually to the Mindg and Siroru plains (in the Debubawi Dankalia). A few also cross the Ethiopian border but this has been stopped since the border war in 1998. The climate in Awrae is moderate compared with the rest of the Zoba. There is sufficient grazing land around Afambo which is a neighboring administrative village. There is also sufficient spring/stream water in Aroli which is a small village within the administrative village of Awrae. Family movement is not observed in this administrative village and there are a few who plant crops (sometimes cash crops) as an alternative source of income.

Movement is not very much difficult as the routes of movement are endowed with relatively adequate water and grazing areas. The distance traveled is not very much long. When they travel they usually have two routes.

1.First is from Afnabu a village within the administrative area of Awra'e to Mindg and Siroru via Afambo, Mabra (there is a small river in Mabra), Assebuy (relatively dry) and then ultimately to Mindg and Siroru. The number of people who move is very much small to mention.

2.The second is from Afnabu and Aroli through the Dereb Stream to Ethiopia. This is done in extremely small scale.

The nights are spent in certain places where they can find water. However, it is difficult to name definite places at which they spend the night. Two places are known as staying areas; these are the plains along the Debre Valley (stream) and the Sidilu hill (which is a start point for the Debre stream). The journey is non stop and the '*Loyna's'* usually form groups as they meet along their way for protection purposes.

The total population of this administrative area reaches up to 800 (2006).

ii. Migration from Erible

The Erible pastoralists move only during the summer rain; which means between the months of June-September. The movement route is along the Ereble stream which serves as a grazing area for the Erible pastoralists as well as for other nomads who come along during the winter rain from other districts. Temporary shelters are established along the Harkulu Mountain. The Erible community which includes a few nomads from the village of Erible and Fer'anfer move to the Merbra plains (including Kimra, Asebuy and Araano) during the months indicated. In the past, they also used to move to Ethiopia but at the moment they usually stay around the neighborhood. As the Fer'anferu Stream passes through this administrative village the livestock can graze along this stream without moving to other areas. However, the Erible is home to other nomads from around Dud, Dubi, Marray and Araano during the winter rain.

The distance traveled along the Erible and Fer'anferu Streams to the Mebra plains is not long but the climate is still harsh. The total time spent to reach the Mebra plains during the summer rain does not exceed more than 10 days. In this administrative village the movement is made individually. The family stays around the defined territories of its village and the '*Loyna'* with the livestock does not stay away from the village for more

than a month; indicating that static social services programs can be more effectives. In terms of health services delivery and immunization systems the outreach systems already established might serve well if well equipped with required resources.

The total population of the Erible administrative areas reaches up to 900 (2006).

iii. Migration from Mabra

Like the Erible pastoralists the Mabra community does not move a lot. Of course during the summer rain of June-September the Loyna's take the livestock down the Samilesen plains but then come back soon. The family especially women and children stay at home while the husband might leave as a Loyna representing his tribe or community. Less often some people also are clustered around the Dud (although within the administrative area) and Dubi during the months indicated. Since it is well positioned near the Afambo plains they have relatively adequate grazing land for the rest of the months. The Mabra Stream is also helpful in watering the livestock and as a source of animal feed. Similarly, the distance traveled is not too long but is apparently difficult when they travel to Dud and Dubi desert areas. The Mebra do not cross the Ethiopian border and the Northern Red Sea border. Usually they stay within the Administrative area. The plains on the foot of the *Rabno* hill serve as grazing land for the livestock though very little.

The total population of the Mabra reaches up to 3,400; no wonder indicating that they are permanent settlers.

iv. Migration from Idi

Idi is a village administration which has been growing considerably since 2002 after the construction of the Massawa-Assab road. This administrative area and the small villages under it are adjacent to the sea coast. Business and commercial activities are mushrooming from time to time. Likewise, mode of life has changed a lot. Fishing is common and business relationship with the Yemeni Fishermen is strong. There is a vast area of grazing land around Idi; but is largely not grazed. The area is home to very little wildlife especially around the Argaged hill and the course of the Fen'anferu stream (which flows to the Red Sea through the village of Idi). Some Nomads do also stay for a while around Idi as they travel to the Afambo plains and nearby pasture areas. These nomads come from the surrounding areas of Fer'anferu as well as Erible.

Korum a small village within the administrative area of Idi is also based on fishing. Hence we can largely conclude that this administrative area is known for its commercial activity and traditional fishing rather than livestock rearing and pastoralist lifestyle.

v. Migration from Afambo

Afambo area gets relatively better rainfall. It receives the winter rainfall but the grazing land holds enough grass until the month of June. Hence, migration from this area is rare. Between the months of June-October a few travel to Ethiopia. At the moment cross border movement to Ethiopia has stopped and they are starting to produce cash-crops. The village of Kimira for example has a number of agro-pastoralists. The Abi nomads travel to Ethiopia between the months of June-October other villages (Afambo and Derb) stay around.

During the summer rain, most part of SRS is dry hence nomads from Awra'e and Fer'anferu come to the Afambo area between the months of July-September. From a health services provision point of view Afambo is centrally located which makes it very much suitable to put static health services. The people are relatively aware of visiting health services.

The total population of this administration area is about 3,300 (2006).

vi. Migration from Deteshuma

The village administration of Deteshuma is located at the heart of Maekel Dankalia. There are three villages within this village administration: Deteshuma, M.Adla and M.la'elay. A few people move to the Tio plains during the winter rain. During the summer rain it is relatively preferable for the pastoralists to stay around their villages and the Afambo plains.

The distance traveled to Tio is extremely long and might take a month. Hence, children and women can not walk such long distances with the livestock. It is the husband or the *Loyna* who has to move. However, a few families also move to the surrounding areas of Erible to make temporary settlement.

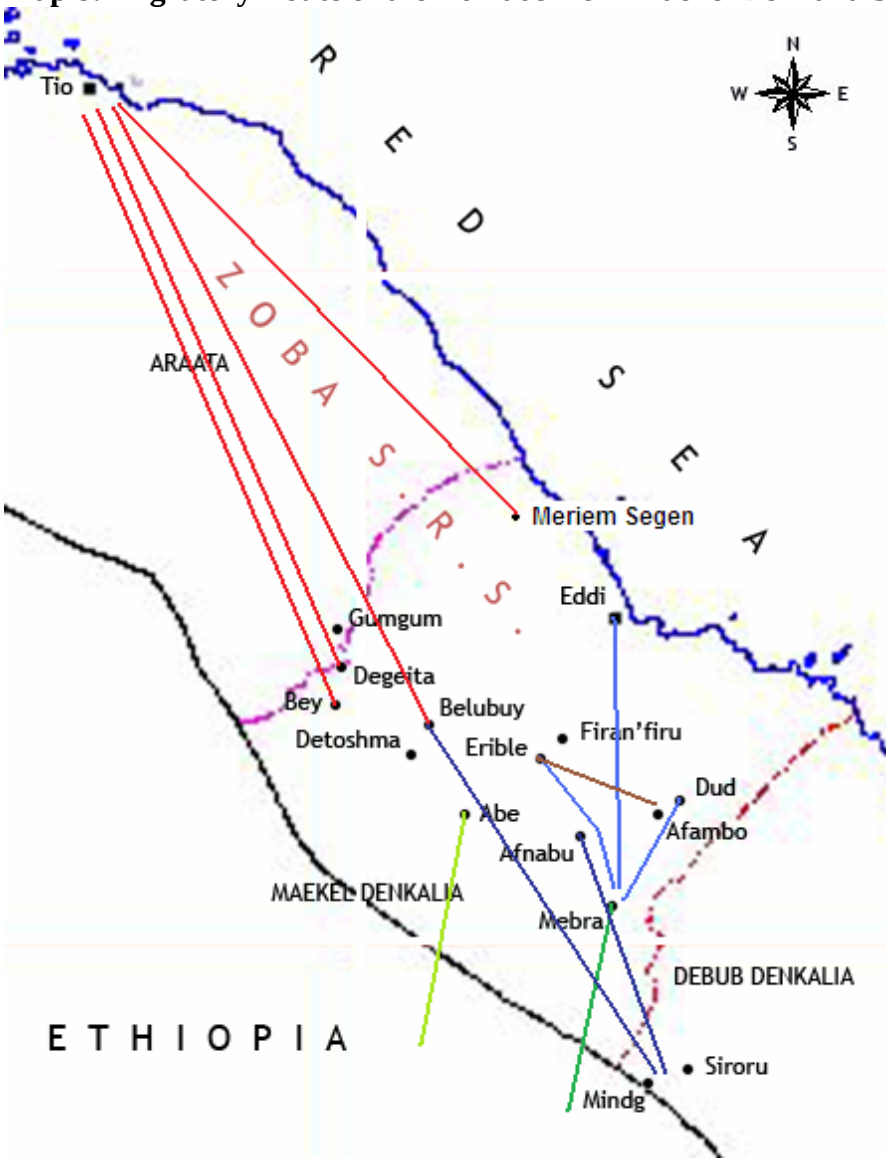
The total population of this village administration reaches up to 750 (2006).

vii. Migration from Bel'ubuy

The number of nomads in the Bel'ubuy is relatively higher than others in Maekel Denakalia. There are some nomads from around the Bel'ubuy area who migrate to Ethiopia. Many also travel to the Tio plains especially during the winter rain. Siroru and Mindig are the destination areas for most of the Bel'ubuy nomads. They take different routes to travel to Siroru and Mingd while the route to Tion takes along the different streams that include the Dereb, and Erible streams. Like many other nomads women and children stay behind. The migration months are between June-September. The villages of Degeyta, Demhis, Bey and Gumgum are highly mobile.

