Changing Trend of Livelihood Strategies in Beni-Shangul Gumuz Regional State: A Reference to the Berta People, Northwestern Ethiopia

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Abstract

This paper deals with the livelihood strategies of the Berta people in Beni-Shangul Gumuz Regional State, Northwestern Ethiopia. It elucidates how the Berta people make use of their resources. It is also concerned with the changing trend of their livelihood strategies and the major factors that facilitate the change. Then, the paper looks at emerging livelihood strategies through which the Berta people opt to adapt. To address the above objectives, both secondary and primary sources were used. Secondary sources were obtained from both unpublished (reports and archives) and published (online and printed) materials. Fieldwork in the study area was conducted to collect primary data. To collect first-hand information, in addition to observing the day-to-day activities of the Berta in their villages, key informants, randomly selected households for in-depth interviews, and focus group discussions were used. The data were analyzed through triangulation of the above sources. Findings from the study show that the Berta people used to rely on diverse livelihood strategies. Agriculture, trade, gold mining, and handicrafts have been major sources of income. However, particularly since the late 1990s, these livelihood strategies have been put under pressure and gone through several changes that have in turn led to livelihoods declining. This makes the Berta people vulnerable to several socio-economic problems. Climate change, the villagization program, the expansion of large-scale investments, deforestation, the expansion of refugee camps for migrants from neighboring African countries, and political factors such as the government's lack of commitment to improving Berta's existing livelihoods are among the major factors enforcing the change and contributing to the decline of Berta's livelihood strategies. Migration, being a laborer, charcoal production, selling fuelwood, and renting land are among emerging survival strategies.

Keywords: Beni-Shangul, Berta, Change, Forest, Land, livelihood strategies

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1. Introduction

Studying changes in livelihood strategies has become popular since the late 1980s, at a time when environmental challenges occurred in most parts of the African continent and elsewhere in the developing countries. The environmental crisis of the 1980s was accompanied by drought, starvation, and a lack of alternative livelihood sources in general and a lack of food for sustenance in particular (Milton, 1996). Following the problems in the 1980s, interventions from different agents, such as governmental and non-governmental institutions, were important to consistently follow up on change and continuity in peoples' livelihood strategies and scrutinize the challenges and problems related to the consequences of the changes as a result (Devereux et al. 2004). Such environmental challenges resulted not only in livelihood problems, but also in socioeconomic and political changes that affected peoples' ways of lives.

Along with the establishment of regional states in the mid-1990s, a region known as Beni-Shangul Gumuz was established, with the introduction of a relatively new way of administering livelihood resources and people. Following this, the region has seen several changes, including an increase in population, increased investment, and villagization, all of which have had an impact on indigenous peoples' ways of life. Most of the natives' livelihood sources have been declining in both quality and quantity since the late 1990s, owing to both natural and human-caused factors. People's resource use has changed as a result of the overall effects.

This paper deals with changes and continuities in the livelihood strategies of the Berta people. It is also aimed at elaborating on how the people of Berta make use of the environmental resources as their livelihood strategies, explaining the major challenges and changes along with the contributing factors that facilitate the changes. The paper also looks at emerging livelihood strategies that Berta people opt to adapt.

2. The Study Area and the People

Beni-Shangul Gumuz Region (BGR hereafter) is one of the regional states of the Federal Democratic Republic of Ethiopia, located in the northwestern part of the country. The administrative seat of the region is Asossa town, which is 690 kilometers far away from Addis Ababa. The region has international boundaries with Sudan and South Sudan in the West and is bordered by the Amhara region in the North and Northeast, Oromia region in the Southeast and South. The region has a total area of about 50,380 km2 with an altitude

ranging from 580 to 2,500 meters above sea level (BGR Finance Office, 2018).

Agro-ecologically[2], BGR is classified into lowland, which constitutes 75% of the region, the Midlands, which constitutes 24%, and the highland, which comprises only 1%. The region is characterized by a wet season from April to October, and the annual rainfall varies from 800 to 2000 mm. The temperature reaches a daily maximum of 25 degrees centigrade in the rainy season and rises to 40 degrees centigrade during the dry season. The minimum daily temperatures range from 12 to 20 degrees Celsius, depending on the season and altitude. The hottest period of the region is from February to April[3].

The BGR is home to a diverse range of ethnicities. In 2007, the region's population was 670,000, with a projected increase to 1,033,999 in 2006 (CSA 2010). Demographically, the Berta constitute 25% of the ethnic groups in the region, Amhara make up 22%, Gumuz make up 21%, Oromo make up 13%, Shinasha make up 7.7%, and Mao make up 2%. Furthermore, Agaw, Komo, and Tigre account for 3% of the region's population with an equal share. Similarly, a mix of other ethnic groups living in the region accounts for 5.3 percent of the total population. The Berta, Gumuz, Shinasha, Mao, and Komo are officially recognized as indigenous peoples in the region, while the remaining ethnic groups are considered settlers. Although the population of the region is increasing, the population density is still low (14 people per square kilometer), compared to other regional states in Ethiopia. As such, the region has the smallest population density of three people per square kilometer in Guba and Sirba Abay districts, while the largest population density is recorded in Asossa, Bambasi, and Pawe districts, which are estimated at 62 people per square kilometer (Tsegay 2013). On average, 6.7 people live in a household in which most of them live in rural areas (92%), and a few of them live in urban settlements (8%).

Economically, land, forest, and water are the most significant parts of their income sources. Agriculture (of shifting cultivation, honey production, hunting, and gathering) is the major income source on which 93% of the population depends. With a diminishing trend, the average landholding size of a household is 3.7 hectares, and the annual income of a household ranges between 169 and 1499 Ethiopian Birr (ETB).[4] In 2004, 54% of the population was poor, which was reduced to 33% in 2012. In terms of land type, the region

[2] The altitude of lowland is below 1500 meter, midland, 1500-2500 meters and highland is above 2500 meters above sea level.
[3] Beni-Shangul Gumuz Regional State Agricultural Office Report (2018).
[4] Report of the Economic and Finance Office of Beni-Shangul Gumuz Regional State (2018).

is predominantly comprised of bushes and shrubs (77.4%), while forestland comprises about 11.4%. Furthermore, cultivated land, grazing land, and marginal land account for 5.3%, 3.2 percent, and 2.3%, respectively[5].

Administratively, the Beni-Shangul Gumuz Region is divided into three zones: Asossa (where the Berta people dominate), Metekel (where the Gumuz people dominate), and Kamashi (where the Shinasha dominantly live). There are also two *liyu woredas*[6] (special districts) as well: Mao-Komo and Pawe. They are special *woredas* because of the ethnic composition of their holdings.

This paper focuses on the Asossa zone, which comprises seven *woredas*: Asossa, Bambasi, Khomosha, Horazab, Menghe, Oda-Bildgilu, and Sherkole. According to the 2007 population census, the Asossa zone had a population of 322,121 (165,120 men and 157,001 women). Of the total population, only 46,120 (14.3%) were urban dwellers, making the zone dominated by rural residents. Moreover, 96.3% of the urban population lives in Asossa town. In the Asossa zone, the major ethnic groups are the Berta consisting of 60%; Amhara, 25%; Oromo, 11%; Tigre, 2%, and others constituting the remaining 2% (CSA, 2010).

The Berta people are indigenous to the Beni-Shangul Gumuz Region, where they live today, and they are divided into several clans. According to Triulzi (1982), there were 99 clans of Berta identified as "*Fa*" based on their settlement patterns. Among the currently existing clans, for instance, are *Fa-Undi, Fa-Hamosh, Fa-Shita, Fa-Koldi, Fa-Tsore, Fa-Aracabia, Fa-Alahangia, Fa-Asurakab*, and others. The Berta people are multilingual: they speak their language-Berta, commonly known as Rutani, which is in the Nilo-Saharan language family. Most of them also speak Arabic, Afaan Oromo, and Amharic.