The total population of the Bel'ubuy community reaches up to 2,400 (2006).

Map 8: Migratory Route of the Nomads from Maekel Denkalia Sub Zone



Between the months of June and October the nomads from Dud, Edi, Erible, and Fer'anferu travel to the Mabra plains which are found within the sub Zoba of Maekel Dankalia itself. They stay around the Mabra plains for three months and return back to their villages in anticipation of rain which starts early November. The distance travelled reaches up to one week. Other cluser of nomads travel to Tio from Detosuma, Bel'ubuy, Gugum, Degeyta, Bey and Meriem Segen between the months of October and April. During these months Tio plains have relatively better pasturing grounds for the livestock.

D. Migration from Assab

Assab sub Zoba is the most populated in the SRS. The port city of Assab which is the capital of the Zoba is located in this Sub Zoba. In the year 2000, the total population of the sub Zoba was around 21,000. However, current unpublished estimate is way below this number.

There are three administration village and a total of six villages and one city. The population depends on fishing and trade activities for its livelihood but is done in combination with livestock rearing. Ecological migration is not observed and there is relatively sufficient grass for the livestock year round. However, economic migration is observed for basically trade activities between the Yemeni Fishermen.

5.2.3.2 Movement across Zobas

Most of the time, the nomads in the SRS migrate within the Zoba and to be exact within their sub-Zobas. Between the months of May and October there are some nomads who travel from around Bihta and Tio to Gel'alo though very few in numbers. These nomads get back soon in November as there is enough grass around Tio and Aytos during the months of November- April. SRS borders with only one Zoba in Eritrea; hence, movement between Zobas is not commonly observed.

Nomads from the vicinities of Gel'alo also migrate to the Ayumen and Tio plains. The course of these nomads follows first to the Western part of the SRS then they descend to the south to the Ethiopian border. They stay around the small streams which flow to the western part of the Zoba that is Debubawi Keyeh Bahri which include the streams of Ferer, Halhal, Asa-Gala, Adar and Ela-Deben. During the months of November- January they stay around these area and then move to the Tio plains around the months of March-June.

5.2.3.3 Cross-border movement

Cross border movement was once very common in SRS. After the border dispute the movement to Ethiopia has tremendously declined. Before the war, during the months of June-October some nomads used to travel to Ethiopia from the vicinities of Afambo, Abie, Bel'ube, and Halhal. While between the months of May-September some nomads from the vicinities of Ayumen and Asagala were traveling to Ethiopia. Movement, to Djibouti is not common but there are some livestock who come from Djibouti. The areas around Musa-Mountain are known at the present for this. Migration from the sea coast to Yemen is common but can not be considered as Nomadism.

5.2.4 Seasonal migration calendar of the SRS nomads

The following table provides the calendar for seasonal migration for the most mobile communities in each of the sub Zobas in SRS.

Table 8: Departure and Destination Points of the Nomads of SRS

Sub Zoba	Cluster	Village	Month of migration	Areas of migration (destination)	sub Zoba/Destination	Total pop.
Araata	Cluster-1	Meidr	May-October	Gel'alo	Cross zoba	175
		Adaylo	May-October	Gel'alo	Cross zoba	535
	Cluster-2	Halhal	October-April	Gororha	Araata	698
		Egroli	October-April	Gororha	Araata	589
		Hamerti	October-April	Gororha	Araata	1,250
		Aytus	October-April	Gororha	Araata	676
	Cluster-3	As'hara	October-April	Tio	Araata	465
		Sahl	October-April	Tio	Araata	52
		Morah	October-April	Tio/Ayumen	Araata	171
		Bihta	October-April	Tio/Ayumen	Araata	386
		Hawra	October-April	Tio	Araata	207
	Cluster-4					
		Sebhura	October-April	Ayumen	Araata	187
	Cluster-5	Halhal[8]	June-October	Ethiopia	Cross border	698
Maekel Denkalia	Cluster-1	Dud	June-October	Mebra	Maekel Denkalia	1,070
		Edi	June-October	Mebra	Maekel Denkalia	850
		Erible	June-October	Mebra	Maekel Denkalia	875
		Fer'anferu	June-October	Mebra	Maekel Denkalia	179
	Cluster-2	Asebuy	November-March	Samilesen plains	Debub Denkel	1,091
		Mebra	November-March	Samilesen plains	Debub Denkel	1,328
	Cluster-3	Detoshuma	October-April	Tio	Araata	185
		Bel'ubuy	October-April	Tio	Araata	584
		Gugum	October-April	Tio	Araata	324
		Degeyta	October-April	Tio	Araata	760
		Bey	October-April	Tio	Araata	356
		Meriem Segen	October-April	Tio	Araata	858

[8] The Halhal nomads used to migrate to Ethiopia especially before the border dispute. After the year 2000 their migration to Ethiopia has been very limited but there is still minor movement.

	Cluster-4	Bel'ubuy	June-October	Ethiopia	Cross-border	ENNK
		Abie	June-October	Ethiopia	Cross-border	ENNK
		Aroli	June-October	Ethiopia	Cross-border	ENNK
	Cluster-5					
		Afnabu	June-October	Siroru and Mindg	Debub Denkel	612
		Bel'ubuy	June-October	Siroru and Mindg	Debub Denkel	ENNK
	Cluster-6	Erible	June-October	Afambo	Araata	ENNK
		Fer'anferu	June-October	Afambo	Araata	ENNK
Debub Denkel	Cluster-1	Rahaita	June-October	Gahro	Debub Denkel	347
		Abo	June-October	Gahro	Debub Denkel	1,033
		Kiloma	June-October	Gahro	Debub Denkel	498
		Dedaeto	June-October	Gahro/Siroru/Midg	Debub Denkel	207
	Cluster-2	Debaysima	June-October	Musa-Ali	Debub Denkel	460
	Cluster-3	Wade	June-October	Siroru and Mindg	Debub Denkel	344
		Siduh'Ela	June-October	Siroru and Mindg	Debub Denkel	476
		Gahra	June-October	Siroru and Mindg	Debub Denkel	808
		Me'ebale	June-October	Siroru and Mindg	Debub Denkel	750

Source: WEKITA survey tabulation results

5.2.5 Major landmarks as corridors of nomadic movement in SRS

The following tables provide the major landmarks in each of the sub Zobas in Zoba Southern Red Sea; the list is not exhaustive though. Included are small streams (rivulets) that the nomads graze their livestock as they move from place to place. Between the months of June-October almost the entire SRS is dry and there is very little grass for the livestock except in a few places. In such circumstances; the nomads do not have any other alternative except grazing their livestock along the peripheries of these rivulets.

Table 9: Major Movement Landmarks in Araata (Rivulets and Mountains)

Name of rivulet	Starts from (hills)	Flows	Distance extended in K.m
Ferer	Arar; Torita	To the west	17
Halhal	Halbabu:Asa'el	To the west	28
Ayumen	Anagir	To the west	18
Asa'gala	Kamilen duwaw'o	To the West	18
Sbukle (Asbul)	Yangudi (Sbukle yal'e)	To the West	21
Adar	Kalidega	To the west	23
Gerba	Tetaru	To the west	25
Ela'deben	Kuhto	To the west	39
Bhita	Biru; gumada ba'elo	To the west	27
Derey	Selama; Drima	To the Red Sea	52
Hawra	Yela'e; Sbukle; Yangudi; dilahalol; Anagir	To the Red Sea	45
Gebreru	Serka'eto	To the Red Sea	37
Delule	Debhalu	To the Red Sea	46
Aytos	Ena'eto	To the Red Sea	29
Bahel	Asagura; Meska'elo	To the Red Sea	20
Darayto	Ara'ele; As'hale; Meren; Gelima; Erobalie	To the Red Sea	44
Medi'et	Sidalu	To the Red Sea	17

Source: Ministry of Agriculture (SRS Zoba)

Table 10: Major Movement Landmarks in Debub Denkalia (Rivulets and Mountains)

Name of rivulet	Starts from (hills)	Flows to	Distance extended in K.m
Wi'ema	Banda (Djibouti)	Gahro- Sea	64
Goforo	Mountain Zigir	Kiloma- Sea	38
Enk'ele	Bada- Djibouti	Between Kiloma & Eyuli – Sea	80
Abo	Asboy	Abo- Sea	30
Asbol	Musa-Ali	Asbol- Sea	90
Harsile	Manda, Debaysima, Ado Alie	Gimdo- Harsile- Sea	85
Menka'ka	Mountain Ger'Alie	Menka'ka- Sea	20
Alikorem	Mountain Markalie	Airport- Sea	24
Alalo	Adu Alie	Ras Darma	32
Lekonda	Hilielka	Beylul- Sea	36
Dereb	Selah Sima	Adebaro- Sea	64
Gahre	Me'ebale (Nebro) Wadie	Adebaro- Sea	60
Bhita	Nebro Araano	Bhita- Sea	54

Source: Ministry of Agriculture (Zoba SRS)

On top of the above there are also six small streams in this sub-Zoba. These streams are: Gahre, Alo, Sedhamengela, Deb'o, Ayrori, and Deda'eto.