3. Scope and Sampling Technique

Of the seven *woredas* of the Asossa zone, three of them[7] were purposely selected for this study. Then, based on purposive sampling from each district, one *kebele*[8] was selected as a specific study site[9]. The three *kebeles* were selected based on the following criteria: Kush Megani was chosen because it is

[5] Annual Report (2012) of the Ministry of Finance and Economic Development.
[6] *Woreda*, literally translated as a district, is a local political administration below the zone,
[7] Asossa, Homosha and Sherkole
[8] This is a local political administration below the *woreda*, several *kebeles* form a *woreda*.
[9] Kush Megani from Asossa, Bamadon from Homosha, and Amekezegn from Sherkole districts.

the center where most of the socioeconomic groups indicated above are found, and it allowed easy access to information about the entire groups' livelihood activities, mainly the Berta. Bamadon was selected because it is not far from Sherkole and Tsore refugee camps, where indigenous people interact with the refugees daily, making it a convenient place to get information concerning the two groups. Amekezegn from Sherkole was selected mainly because the communities in this *kebele* are major targets of development interventions. In the three *kebeles*, a large amount of land has been transferred to investors, while a large number of people from these *kebeles* have been incorporated into villagization programs that have taken place in the past eight years. Thus, it was possible to obtain ample information about the current livelihood situations of the people.

4. Methods and Data Sources

To address the objectives, this study primarily relied on qualitative data sources. Thus, direct observation was one way in which livelihood activities, for instance, farming systems and Bertas' daily activities, situations of people in the new settlement areas, refugees' interaction with local people and with natural resources, and environmental situations such as the forest cover, marketing strategies, and socioeconomic interactions among the Berta and other communities were observed. In addition to observation, data were collected through key informant interviews and in-depth personal interviews with experts, officials, and selected Berta informants across age and socioeconomic groups. Accordingly, thirteen key informants and seventy-two randomly selected households for in-depth interviews were selected and used. Data in the form of group views related to the objectives were also collected from participants of seven focus group discussions that were organized in different areas with different groups. Finally, the data were analyzed through triangulation of the different sources to validate the study findings.

5. Conceptual Framework and Review of Empirical Evidence

5.1 Conceptualizing Livelihood and Livelihood Strategies

Since the 1960s, social scientists' primary focus has been on issues of livelihood and people's strategies, though there are differences in how these strategies are conceptualized. Chamber and Conway (1991) define livelihood strategies as "activities," "capabilities," and "assets," whereas Baro and Deubel (2006:528) argue that rural livelihoods, in particular, should include "on-farm and off-farm" actual activities that are necessary to make a living. To better understand the Berta people's livelihood strategies, the Environmental

Entitlement Approach and the Sustainable Rural Livelihood Framework are used in this paper.

The environmental Entitlement Approach has become popular in the early 1980s (Leach et al 1999:232). It mainly focuses on the institutionalization of livelihood activities both at the micro and macro levels (Cundill 2005:37). It is also concerned with the roles that formal and informal institutions play in shaping societies', households', and individuals' access to livelihood sources. In this regard, the ways Berta people make use of their livelihood resources can be understood.

The environmental entitlement approach emphasizes the importance of two major concepts: "endowment" and "entitlement" (Leach et al. 1999). Environmental "endowment" is concerned with the actual available resources such as, for instance, "land, labor, and skill" that communities and their members may have to secure their livelihoods. Environmental entitlement is concerned with an individual, household, and community's right to access, use, and control over environmental resources as sources of livelihood. According to Leach et al (1999:233), environmental entitlement is concerned with "alternative sets of utilities" and resources that either an individual or group of individuals could access and use. Moreover, as Osmani (1993) indicated, whether it is formal or informal, entitlement refers to the rights to access, use, and control over the available resources and sources of livelihood.

With the environmental entitlement approach, one can address questions related to who decides upon the endowments: the wealthy? The poor? Politicians? Or any other agent, or jointly? Etc. Here, on the one hand, formal institutions' decision-making power can be considered. On the other hand, there are informal institutions that ensure "customary rights legitimized by social norms and codes of behavior" can be emphasized as they influence the livelihood strategies of the people (Cundill 2005).