Table 11: Major Movement Landmarks in Maekel Denkalia (Rivulets and Mountains)

Name of rivulet	Starts from (hills)	Flows to	Distance in K.m
Mengelal	Ar'ar	Koren- Sea	65
Dereb	Sidilu	Fura	55
Erible	Harkulu	Red sea	50
Fer'anferu	Argaged	Edi- Sea	40
Mureym	Korie	Gabr'muhur	30
Mabra	Rabno	Berhale	20

Source: Ministry of Agriculture (SRS Zoba)

5.2.6 Size of Mobile Communities of the Zoba

As mentioned above not all pastoralists are nomads. Nomadism can only be mentioned as one way of survival strategy for the pastoralists. The understanding of the exact number of nomads in Eritrea is very much limited by the paucity of data. It is very much difficult to come-up with exact figures of nomads with age and gender taken as a basis of classification. Todate, no study has been conducted at national level that inform on the number of the Eritrean nomads. The following table provides the estimated population size for Zoba Southern Red Sea. The estimate is made; on the assumption that if the head of the household have a nomadic lifestyle then the family will naturally be affected by that lifestyle.

The estimate suggests that the number of nomads is close to about 29% of the total population. Out of the total number of nomads 51% are female and the rest are males. The number of children under the age of 10 accounts to about 35% of the total number of the nomads. In general about 77% of the nomadic population is in its productive age (under the age of 40). The highest number of nomads is observed in Central Denkalia sub-Zoba accounting for about 46% of the nomads. The other two zobas, Ara'ata and Southern Denkalai account for 27% each. See the detailed population size for each of the highest mobile villages in Annex three.

Table 12: population size of the nomads of Zoba Southern Red Sea

Age Group	Male	Percent	Female	Percent
0-4	1,228	6.7	1,252	6.8
5-9	1,771	9.6	2,015	11.0
10-14	988	5.4	1,106	6.0
15-19	836	4.5	930	5.1
20-24	638	3.5	490	2.7
25-29	616	3.4	515	2.8
30-34	541	2.9	414	2.3
35-39	486	2.6	370	2.0
40-44	516	2.8	396	2.2
45-49	349	1.9	360	2.0
50-54	278	1.5	320	1.7
55-59	204	1.1	315	1.7
60-64	205	1.1	214	1.2
65-69	136	0.7	182	1.0
70-74	105	0.6	140	0.8
75-79	61	0.3	110	0.6
>80	136	0.7	157	0.9
Total	**9,094**	**49.5**	**9,286**	**50.5**

CHAPTER SIX

6.CONCLUSION AND RECOMMENDATION

6.1 Conclusion

The results of the study have shown that different movement patterns are pursued by the nomadic populations in the two study Zobas. The general movement of these nomadic communities is seasonal, especially for the cattle rearing communities, fishermen and seasonal farmers. Movement depends on the special ecology of the area they live. Some are highly mobile and follow the seasons (rainy/dry) for the movement of their cattle; while others do not move much as most of us assume. The nomads in Northern Red Sea follow well defined routes to grazing reserves and watering points; while the movement routes of the nomads of Southern Red Sea is not well defined though the final destination is known. The nomads tend to establish temporary settlements and stay for a while and continue their journey until they reach their final destinations. Duration of the journey varies from a day to one month depending on their anticipated final destination.

The study has indicated that the destination points for the nomads in the two Zobas are known but might vary with the type of movement. If the movement involves the families or the community as a whole then there is a fixed territory they stay around for the rest of the time. However, if only one herder is moving then there could be different destination points depending on availability of grass and water. In Southern Red Sea the movement is almost entirely done within the Zoba itself; and more specifically within adjacent places of the sub Zobas. This is because; the Zoba is divided into only four sub Zobas which cover substantial barren areas. There are only about 130 villages in the Zoba; and is the most under populated Zoba in the country. Movement across Zobas is rare because the Zoba is bordered with Northern Red Sea only. In the mid and late 90's cross border movement to especially Ethiopia was common; but this has been stopped after the border war in 1998. On the other hand, movement across Zobas is common in Northern Red Sea and the nomads normally move long distances across the borders of three other Zobas. Cross border movement to the Sudan is also common from this Zoba. The density of population and the spread of families are closely related to the land's capacity to support the livestock and the availability of waterholes in both of the Zobas.

In Southern Red Sea movement is usually done by an individual herder the 'Loyna'; who has to take the livestock of his family or tribe for a limited period of time. Family or movement of a community as a whole is very much rare if not available at all. In NRS there are areas where the village/community as a whole has to move during some harsh climatic conditions. Sheib and Agombosa sub Zobas are especially known for this.
In Southern Red Sea the places which the nomads graze their livestock are known. More often the nomads move to the places with relatively mediterranean climate. Siroru and Mindg, Afambo, Tio and Gahro are home for most of the nomads in Southern Red Sea during the dry season. The movement of the nomads in Northern Red Sea appears to be much more complex than that of Southern Red Sea. Generally, the Zoba is overwhelmed by across Zoba movement than internal movement.

The high movement seasons are between the months of April and October for the Nomads of the Southern Red Sea. In Northern Red Sea the movement months vary greatly from one sub Zoba to the other but the general trend is the same with that of Southern Red Sea.

Information on the exact number of the mobile communities aggregated by age and gender is still scant because no study has been instituted before. However, the estimates made on this study can serve as good indicator for health care planning purposes. The total number of nomads in Northern Red Sea is close to 82,000 which is about 14% of the total population size. In the same vein, the nomadic population in Southern Red Sea accounts for about 28% of the total population. Females account for over 51% of the total population of nomads in both of the zobas. Moreover, children account for the majority percent of the population. This suggests that health care services shall target these special groups. Moreover, this study has shown that there has been a definite change of lifestyle over the past few years. For example, a study made by Tewolde in 2001 reveals that 37 percent of the sampled households were involved in some form of extra income generating activities, including horticulture, petty trade and wage labour. According to the study, some activities are spontaneous response to drought induced food shortages (example, cattle trading), while horticulture and wage-labour are becoming increasingly important for transition from a nomadic to a diversified way of life. . For example, young men from Kerkebet region are increasingly migrating to a place called Selaa looking for employment opportunities at the gold mining site. This is a recent trend, and the expectation is that more nomads will be engaged in non-livestock income-generating activities, because the traditional pastoral system is increasingly becoming incapable of supporting the community members as their needs are growing as the result of influence of '*modernity'*.

The number of health care facilities is not few in both of these Zobas; however, most health services within these communities are being missed because these groups lack access to health facilities for quick diagnosis of a health problem. According to Key Informant and Focus Group Discussions, health care is constrained by lack of sufficient resources to reach these communities at the desired time. The outreach services established in both of these Zobas have weakened as a result of transport and other shortfalls. Moreover, culture is one major factor that deters access to health care services. The EDH 2002 for example shows that 36.5% of women in SRS and 27.8% of women in NRS consider the concern that "there may not be a female provider" as a problem in accessing health care. Only 3.6% of women in Maekel and 8.3% of women in Debub consider this concern as a problem in accessing health care services. Distance to health facility, transport, not wanting to go alone, queuing and quality of health services were also some of the problems mentioned in accessing health care by women in the two Zobas. Surprisingly, only 10.9% of women in SRS and 13.7% of women in NRS consider "knowing where to go for treatment" as a problem in accessing health care.

The nomads are exposed to high health risks when compared to the sedentary population groups. For instance infant mortality rate were 77 per 1000 live births in NRS and 122 per 1000 live births in SRS against a national rate of 48 per 1000 live births (EDHS, 2002). Therefore, there is a need to staff the health facilities with appropriate skilled and highly motivated workers.

6.2 Recommendation

The study found out that the nomads follow different patterns of migration. Patterns of migration are highly dictated by such factors as ecology, climate and social structures within the communities. Yet, the majority of the nomads migrate in search of green pasture for their livestock and souces of water for themselves and their livestock. Constraints to effective utilization of health services include distance from health facilities, lack of adequate transportation means, lack of financial resources, culture and religion influences as well as lack of awareness. The Ministry of Health medical personnel in both of the Zobas stress that their will and intention to reach the mobile communities through mobile community based health services is often discouraged with lack of sufficient financial resources for fuel and other requirements. Hence, based on the findings the following recommendations are presented.

- A study should be conducted to identify the Specific health needs of the nomads in different areas. Available documents on the specific health needs of the nomads are outdated and do not provide accurate picture of the health needs.
- The Zoba branch MoH offices should be supported with sufficient resources to reach the nomads at their staying areas. Community health channels such as the Health Promotion Officers and Community based health services provision should be invigorated through strong financing. House to house or door to door health services are relevant to address the most serious health needs of the nomads.
- Adequate health care services (such as supplementary immunization) should be provided in targeted areas where many of the nomads and their livestock are gathered. For example, most of the nomads that migrate from Ghindae and Shieb sub-Zobas migrate to Geleb area in Zoba Anseba. Geleb has been selected by the nomads for its vast grazing lands and rivers that cross through it. Another place to which a significant number of nomads migrate is the area around Azhara River. Mostly the nomads from Afabet area go to Azhara. In addition to Geleb and Azhara, the grazing plains such as those found around Adi Keyih, Aiba, Tserona, Mereb River are attractive grazing lands to the nomads that migrate from Foro and Ghindae sub-Zobas. Tio, Gahro, Afambo, Mindig, and Siroru are places in Southern Red Sea that are usually favored by most nomads as important grazing areas in the Zoba. The Ministry of Health branches in the two Zobas need to focus on these grazing areas as they are usually more crowded with nomads than other places.
- The study is limited in scope as it targets only NRS and SRS. However, an all rounded study should be conducted to cover all the zobas because there are nomads from each of these zobas that cross the borders of other zobas. For this reason planning that draws all the zobas together should be done.

- Women and children nomads are victimized to a variety of diseases, hence, health care planning should target these target groups.
- In Northern Red Sea many of the nomads meet with each other usually at a market place. The nomads from sub-Zoba Nakfa, Adobha, and Karora make marketing transactions at Maihimet and Karora. Thus, for an outreach medical service these market places can be taken to deliver health related service.
- Due to shortage of financial resource the outreach medical service that has been provided by the regional branches of the Ministry of Health is facing difficulties of continuity. The outreach medical service providers who were trained from the villages by the Ministry to provide heath service to the nomads are now seeking financial reward and are reluctant to provide the service without pay. Thus, there is a need to provide adequate financial resource for rewarding the outreach medical service providers ("agar hakim") to ensure the continuity of the service.
- It has been noted that the Government of Eritrea is working hard to sedentarize the mobile pastoralists. Therefore, the intervention planned to assist the nomads through the provision of medical facilities should be integrated with the plan of the sedentarization program of the Government.

ANNEXURES

Annex 1: Distance of villages from health facilities in Southern Red Sea

Village Administration TIO		
Name of village	Distance from ASSAB in km	Distance from Health Facility
Tio	388	Hospital
Derayto	389	9
Sahl	406	26
Romda	368	12
Saroyta	389	-
Village Administration Miedr		
Miedr	410	58
Hresen	424	44
Morah	436	36
Diwelo	451	71
Village Administration Aleti		
Aleti	488	30
Aytus	388	20
Daluele	362	28
Gebdet	333	47
Village Administration Ferer		
Ferer	275	28
Daluhle	290	-
Halhal	290	10
Village Administration Ayumen		
Ayumen	800	Health Station
Sibukle	320	20
Mesagada	330	30
Village Administration Adaylo		
Adaylo	488	30
Asahara	412	40
Village Administration Bihita		
Bihita	422	40
Eladeben	435	75
Village Administration Hamerti		
Hawra	322	22
Sebaharo	332	12
Village Administration Egroli		
Egroli	300	Health Station
Village Administration Shekaito		
Name of village	Distance from ASSAB in km	Distance from Health Facility
Shekaito	-	Health Station
Mekaeka	5	5
Village Administration Blienkoma		
Blienkoma	-	Hospital

Village Administration Asebuy		
Asebuy	-	-
Harsile	12	12
Name of village	Distance from ASSAB in km	Distance from Health Facility
Village Administration -Siroru		
Siroru	177	57
Ma'ebele	145	25
Village Administration -Debaisima		
Debaisima	57	57
Musa Ali	85	-
Village Administration -Suduh'Ela		
Suduh'Ela	150	30
Ar'ano	175	55
Village Administration -Rahayta		
Rahayta	63	Health station
Burie	71	-
Gahro	56	7
Village Administration -Abo		
Abo	28	Health station
Kiloma	38	10
Dada'eto	88	-
Village Administration -Wade		
Wade	120	Health station
Gahare	100	20
Dabu	180	60
Sugloli	225	-
Village Administration -Mindg		
Mindg	165	-
Arubi	171	-
Bure	348	-
Dalieb	243	-
Village Administration -Bielul		
Beilul	60	Health station
Hililka	38	22
Bihta	90	30
Ber'asole	120	Health station
Adbaro	80	20
Name of village	Distance from ASSAB in km	Distance from Health Facility
Village Administration Awra'e		
Afnabu	235	35
Aroli	244	44
Village Administration -Erible		
Erible	250	37
Fer'afer	273	14
Village Administration -Mabra		
Mabra	180	20

Asabuy	212	12
Dud	211	-
Village Administration -Idi		
Idi	287	Health center
Korum	247	10
Oble	312	25
Village Administration -Afambo		
Afambo	200	Health station
Abe	218	18
Derb	212	12
Village Administration -Detoshima		
Meryem Segen	313	25
M. Adla	257	37
M. La'elay	265	27
Village Administration - Bel'ubuy		
Bel'ubuy	238	Health center
Demhis	233	5
Degeyta	261	23
Bey	256	18
Gugum	273	42

Source: Ministry of Health (SRS Zoba)

Annex 2: Population Size of Southern Red Sea by sub Zoba

Ara'ata: Total Population by age group and gender

Age Group	Male	Female	Total
0-4	1,109	1,110	2,219
5-9	1,347	1,512	2,859
10-14	814	915	1,729
15-19	782	974	1,756
20-24	691	533	1,224
25-29	591	436	1,027
30-34	503	406	909
35-39	469	348	817
40-44	443	364	807
45-49	293	315	608
50-54	254	309	563
55-59	202	316	518
60-64	167	213	380
65-69	127	220	347
70-74	90	109	199
75-79	63	96	159
>80	107	160	267
	8,052	8,336	**16,388**

Source: SRS Zoba Office (unpublished research results; 2006)

Maekel Denkalia: Total Population by age group and gender

Age Group	Male	Female	Total
0-4	1,038	1,045	2,083
5-9	1,641	1,796	3,437
10-14	888	911	1,799
15-19	626	676	1,302
20-24	412	256	668
25-29	567	350	917
30-34	405	261	666
35-39	346	303	649
40-44	355	299	654
45-49	251	256	507
50-54	181	221	402
55-59	137	221	358
60-64	129	134	263
65-69	111	150	261
70-74	78	82	160
75-79	55	85	140
>80	94	122	216
	7,314	7,168	**14,482**

Debub Denkalia: Total Population by Age group and gender

Age Group	Male	Female	Total
0-4	1,187	1,334	2,521
5-9	1,732	1,875	3,607
10-14	1,015	1,168	2,183
15-19	852	990	1,842
20-24	839	592	1,431
25-29	748	520	1,268
30-34	575	421	996
35-39	471	402	873
40-44	553	442	995
45-49	379	402	781
50-54	310	353	663
55-59	203	289	492
60-64	189	241	430
65-69	136	171	307
70-74	92	137	229
75-79	57	85	142
>80	104	111	215
	9,442	9,533	**18,975**

Source: Zoba SRS Office (unpublished research results; 2006)

Assab Total Population by Age group and gender

Age Group	Male	Female	Total
0-4	404	458	862
5-9	595	656	1,251
10-14	582	637	1,219
15-19	639	673	1,312
20-24	363	355	718
25-29	409	304	713
30-34	466	230	696
35-39	384	288	672
40-44	311	226	537
45-49	254	226	480
50-54	233	172	405
55-59	196	199	395
60-64	122	133	255
65-69	79	104	183
70-74	39	52	91
75-79	30	30	60
>80	88	91	179
	5,194	4,834	**10,028**

Source: SRS Zoba office (unpublished research results; 2006)

Annex 3: Population size of the most mobile populations in Southern Red Sea

Population size of the most mobile communities in Ara'ata sub Zone

Name of Village	**Meidr**			**Adaylo**		
Age Group	Male	Female	Total	Male	Female	Total
0-4	6	8	14	37	42	79
5-9	18	13	31	37	48	85
10-14	5	5	10	25	31	56
15-19	8	13	21	29	34	63
20-24	9	4	13	28	12	40
25-29	4	-	4	18	16	34
30-34	5	4	9	13	15	28
35-39	7	5	12	19	10	29
40-44	5	4	9	21	15	36
45-49	5	5	10	5	18	23
50-54	3	5	8	4	4	8
55-59	6	3	9	4	10	14
60-64	5	1	6	2	9	11
65-69	4	1	5	4	3	7
70-74	-	7	7	6	5	11
75-79	1	2	3	2	2	4
>80	2	2	4	2	5	7
	93	82	**175**	256	279	**535**

Source: SRS Zoba Office (unpublished research results; 2006)

The Meidr and Adaylo nomads migrate to the surrounding of Gel'alo which is a village administration in NRS. The months which these communities move to Gel'alo are between May-October. In both villages we can observe that children between the ages 5-9 years are the majority; suggesting that health care services should target these age groups.