The institutional approach to livelihood strategies of the people asserts that through incompatible policy formulation and inappropriate interventions, existing indigenous institutions may be threatened and could be changed. In this case, communities and their members may find alternative livelihood activities in contrast to the informal ways of accessing and using the resources. This situation may lead resource users to devastate their environmental resources, which in turn exacerbates livelihood insecurities (Mearns 1996). These statements entail an environmental entitlement approach that deals with explaining how formal political institutions affect rural communities' access to livelihood sources. It is also concerned with the ways indigenous institutions

work with the various groups' environmental management practices to ensure livelihood security. In the past three decades, due to federal and regional land-related policies, the Berta and other indigenous communities in BGR have lost their main livelihood sources, such as land and forest.

Sustainable Livelihood Framework: development-oriented institutions, for instance, DFID, WB, UNDP, FAO, Oxfam, and the like, prefer to focus on livelihood strategies in terms of their sustainability. For this, they formulate a framework known as "sustainable livelihood," also known as the "sustainable rural livelihood framework. According to Radel (2012:63), this framework is mainly concerned with three interrelated aspects: societies and their overall capacity to overcome problems of livelihood; activities and practices for living; and "assets," or the properties households could have at hand.

As Divakarannair (2007:13) puts it, a sustainable livelihood framework is a "comprehensive and effective means of organizing the management of assets…that poor people access to make a living". It brings social, economic, political, environmental, and other challenges together and looks at opportunities in the process of obtaining livelihoods. The framework also helps to understand how resource users in a group or at an individual level enhance their capacities to overcome livelihood insecurities sustainably. In this framework, to understand all or most components of livelihood strategies, scholars, for example, Daskon (2010); Krantz (2001); Kollmair and Juli (2002); and Ellis (1999) suggest the importance of focusing on the relationships among livelihood assets (natural[10], social[11], financial[12], human[13],

[10] It is the biophysical environment consisting of farm and grazing lands, soil, water, forests, trees, and so on that serves as a stock to most rural communities' livelihoods (DFID 1999).

[11] Social asset is about strengths of communities' livelihoods. It consists of social networks, social organizations, social associations, group affiliations and many other social ties that used to ease problems and shortages of livelihoods. It depends on faithful and reliable relationships of community members that facilitates and ensures access to livelihood resources and sources (Divakarannair 2007). Moreover, social asset of livelihood is important not only to address individual's and communities' economic aspects but also their non-economic behaviors that mediate their access to various livelihood assets (Ellis 2000).

[12] This is also known as economic asset. It is with financial resources both in kind and in cash that humans could adopt or adapt so as to diversify their livelihoods. In this regard, savings in cash or in kind, credit in cash or in kind, and income from employment and labour service, transactions, reciprocity and other exchanges among individuals and groups are important examples (Chambers and Conway 1991).

[13] This is concerned with skills, knowledge, labour, and abilities that individuals may have to pursue their incomes. It is a capability that enables communities and their members to diversify and recover from the adverse impacts of environmental change (Krantz 2001:9).

political[14] and physical[15]) and the ways communities access and use all or some of these assets to diversify their livelihoods.

5.2 Review of Empirical Evidence

In developing societies, such as in Africa, most studies related to livelihood and livelihood strategies have been conducted since the 1990s. In particular, compared to other African regions, scholars indicated that societies in sub-Saharan Africa are the most vulnerable to livelihood insecurities (Lwanga 2002). As Ngigi (2009:1) explains, environmental uncertainties and their negative impacts on the livelihoods of the people in this region are immense. This is because, as Alexander (2011:121) stated, mostly the environment is fragile that has a direct impact on peoples' survival strategies.

In Ethiopia, there are pieces of evidence that show the government's inappropriate interventions and environmental change put societies' livelihoods in danger. For instance, according to Desalegn (2001, 2009), especially since the 1960s, generally, in the north-eastern and north-western highlands of Ethiopia, the process of environmental change is very fast and directly or indirectly affects peoples' ways of living. The change is attributed to various actors and factors both at macro and micro levels. In Ethiopia, the government's interventions in peoples' rights to access environmental resources have been the major challenge of all. As Zaitchik *et al.* (2012) and Temesgen *et al.* (2009) indicated, in the Blue Nile watershed, climate variability and "local climate contrasts" are major challenges for the livelihoods of the communities in the area and that the government, through its policies, often exacerbates the challenges.