Village	**Halhal**			**Egroli**		
Age Group	Male	Female	Total	Male	Female	Total
0-4	54	51	105	42	36	78
5-9	97	72	169	45	66	111
10-14	57	40	97	25	42	67
15-19	29	34	63	24	39	63
20-24	24	12	36	22	20	42
25-29	19	22	41	26	20	46
30-34	25	22	47	18	14	32
35-39	16	5	21	15	7	22
40-44	13	11	24	21	13	34
45-49	10	5	15	7	10	17
50-54	8	7	15	2	9	11
55-59	4	10	14	12	12	24
60-64	9	10	19	5	6	11
65-69	3	5	8	3	5	8
70-74	4	6	10	6	6	12
75-79	-	5	5	-	3	3
>80	4	5	9	3	5	8
	376	322	**698**	276	313	**589**
Village	**Hamerti**			**Aytus**		
Age Group	Male	Female	Total	Male	Female	Total
0-4	82	93	175	45	47	92
5-9	117	119	236	46	57	103
10-14	68	75	143	30	37	67
15-19	43	66	109	47	46	93
20-24	53	34	87	22	31	53
25-29	48	33	81	17	24	41
30-34	40	40	80	21	12	33
35-39	27	23	50	11	14	25
40-44	30	15	45	29	13	42
45-49	22	24	46	11	13	24
50-54	29	24	53	12	18	30
55-59	5	35	40	10	10	20
60-64	20	20	40	7	6	13
65-69	6	11	17	5	6	11
70-74	6	11	17	3	6	9
75-79	6	3	9	3	7	10
>80	14	8	22	5	5	10
	616	634	**1,250**	324	352	**676**

Source: SRS Zoba Office (unpublished research results; 2006)

During the winter rain; i.e. between October- April the nomads in the above villages move to the Gororoha areas.

Name of Village	**As'hara**			**Sahl**		
Age Group	Male	Female	Total	Male	Female	Total
0-4	21	37	58	3	1	4
5-9	45	34	79	5	1	6
10-14	19	27	46	4	4	8
15-19	20	39	59	5	3	8
20-24	22	20	42	2	1	3
25-29	5	8	13	1	-	1
30-34	10	7	17	3	2	5
35-39	19	4	23	2	-	2
40-44	19	12	31	2	3	5
45-49	10	13	23	-	1	1
50-54	7	10	17	-	1	1
55-59	2	11	13	2	1	3
60-64	4	6	10	1	2	3
65-69	2	7	9	1	-	1
70-74	3	4	7	-	-	-
75-79	1	6	7	-	1	1
>80	3	8	11	-	-	-
	212	253	**465**	31	21	52
Name of Village	**Morah**			**Bihta**		
Age Group	Male	Female	Total	Male	Female	Total
0-4	16	12	28	18	24	42
5-9	10	16	26	25	35	60
10-14	6	4	10	21	28	49
15-19	8	11	19	15	23	38
20-24	6	9	15	23	11	34
25-29	6	-	6	10	10	20
30-34	2	7	9	12	12	24
35-39	10	3	13	14	13	27
40-44	2	3	5	13	14	27
45-49	1	7	8	6	6	12
50-54	1	4	5	6	6	12
55-59	6	4	10	4	10	14
60-64	3	4	7	3	8	11
65-69	1	4	5	2	4	6
70-74	1	1	2	3	-	3
75-79	1	-	1	1	6	7
>80	2	-	2	-	-	-
	82	89	**171**	176	210	**386**

Source: SRS Zoba Office (unpublished research results; 2006)

The villages of As'hara, Morah, Sahl and Bihta migrate to the Tio plains during the months of October- April when there is relatively sufficient grass around the Tio area.

Population size of the most mobile communities in Maekel Denkalia

Village	**Dud**			**Edi**		
Age Group	Male	Female	Total	Male	Female	Total
0-4	60	63	123	41	58	99
5-9	104	157	261	71	77	148
10-14	94	92	186	29	43	72
15-19	64	50	114	43	53	96
20-24	11	7	18	28	25	53
25-29	19	24	43	27	23	50
30-34	25	16	41	22	12	34
35-39	29	19	48	34	16	50
40-44	25	10	35	31	21	52
45-49	22	23	45	20	25	45
50-54	15	14	29	18	20	38
55-59	12	26	38	13	16	29
60-64	7	9	16	9	11	20
65-69	7	17	24	9	13	22
70-74	10	4	14	4	3	7
75-79	4	9	13	6	4	10
>80	10	12	22	10	15	25
	518	552	**1,070**	415	435	**850**
Village	**Erable**			**Fer'anferu**		
Age Group	Male	Female	Total	Male	Female	Total
0-4	63	67	130	15	18	33
5-9	79	108	187	21	29	50
10-14	26	60	86	21	7	28
15-19	21	44	65	17	2	19
20-24	34	18	52	6	2	8
25-29	30	31	61	4	3	7
30-34	32	24	56	4	1	5
35-39	17	27	44	6	4	10
40-44	29	19	48	2	1	3
45-49	17	15	32	4	1	5
50-54	14	19	33	1	2	3
55-59	4	16	20	2	1	3
60-64	8	5	13	1	1	2
65-69	3	8	11	1	2	3
70-74	7	8	15	-	-	-
75-79	5	4	9	-	-	-
>80	5	8	13	-	-	-
	394	481	**875**	105	74	**179**

Source: SRS Zoba Office (unpublished research results; 2006)

The nomads of the above villages travel to the Mebra plateau during the months of June-October.

Name of Village	Asebuy			Mebra		
Age Group	Male	Female	Total	Male	Female	Total
0-4	88	64	152	92	79	171
5-9	147	161	308	166	196	362
10-14	71	65	136	103	79	182
15-19	65	47	112	76	45	121
20-24	17	15	32	31	17	48
25-29	35	16	51	31	39	70
30-34	34	16	50	35	20	55
35-39	35	20	55	25	22	47
40-44	22	27	49	28	15	43
45-49	9	23	32	24	27	51
50-54	17	17	34	22	14	36
55-59	5	9	14	17	19	36
60-64	5	5	10	16	17	33
65-69	8	5	13	17	18	35
70-74	8	9	17	7	5	12
75-79	4	3	7	6	6	12
>80	8	11	19	2	12	14
	578	513	**1,091**	698	630	**1,328**

Source: SRS Zoba Office (unpublished research results; 2006)

During the months of November- March the nomads from the above villages move down to the Samilesen plains.

Name of Village	Detoshuma			Bel'ubuy		
Age Group	Male	Female	Total	Male	Female	Total
0-4	16	14	30	48	48	96
5-9	18	24	42	59	75	134
10-14	6	10	16	28	37	65
15-19	5	8	13	17	31	48
20-24	6	5	11	12	15	27
25-29	11	3	14	29	5	34
30-34	3	4	7	16	18	34
35-39	5	2	7	18	9	27
40-44	2	5	7	12	11	23
45-49	1	3	4	10	10	20
50-54	2	3	5	6	14	20
55-59	3	3	6	7	14	21
60-64	3	2	5	7	5	12
65-69	1	1	2	3	2	5
70-74	2	2	4	1	3	4
75-79	1	4	5	2	3	5
>80	3	4	7	6	3	9
	88	97	**185**	281	303	**584**

Mapping of the Migratory Routes of the Nomads in Northern and Southern Red Sea Zobas of Eritrea

Name of Village	**Gumgum**			**Degeyta**		
Age Group	Male	Female	Total	Male	Female	Total
0-4	34	27	61	55	64	119
5-9	21	34	55	70	102	172
10-14	10	18	28	33	44	77
15-19	9	16	25	28	40	68
20-24	7	6	13	23	12	35
25-29	20	10	30	31	23	54
30-34	12	8	20	20	13	33
35-39	7	11	18	16	24	40
40-44	8	13	21	20	26	46
45-49	8	6	14	17	15	32
50-54	6	8	14	6	9	15
55-59	1	6	7	5	10	15
60-64	3	4	7	6	8	14
65-69	-	2	2	4	8	12
70-74	3	1	4	8	4	12
75-79	-	1	1	1	6	7
>80	1	3	4	6	3	9
	150	174	**324**	349	411	**760**
Name of Village	**Bey**			**Meriem-Segen**		
Age Group	Male	Female	Total	Male	Female	Total
0-4	35	33	68	63	62	125
5-9	32	32	64	122	97	219
10-14	10	16	26	44	56	100
15-19	22	12	34	35	28	63
20-24	15	3	18	19	14	33
25-29	11	17	28	35	21	56
30-34	11	12	23	32	17	49
35-39	6	5	11	27	21	48
40-44	9	5	14	21	22	43
45-49	2	4	6	11	13	24
50-54	6	5	11	7	10	17
55-59	4	4	8	10	19	29
60-64	6	5	11	9	12	21
65-69	2	5	7	8	6	14
70-74	3	3	6	-	7	7
75-79	-	6	6	1	6	7
>80	4	11	15	3	-	3
	178	178	**356**	447	411	**858**

Source: SRS Zoba Office (unpublished research results; 2006)

The nomads from these villages migrate to the Tio plains during the months October-April.

Population size of the most mobile populations in Debub Denkalia

Name of Village	**Rahaita**			**Abo**		
Age Group	Male	Female	Total	Male	Female	Total
0-4	20	12	32	64	87	151
5-9	23	27	50	87	103	190
10-14	22	22	44	53	60	113
15-19	13	19	32	29	46	75
20-24	18	12	30	54	44	98
25-29	10	7	17	40	45	85
30-34	12	2	14	28	22	50
35-39	16	5	21	26	24	50
40-44	11	7	18	34	24	58
45-49	13	5	18	20	20	40
50-54	9	8	17	16	16	32
55-59	11	8	19	12	13	25
60-64	6	2	8	9	16	25
65-69	3	6	9	6	3	9
70-74	1	6	7	5	9	14
75-79	4	2	6	2	3	5
>80	5	-	5	6	7	13
	197	150	**347**	491	542	**1,033**
Name of Village	**Kiloma**			**Dedaeto**		
Age Group	Male	Female	Total	Male	Female	Total
0-4	27	30	57	10	13	23
5-9	36	46	82	22	23	45
10-14	24	35	59	3	11	14
15-19	21	22	43	10	8	18
20-24	26	18	44	14	8	22
25-29	24	10	34	5	8	13
30-34	13	13	26	3	6	9
35-39	20	9	29	8	9	17
40-44	28	9	37	9	5	14
45-49	15	11	26	2	5	7
50-54	7	10	17	5	9	14
55-59	6	9	15	1	-	1
60-64	4	5	9	2	1	3
65-69	3	3	6	-	2	2
70-74	2	2	4	2	3	5
75-79	-	5	5	-	-	-
>80	2	3	5	-	-	-
	258	240	**498**	96	111	**207**

Source: SRS Zoba Office (unpublished research results; 2006)

Nomads from the above villages migrate to the Gahro Area usually during the summer rain (June-October) but also during the winter rain. Those who come from Dedaeto also migrate to

the Mindg and Siroru plains. The number of nomads who come from Djibouti is not known. The nomads from Djibouti are not allowed to graze their livestock with those staying in Eritrea.

Name of Village	**Debaysima**		
Age Group	Male	Female	Total
0-4	22	15	37
5-9	40	37	77
10-14	24	30	54
15-19	29	38	67
20-24	28	18	46
25-29	16	9	25
30-34	9	11	20
35-39	8	4	12
40-44	23	9	32
45-49	4	9	13
50-54	6	11	17
55-59	4	8	12
60-64	10	12	22
65-69	4	2	6
70-74	6	6	12
75-79	3	1	4
>80	1	3	4
	237	223	**460**

Source: SRS Zoba Office (unpublished research results; 2006)

The nomads from Debaysima migrate to the Musa-Ali Mountain.

Name of Village	**Wade**			**Siduh Ela**		
Age Group	Male	Female	Total	Male	Female	Total
0-4	16	27	43	37	23	60
5-9	16	41	57	47	37	84
10-14	11	25	36	19	19	38
15-19	13	21	34	19	16	35
20-24	10	10	20	29	25	54
25-29	12	14	26	10	25	35
30-34	14	16	30	18	14	32
35-39	5	8	13	8	15	23
40-44	6	12	18	11	11	22
45-49	9	11	20	15	9	24
50-54	5	4	9	14	6	20
55-59	1	5	6	3	4	7
60-64	4	5	9	6	3	9
65-69	4	5	9	2	6	8
70-74	1	2	3	-	5	5
75-79	2	5	7	-	2	2
>80	2	2	4	8	10	18
	131	213	**344**	246	230	**476**

Mapping of the Migratory Routes of the Nomads in Northern and Southern Red Sea Zobas of Eritrea

Name of Village	Gahra			Me'ebale		
Age Group	Male	Female	Total	Male	Female	Total
0-4	48	49	97	45	53	98
5-9	58	86	144	76	73	149
10-14	37	54	91	54	36	90
15-19	38	45	83	29	36	65
20-24	23	27	50	32	19	51
25-29	27	20	47	37	27	64
30-34	21	16	37	26	20	46
35-39	15	11	26	24	12	36
40-44	22	24	46	14	11	25
45-49	22	21	43	14	15	29
50-54	14	16	30	10	17	27
55-59	15	19	34	7	6	13
60-64	9	10	19	9	11	20
65-69	14	13	27	7	8	15
70-74	1	6	7	3	5	8
75-79	3	5	8	2	-	2
>80	7	12	19	9	3	12
	374	434	**808**	398	352	**750**

Source: SRS Zoba Office (unpublished research results; 2006)

The nomads in these villages usually migrate to the Siroru and Mindg plains during the summer rain (June-October)

Annex-4: Population size of the most mobile populations in Northern Red Sea

Name of Village	Aromaile			Gedem Lehazen		
Age Group	Male	Female	Total	Male	Female	Total
<5	358	420	779	195	228	423
5-9	402	471	873	218	256	474
10-14	35	409	444	189	222	411
15-19	205	240	445	111	131	242
20-24	75	88	163	41	48	88
25-29	43	51	94	24	28	51
30-34	45	53	98	25	29	53
35-39	43	51	94	24	28	51
40-44	57	67	124	31	36	67
45-49	45	53	98	25	29	53
50-54	71	83	154	38	45	84
55-59	53	62	116	29	34	63
60-64	67	79	145	36	43	79
65-69	45	53	98	25	29	53
70-74	47	55	103	26	30	56
75-79	26	30	56	14	16	30
>80	37	44	81	20	24	44
	1655	2310	**3965**	1069	1255	**2324**

Mapping of the Migratory Routes of the Nomads in Northern and Southern Red Sea Zobas of Eritrea

Name of Village	Robrobia			Malka		
Age Group	Male	Female	Total	Male	Female	Total
<5	399	468	868	490	575	1065
5-9	447	525	972	549	645	1194
10-14	39	456	494	48	559	607
15-19	228	268	496	280	329	609
20-24	83	98	181	102	120	222
25-29	48	57	105	59	70	129
30-34	50	59	110	62	73	135
35-39	48	57	105	59	70	129
40-44	64	75	138	78	92	170
45-49	50	59	110	62	73	135
50-54	79	93	172	97	114	211
55-59	59	69	129	73	85	158
60-64	75	88	162	92	107	199
65-69	50	59	110	62	73	135
70-74	53	62	114	65	76	140
75-79	29	33	62	35	41	76
>80	42	49	91	51	60	111
	1844	**1931**	**4418**	**2264**	**3161**	**5425**

Name of Village	Denanlo			Mahfied		
Age Group	Male	Female	Total	Male	Female	Total
<5	221	259	480	369	434	803
5-9	247	290	538	414	486	900
10-14	21	252	274	36	422	458
15-19	126	148	274	211	248	459
20-24	46	54	100	77	91	168
25-29	27	31	58	45	52	97
30-34	28	33	61	47	55	101
35-39	27	31	58	45	52	97
40-44	35	41	76	59	69	128
45-49	28	33	61	47	55	101
50-54	44	51	95	73	86	159
55-59	33	38	71	55	64	119
60-64	41	48	90	69	81	150
65-69	28	33	61	47	55	101
70-74	29	34	63	49	57	106
75-79	16	19	34	26	31	57
>80	23	27	50	39	45	84
	1020	**1424**	**2444**	**1706**	**2382**	**4088**

Name of Village	Irafaile			Gebgeb Wessena		
Age Group	Male	Female	Total	Male	Female	Total
<5	296	347	642	257	302	559
5-9	331	389	720	288	338	627
10-14	29	337	366	25	29	54
15-19	169	198	367	147	173	320
20-24	62	72	134	54	63	117
25-29	36	42	78	31	36	68
30-34	37	44	81	33	38	71
35-39	36	42	78	31	36	68
40-44	47	55	102	41	48	89
45-49	37	44	81	33	38	71
50-54	58	69	127	51	60	111
55-59	44	51	95	38	45	83
60-64	55	65	120	48	56	104
65-69	37	44	81	33	38	71
70-74	39	46	85	34	40	74
75-79	21	25	46	18	22	40
>80	31	36	67	27	32	58
	1365	**1905**	**3270**	**1189**	**1395**	**2583**

Name of Village	Gedem Halib			Shabait		
Age Group	Male	Female	Total	Male	Female	Total
0-4	359	421	780	477	560	1036
5-9	402	472	874	534	627	1162
10-14	35	409	444	46	544	591
15-19	205	241	446	272	320	592
20-24	75	88	163	100	117	216
25-29	43	51	94	58	68	125
30-34	45	53	99	60	71	131
35-39	43	51	94	58	68	125
40-44	57	67	124	76	89	165
45-49	45	53	99	60	71	131
50-54	71	83	154	94	111	205
55-59	53	62	116	71	83	154
60-64	67	79	146	89	105	194
65-69	45	53	99	60	71	131
70-74	47	56	103	63	74	137
75-79	26	30	56	34	40	74
>80	37	44	81	50	58	108
	1657	2313	3970	2202	3075	5278

Name of Village	Kubkub			Menshib		
Age Group	Male	Female	Total	Male	Female	Total
0-4	247	290	537	306	359	664
5-9	277	325	602	343	402	745
10-14	24	282	306	30	349	379
15-19	141	166	307	175	205	380
20-24	52	61	112	64	75	139
25-29	30	35	65	37	43	80
30-34	31	37	68	39	45	84
35-39	30	35	65	37	43	80
40-44	39	46	86	49	57	106
45-49	31	37	68	39	45	84
50-54	49	57	106	60	71	131
55-59	37	43	80	45	53	99
60-64	46	54	100	57	67	124
65-69	31	37	68	39	45	84
70-74	33	38	71	40	47	88
75-79	18	21	38	22	26	47
>80	26	30	56	32	37	69
	1141	**1593**	**2734**	**1412**	**1972**	**3383**

Name of Village	Tiluk			Biset		
Age Group	Male	Female	Total	Male	Female	Total
0-4	340	400	740	154	180	334
5-9	381	448	829	172	202	374
10-14	33	389	422	15	175	190
15-19	194	228	423	88	103	191
20-24	71	83	154	32	38	70
25-29	41	48	89	19	22	40
30-34	43	50	93	19	23	42
35-39	41	48	89	19	22	40
40-44	54	64	118	24	29	53
45-49	43	50	93	19	23	42
50-54	67	79	146	30	36	66
55-59	50	59	110	23	27	50
60-64	64	75	138	29	34	62
65-69	43	50	93	19	23	42
70-74	45	53	98	20	24	44
75-79	24	29	53	11	13	24
>80	36	42	77	16	19	35
	1572	**2195**	**3767**	**710**	**991**	**1701**