According to studies, people in the Beni-Shangul Gumuz Region in general, and the Asossa zone in particular, are currently under the pressure of livelihood insecurity caused by internal and external factors, just like the rest of the country (Tsegaye 2013). One of the major factors causing livelihood insecurity in the region is the transfer of a large amount of land to domestic

[14] Political asset can be categorized into two: informal and formal. The informal one consists of societal norms, customs, traditional rules and procedures that determine how societies make use of the available resources, whereas formal political asset involves issues concerned with self administration; the right to enjoy access to livelihood resources and sources in line with the existing formal rules and regulations (Divakarannair 2007:5-6).

[15]This is concerned with production equipments such as agricultural tools and technologies, erosion protection facilities, water pumps, infrastructure, for instance, roads to market outlet, and physically existing properties, for instance, livestock (goats, sheep, cows, oxen) that in one way or another are considered as sources of livelihoods (Dulal *et al* 2010:13).

and international investors (Tsegaye 2013). This investment process in the region has not been as successful as expected, and it has significantly degraded natural resources and jeopardized people's livelihood strategies. As a result, locals were forced to change their sources of income or remain jobless. According to Human Rights Watch (2012), approximately 27 percent of Benishangul Gumuz's total land had either been leased to investors or was actively marked by the Federal government.

Along with the government's inappropriate interventions, there is also a study by Hailesellasie et al. (2008), which attributes the problem of livelihood strategies of the people to the climate change of the region. Using 1070 ETB per capita income as a poverty line, the authors estimated that approximately 55 percent of the population in the region was poor (i.e., earning less than 1070 ETB). Hailesellasie *et al.* (2008) also presented evidence showing that people's livelihoods are changing. For instance, sorghum yield, which is the major crop of the study people, has declined from 0.9 tons per hectare in the 1980s to 0.4 tons per hectare in the 2000s. Moreover, in the early 1990s, a household held an average land size of 5.5 hectares, whereas in the 2000s it was reduced to no more than 2 hectares per household (Hailesellasie *et al*. 2008). The above factors came to be the major enforcing factors that facilitated the shifting of peoples' livelihood strategies in the region.

A study by Seid, Jema, and Degye (2016) is concerned with climate change adaptation strategies of shifting cultivators in the Asossa zone. According to these authors, the Berta use different kinds of coping strategies to minimize the negative impacts of climate change and to improve their livelihoods. Shifting the dates at which they plant the seeds, as well as variations in rainfall, are examples of these. They are also shifting their livelihood activities and trying to diversify their income sources, though often unsuccessfully. Fayera *et al.* (2017) studied market supply determinants of lowland bamboo in the case of the Homosha district of the Asossa zone. This study identified that in the area, despite abundant and valuable lowland bamboo, its contribution to their income is insignificant and the "livelihood of smallholder farmers in the area is [negligible]." (2017:46). However, as Dereje *et al.* (2016) and Semeneh *et al.* (2016) indicated, bamboo deforestation has become a serious problem in the study area. This threatens the biodiversity of the local environment and the livelihoods of those who depend on it (Semeneh *et al.* 2016).

In relation to the above notion, Maru (2011) studied the livelihood risks that Berta people are facing. According to Maru (2011), the rights of native resource users have not been respected because they have not been consulted, particularly when the land has been transferred to investors. Teferi *et al*.

(2009) are also concerned with the extent and factors determining the use of indigenous medicinal plants by the Berta community. The study found that such knowledge is held by a group of people and that the larger Berta used it as an alternative method of health care and as part of their livelihood strategies. The Berta, on the other hand, stated that their indigenous knowledge and practices related to medicinal plants and care systems are under threat, owing primarily to deforestation, the effects of climate change, and the expansion of large-scale farming by investors.