Name of Village	Bada			Asa'ila		
Age Group	Male	Female	Total	Male	Female	Total
0-4	915	1074	1989	172	202	374
5-9	1025	1204	2230	193	226	419
10-14	89	1045	1134	17	196	213
15-19	523	614	1137	98	115	214
20-24	191	224	415	36	42	78
25-29	111	130	240	21	24	45
30-34	116	136	251	22	26	47
35-39	111	130	240	21	24	45
40-44	146	171	317	27	32	60
45-49	116	136	251	22	26	47
50-54	181	213	393	34	40	74
55-59	136	159	295	26	30	55
60-64	171	201	372	32	38	70
65-69	116	136	251	22	26	47
70-74	121	142	262	23	27	49
75-79	65	77	142	12	14	27
>80	95	112	208	18	21	39
	4225	**5904**	**10128**	**794**	**1109**	**1903**

Name of Village	Simoti			Akelo		
Age Group	Male	Female	Total	Male	Female	Total
0-4	31	37	68	61	72	133
5-9	35	41	77	68	80	149
10-14	3	36	39	6	70	76
15-19	18	21	39	35	41	76
20-24	7	8	14	13	15	28
25-29	4	4	8	7	9	16
30-34	4	5	9	8	9	17
35-39	4	4	8	7	9	16
40-44	5	6	11	10	11	21
45-49	4	5	9	8	9	17
50-54	6	7	14	12	14	26
55-59	5	5	10	9	11	20
60-64	6	7	13	11	13	25
65-69	4	5	9	8	9	17
70-74	4	5	9	8	9	17
75-79	2	3	5	4	5	9
>80	3	4	7	6	7	14
	145	**203**	**348**	**282**	**394**	**676**

Name of Village	Engel			Shebah		
Age Group	Male	Female	Total	Male	Female	Total
0-4	267	314	581	266	312	578
5-9	300	352	651	298	350	648
10-14	26	305	331	26	303	329
15-19	153	179	332	152	178	330
20-24	56	66	121	55	65	121
25-29	32	38	70	32	38	70
30-34	34	40	73	34	39	73
35-39	32	38	70	32	38	70
40-44	43	50	93	42	50	92
45-49	34	40	73	34	39	73
50-54	53	62	115	53	62	114
55-59	40	47	86	39	46	86
60-64	50	59	109	50	58	108
65-69	34	40	73	34	39	73
70-74	35	41	77	35	41	76
75-79	19	22	42	19	22	41
>80	28	33	61	28	33	60
	1235	**1724**	**2959**	**1228**	**1715**	**2942**

Name of Village	Metkel Abiet			Adi-Shuma		
Age Group	Male	Female	Total	Male	Female	Total
0-4	318	373	691	374	439	814
5-9	356	418	775	420	493	912
10-14	31	363	394	36	427	464
15-19	182	213	395	214	251	465
20-24	66	78	144	78	92	170
25-29	38	45	84	45	53	98
30-34	40	47	87	47	56	103
35-39	38	45	84	45	53	98
40-44	51	59	110	60	70	130
45-49	40	47	87	47	56	103
50-54	63	74	137	74	87	161
55-59	47	55	103	56	65	121
60-64	59	70	129	70	82	152
65-69	40	47	87	47	56	103
70-74	42	49	91	49	58	107
75-79	23	27	49	27	31	58
>80	33	39	72	39	46	85
	1469	**2051**	**3520**	**1729**	**2414**	**4143**

Name of Village	**Agombosa**		
Age Group	Male	Female	Total
0-4	599	703	1301
5-9	671	788	1459
10-14	58	683	742
15-19	342	402	744
20-24	125	147	272
25-29	72	85	157
30-34	76	89	164
35-39	72	85	157
40-44	95	112	207
45-49	76	89	164
50-54	118	139	257
55-59	89	104	193
60-64	112	131	243
65-69	76	89	164
70-74	79	93	172
75-79	43	50	93
>80	62	73	136
	2765	**3862**	**6627**

Annex-5: Consolidated Population size and Movement Calendar of the most mobile Populations in NRS and SRS

Sub Zoba	Village	Month of migration	Areas of migration (destination)	Sub Zoba/Destination	Total pop.
Foro	**Aromaile**	November-April	Kumhle/Serde	Foro	3965
		May-September	Hazomo and Kohaine	Tserona	
	Gedem Lehazen	May-September	Kumhle/Serde/ Hazomo and Kohaine	Tserona	2324
	Robrobia	November-April	Gedem/Ruba Hadas	Foro	4418
		May-September	Along River Mereb	Tserona and maimine	
	Malka	November-April	Kuhile and Serde	Foro	5425
		May-September	Along River Mereb	Tserona and maimine	
	Denanlo	November-April	Alumdege	Foro	2444
		May-September	Hazomo and Kohaine	Tserona and maimine	
	Mahfied	November-April	Gedem and Ruba Hadas	Foro	4088
		May-September	Along River Mereb	Tserona and maimine	
Gel'alo	**Bada**	May-September	Mountain Wengobo and escarpment of Adi- keih, national borded of Ethiopia.	Gel'alo, Foro	10128
	Irafaile	May-September	Mt. Wengobo(gebgebwesena)	Foro	3270
		May-September	Hazomo and Kohaine	Tserona and maimine	
	Asa'ila	May-September	Mountain Wengobo and escarpment of Adi- keih, national borded of Ethiopia.	Gel'alo, Foro	1903
	Simoti	May-September	Mountain Wengobo and escarpment of Adi- keih, national borded of Ethiopia.	Gel'alo, Foro	348
	Akelo	May-September	Mountain Wengobo and escarpment of Adi- keih, national borded of Ethiopia.	Gel'alo, Foro	676
	Engel	May-September	Mountain Wengobo and escarpment of Adi- keih, national borded of Ethiopia.	Gel'alo, Foro	2959

Sheib	**Menshib**	May-September	Geleb/Mihlab (Misahikat)/Wegretet	Anseba/Geleb and Afaabet	3383
	Tiluk	May-September	Geleb/Mihlab (Misahikat)/Wegretet		3767
	Biset	May-September	Geleb/Mihlab (Misahikat)/Wegretet		1701
Afa'abet	**Gebgeb Wessena**	November-February	Mizah, Hareriwa, Elak and Azhara	Afaabet	2583
	Gedem Halib	November-February	Azhara, and Gebgeb	Afaabet	3970
	Shabait	November-February	Azhara, and Gebgeb	Afaabet	5278
	Kubkub	November-February	Azhara, and Gebgeb	Afaabet	2734
Ghindae	**Shebah**	May-September	Adi Tekeliezan	Anseba	2942
		May-September	Geleb	Anseba	
	Metkel Abiet	May-September	Adi Tekeliezan	Anseba	3520
		May-September	Geleb	Anseba	
	Adi-Shuma	November-February	Dirfo/ Reisi Adi	Maekel	4143
		May-September	Adi berbere	Anseba/elabereed	
	Agombosa	November-February	Laa'ten, Ara'den, Nabarat, Mt, Agombesa, Nefasit, Hidel-hiulum, Modot, Mt. Bizen), Atba, Gaab, Mogot, Ruba Beareza, Tserat, Enda-Arit, and embatekala	Ghindae	6627

Sub Zoba	Cluster	Village	Month of migration	Areas of migration (destination)	Sub Zoba/Destination	Total pop.
Araata	Cluster-1	Meidr	May-October	Gel'alo	Cross zoba	175
		Adaylo	May-October	Gel'alo	Cross zoba	535
	Cluster-2	Halhal	October-April	Gororha	Araata	698
		Egroli	October-April	Gororha	Araata	589
		Hamerti	October-April	Gororha	Araata	1,250
		Aytus	October-April	Gororha	Araata	676
	Cluster-3	As'hara	October-April	Tio	Araata	465
		Sahl	October-April	Tio	Araata	52
		Morah	October-April	Tio/Ayumen	Araata	171
		Bihta	October-April	Tio/Ayumen	Araata	386
		Hawra	October-April	Tio	Araata	207
	Cluster-4					
		Sebhura	October-April	Ayumen	Araata	187
	Cluster-5	Halhal[9]	June-October	Ethiopia	Cross border	698
Maekel Denkalia	Cluster-1	Dud	June-October	Mebra	Maekel Denkalia	1,070
		Edi	June-October	Mebra	Maekel Denkalia	850
		Erible	June-October	Mebra	Maekel Denkalia	875
		Fer'anferu	June-October	Mebra	Maekel Denkalia	179
	Cluster-2	Asebuy	November-March	Samilesen plains	Debub Denkel	1,091
		Mebra	November-March	Samilesen plains	Debub Denkel	1,328
	Cluster-3	Detoshuma	October-April	Tio	Araata	185
		Bel'ubuy	October-April	Tio	Araata	584
		Gugum	October-April	Tio	Araata	324
		Degeyta	October-April	Tio	Araata	760
		Bey	October-April	Tio	Araata	356
		Meriem Segen	October-April	Tio	Araata	858
	Cluster-4	Bel'ubuy	June-October	Ethiopia	Cross-border	ENNK
		Abie	June-October	Ethiopia	Cross-border	ENNK
		Aroli	June-October	Ethiopia	Cross-border	ENNK
	Cluster-5					
		Afnabu	June-October	Siroru and Mindg	Debub Denkel	612
		Bel'ubuy	June-October	Siroru and Mindg	Debub Denkel	ENNK
	Cluster-6	Erible	June-October	Afambo	Araata	ENNK
		Fer'anferu	June-October	Afambo	Araata	ENNK

[9] The Halhal nomads used to migrate to Ethiopia especially before the border dispute. After the year 2000 their migration to Ethiopia has been very limited but there is still minor movement.

Debub Denkel	Cluster-1	Rahaita	June-October	Gahro	Debub Denkel	347
		Abo	June-October	Gahro	Debub Denkel	1,033
		Kiloma	June-October	Gahro	Debub Denkel	498
		Dedaeto	June-October	Gahro/Siroru/Midg	Debub Denkel	207
	Cluster-2	Debaysima	June-October	Musa-Ali	Debub Denkel	460
	Cluster-3	Wade	June-October	Siroru and Mindg	Debub Denkel	344
		Siduh'Ela	June-October	Siroru and Mindg	Debub Denkel	476
		Gahra	June-October	Siroru and Mindg	Debub Denkel	808
		Me'ebale	June-October	Siroru and Mindg	Debub Denkel	750

Annex-6: Names of Key Informants

Name	Organization	Position
Ibrahim Ali Idris	Local Administration	Administrator- Metkel abiet
Saleh Mohammed Said	Local Administration	Nakfa
Dr. Ogbe Gebremichael	Ministry of Agriculture-NRS	Head of animal resources
Tesfay Tekel	Zoba Administratio-NRS	D.G social services
Yasin Mohammed	Ministry of education-NRS	
Dawit Bisrat	Ministry of Agriculture	
Fistum Meles	Ministry of Agriculture	
Ibrahim Omer	Menshib Administration-NRS	
Said Ahmed	Menshib Administration-NRS	
Esmael	NUEYS-SRS	Head of organization
Dr. Tekel	Assab Hospital	director
Dr. Yonas	Ministry of Agriculture	Head of MoA
Dr. Afeworki	Ministry of Health	Head of MoH
Ato Hadish	Ministry of Health	Personnel Office Head
Ato Russom	Water Resources-SRS	Expert
Ato Abdela	Planning and Statistics	expert
Eng. Mebrahtu Berhane	Infrastructure-SRS	Engineer
Ato Debesay	Zoba administration	Director of the governor
Ato Filmon	Ministry of Agriculutre	expert
Ato Issaak Semere	NCDRP	Social officer

Annex-7: Questionnaire for Key Informants

1. State the nomadic life style in general? What is the reason for adopting nomadic life style?
2. Explain the style/pattern of migration of the nomads through the routes of pastoral corridors? Do they travel on community bases or on family basis? Please state the reason for adopting the pattern of migration that they stated?
3. Please, explain in detail the type of social organization that exists among the nomadic community members. What social organization do they have that play a role in solving their social problems?
4. Which administrative areas are identified by their highly mobile populations? Indicate the corridors that these nomads pass through during their movement?
5. Can you tell us the number of the nomadic people in your sub zoba by age group and gender classifications?

Sub Zoba	Age Group									
	1-5		6-17		18-40		40-65		Above 65	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female

6. How do the nomads decide to which area to be traveled? Based on type of soil? Types of shrubs and trees? Availability of water? Or other?
7. Do the nomads migrate to a pasture area during the rainy season or during the early dry season? Why? In which month does the rainy season start and end at different places in the pastoral corridors?
8. Mention and locate the major water sources (like rivers, streams, and ponds) found on the nomadic routes or pastoral corridors.
9. Mention and locate the major mountains found on the nomadic routes or pastoral corridors.
10. Which administrative areas are identified by their highly mobile populations? Indicate the corridors that these nomads pass through during their movement?
11. What are the major and minor obstacles that hinder the nomads in the Zoba from accessing to the social services?
    a. Major obstacles?
    b. Minor obstacles?
12. During which months of the calendar year do most of the nomads suffer from the major diseases?
    Please explain based on gender and age factors.
13. What mechanisms have you been using to reach the nomads to provide them with social services?
14. Please state the type and location of the formal health facilities found in the Zoba.
15. During which season (month) do most of the nomadic people report to the health facilities in the area? Please state your response as classified by

- Gender groups
- Age groups

Type of health facility	Area/village located	Sub-Zoba of location	Number health beneficiaries/year		Remark
			Admitted	Outpatient	

16. State the number of health facilities and location per Sub-zoba using the following response format in respect to health experts.

Type of health facility[♣]	Location (Area/village)	Number of health experts		
		Doctors	Nurses	Ass. Nurses

17. What is the estimated number of nomads who stay around your administrative area/village administration? State by Gender and age in respect of months stayed.
18. Do the Nomads in your administrative area move leaving their family members behind?

19. What are the types of diseases that affect the nomads most based on:

a) Gender, and
b) Age factors

20. What obstacles are faced by the nomadic women that retard them from accessing health facilities for prenatal and antenatal care?
21. What health information system do the health facility administrations use to detect the health conditions of the nomads in particular?

Documents to be collected:

- Administrative map of the Zoba
- Population by sub zoba, local administrations, gender and age group
- Number of nomads registered in the sub zoba be age group and gender
- Administrative map of the Sub-Zoba showing the location of health facilities such as hospitals, health centers, and health stations.
- Statistical information from health facilities in the area visited concerning the number of beneficiaries (if available classified by age and gender).

[♣] Health Station, Health Center, Hospital, and Referral Hospital

Annex-8: Discussion Checklists for Focus Group Discussion

1. State the nomadic life style in general? What is the reason for adopting nomadic life style?
2. Explain your style/pattern of migration through the routes of pastoral corridors? Do you travel on community bases or on family basis? Please state the reason for adopting the pattern of migration that you stated?
3. Please explain in detail the type of social organization you have among your community members. What social organization do you have that play a role in solving your social problems?
4. Who takes care of the animals herd when the owner travels away for medical check-up or treatment at a health facility?
5. What are the major obstacles that retard the nomads from accessing formal health facilities?
6. What type of transport facility do the nomads use most to reach health facilities?
7. How do you strive to cope up with the illness? What strategies do you use to treat yourself from the disease if it is a woman, a man, an old-age person or a child?
8. What are the perspectives of the nomadic people, that is their health needs, their explanations of health and illness, and their capacities to cope up with the most common illness?
9. What are the routes taken in the year round to travel from place to place in search of pastoral areas?
10. How do you decide to which area to be traveled? Based on type of soil? Types of shrubs and trees? Availability of water? Or other?
11. Do you migrate to a pastor area during the rainy season or during the early dry season? Why? In which month does the rainy season start and end at different places in the pastoral corridors?
12. Do you strive to migrate to grazing places where others have not accessed or you do not care to join other herders for grazing your animals?
13. During which calendar months of the year are you attacked by the major diseases?

    Please follow the following format for explanation.

Name of months	Name of disease	Mostly affected age group	Mostly affected gender group	Area stayed mostly when that type of diseases spreads wide

14. What is the estimated distance in hours from each area stayed by the nomads in the pastoral corridors to the nearest formal health facility?

    Please follow the following format for explanation purpose.

Name of area stayed in the pastoral corridors	Area/village where the health facility is located	Type of the health facility	Estimated distance from health facility to area stayed.	Remarks

15. Mention and locate the major water sources (like rivers, streams, and ponds) found on the nomadic routes or pastoral corridors.

16. What is the minimum and maximum number of weeks stayed near each of the aforementioned water source during your travel along the pastoral corridors?

Please present the information in the following format.

Name of water source	Name of village/area nearest to the water source	Minimum number of weeks stayed near it	Maximum number of weeks stayed near it	Name of the months during which the nomads stayed in the area

17. Are most of the grazing lands found in the pastoral corridor found on plain lands, mountains, or alongside rivers (water sources)?
18. Mention and locate the major mountains found on the nomadic routes or pastoral corridors.
19. What is the minimum and maximum number of weeks stayed around each of the aforementioned major mountains during your travel along the pastoral corridors?

    Please present the information in the following format.

Name of Mountain	Name of village/area nearest to the mountain	Minimum number of weeks stayed near it	Maximum number of weeks stayed near it	Name of the months during which the nomads stayed in the area

20. Mention and locate the name of the major pastoral/grazing areas at which you stay for several weeks?
    Please present the information in the following format.

Name of pastoral/grazing area	Name of village/area nearest to the grazing area	Minimum number of weeks stayed near it	Maximum number of weeks stayed near it	Name of the months during which the nomads stayed in the area

21. In which place/area do most of the nomads meet and concentrate in the course of their journey along the pastoral corridors?
    Please state the information in the following format

Name of area of highest concentration	State its boundaries	During which months of the year is it accessed most	State number of weeks stayed in the area	Remark

22. From which place/area do most of the nomads disperse to different directions (grazing lands) in the course of their journey along the pastoral corridors?
    Please state the information in the following format

Name of the area of dispersion	State its boundaries	During which months of the year is it accessed most	State number of weeks stayed in the area	Remark

23. Do you have any information to add in order to receive a better health service?