6. Major Livelihood Activities of Berta People

As the oral history of the Berta indicated, they used to have diversified livelihood sources. In general, their livelihoods consisted of on-farm (shifting cultivation and livestock production), off-farm (wild fruit and root crop gathering, as well as collecting honey), and non-farm (mining, trading, and handicrafts)[16] activities. The Berta people mainly consider three important resources as part of their livelihood sources: land, forest, and water. They believe that, though there is a strong interdependence among these resources, the land is the mother of all, and they consider it the primary and most important resource since it holds every resource that they tend to use in their lives. They believe gold is one of the resources that they obtain from the land. The land also gives them forest, which is considered a source of livelihood. They consider the forest the next life provider after land. The forest is a source of food (fruits, root crops, and leaves). The forest is also a home for the animals that they hunt; a source of honey; a source of medicine. Above all, they consider it their shelter.

***i) On-farming Activities*:** As their livelihood strategy, the Berta people engaged in farming activity. It mainly consists of three activities: shifting cultivation, animal husbandry, and fruit production.

***Shifting Cultivation*:** The Berta people are shifting cultivators mainly due to the relatively extensive land accompanied by a relatively low population density. Berihun (2009) described various types of shifting cultivation practices based on the type of environment (soil, forest, and weather conditions). Slash-and-burn cultivation, hoe cultivation, and crop rotation are among the common ones (Berihun 2009). One of the major agricultural practices that most shifting cultivators share is the practice of clearing and

[16] There are Berta clans that produce handicrafts to diversify their incomes and livelihood strategies from the surrounding environment. Notable items are pottery products, bamboo products, and wood-made items.

burning forest lands. As a result, some scholars and most political authorities blame and consider shifting cultivation as "backward" and label the practice as primitive by considering that it destructs environmental resources and does not allow accommodating a large number of people (Wolde-Selassie 2001). However, there are debates on the advantages and disadvantages of shifting cultivation, and the practice of shifting cultivation differs from place to place and across societies.

Among the Berta, both slash and burn[17] and hoe cultivation[18] are common practices, and Berta elders have positive attitude towards shifting cultivation. They explain that the area they lived in was endowed with abundant natural resources: extensive land with an immense forest cover of various tree species that the Berta clans used to live in. For a long time, they practiced crop cultivation with a hoe. According to informants, the major characteristic of the hoe cultivation that the Berta used to practice was the shifting of land within a certain period of interval. They claim that to cultivate, rather than clearing and burning long tree species, they used to clear the bushes and burn them to produce on the cleared lands. They explain that this practice maintains the fertility of the soil and enables the bushes to grow fast. Informants also indicated that in the past, they used to practice shifting cultivation, i.e., clearing of land used to cultivate for 4-5 consecutive years, then laying fallow the land for 2-3 years. Currently, there is an opposite practice in which the land is cultivated for a year or two and then laid fallow for 4–5 years to let the land recover. This means that, in recent times, it will take the land 4-5 years to recover its fertility. This is affecting "our incomes and livelihood strategies." This has also resulted in the reduction of the forest and land for cultivation.

As most FGD participants in Bamadon *kebele* agreed, for several generations and until very recently, "we have been producing different cereals with a hoe. Of these, sorghum, sesame, niger seeds, and maize are the important ones. We do this without clearing major tree species, except for the smaller ones (the bushes). To produce cereals, we use simple tools that do not destroy our natural resources." Livelihood activities were communally managed by the different Berta clans and their members. For instance, decisions on land and forest use and management were communal tasks that prevented individuals from accessing resources. Today, it is difficult to get communally held lands as well as fallow land, and even if it is available, it will immediately become a

[17] This is a method of agriculture in which existing vegetation is cut down and burned off before new seeds are sown, typically used as a method for clearing forest land for farming:
[18] This is to show that instead of Oxen, the Berta use hoe as a tool for stirring the soil.so at to grow their crops.

bone of contention among individuals or groups. This is due to the increase in competition to control land for intensive farming by settlers coming from neighboring regions and by so-called investors. This situation contributed to the reduction in the forest size and the land for hoe cultivation that the Berta depends on.

According to some informants, intensive farming was introduced into the area after they were incorporated into Ethiopia's central government in the late 1890s, which was followed by the arrival of new officials in the area. According to an Asossa district informant, intensive farming has been practiced extensively since the mid-1990s, when the number of highland migrants increased in their communities and investors began to arrive. It seems that these major events accelerated competition over the land, and then the growing demand for a cash crop, particularly for sesame from the central market, increased the practice of intensive farming in the study area. Such occurrences exacerbated the region's local environmental change.

Some informants explained that they were forced to compete for the remaining land, and usually, they were not competent enough to control it. Informants also claim that, as a way of life, they often retreat to forest areas, though this has become challenging as deforestation in the area has devastated the forest lands. Following land control by investors, the beginning of cash crop production and population increase in the area challenged and endangered the shifting cultivation that the Berta used to depend on as a livelihood strategy. This, in turn, is leading the Berta to live a desperate life or adapt[19] to new way of life.

Animal Husbandry - As Berta elders claim, in line with crop production, each Berta household used to herd hundreds of cattle at a time. Among the Berta, in the past, cattle ownership was an indicator of wealth and a symbol of high status. They used to export cattle to Sudan. However, currently, most households do not have cattle that they use as livelihood assets or that they use for any other purpose. They remained with small animals such as goats, sheep, and poultry. It was since the 1960s that their cattle have vanished. There are different reasons for the decrease in cattle numbers.

As Bertas' elders remember, in the pre-1960s, each household had hundreds of cattle. It was in the 1960s and through the 1970s that households began to lose their cattle. This happened over time, but in the early 1980s, cattle in the area

[19] Adaptation in this regard is the way of life that the Berta are trying to adjust themselves as they lack better opportunity and option to improve their livelihoods.

almost vanished. According to informants, this was mainly due to the outbreak of an epidemic affecting Tsetse flies. The informants also claimed that after the eruption of the epidemic, through their local delegates, they appealed to the central government of Emperor Haile Selassie (1916–1974). However, the Emperor did not respond to their quest. Though research in this regard is scarce, there are a few works worth mentioning. For instance, Teferi *et al.* (2009) explain that livestock diseases such as enzootic diseases and paroxysms of epizootic episodes have prevailed in the Beni-Shangul Gumuz Region, particularly in the areas where the Berta people reside. However, the authors did not mention when the cattle disease erupted in the area.

Some informants narrated a different story about the loss of their cattle. According to this group, the problem started in the late 1930s when the area was bombarded by Italian aircraft that used mustard gas to destroy Ethiopian patriots who, at the time, were deployed in the forest of the area. An elder said that at the time, there were Ethiopian patriots in the jungles of their localities who worked in between Sudan and Ethiopia. The Italians used an aircraft intended to kill the patriots, and along with that, they devastated the environment. Within a very short period, dozens of cattle were killed, and after that, the air, grass, and water in the area became polluted so that they have not been able to reproduce cattle.

Fruit Production: The Beni-Shangul Gumuz Region in general and the Asossa zone in particular, are ideal for fruit production. Of these, the area is known for its mango production. According to informants, in the past, mangos were produced for consumption at home. Through time, it has become a source of income for several households and even become an indicator of wealth. Study participants ranked Berta households based on the number of mango trees they had planted. Accordingly, a better-off household could have an average of 150 mango trees; medium-sized households could have an average of 75 mango trees, and relatively poor households could have up to 25 mango trees. There are also poor households that do not have any mango trees at all. Mango owners claimed that, although their mango is famous in most parts of the country, even up to Djibouti, they did not get a significant benefit from their production. Rather, merchants come to their localities with their trucks and purchase the mango as it is on the farm, and this does not benefit them compared with the merchants.

Mango owners frequently complain about a variety of issues. The first is a harvesting issue, in which many mangoes are wasted when they are harvested from the tree. When traders buy mangoes off the tree, they first let all the

mangoes (matured and immature) fall; then they select only the matured ones, leaving the others to rot, and they pay only for those they have received. Mango growers require a solution from the local government in this regard. Another issue that mango growers face is gaining access to a market for their products. In this regard, they have no other market access than those who come to their villages and buy their mangoes without bargaining. As a result, the price of the mango is determined solely by the traders. The third issue they frequently encounter is mango diseases, which have recently been introduced into the area. Particularly since they have seen how their production has declined due to mango disease over the last five years. According to informants, they used to collect 2-3 times per year in the past, but now they only collect once a year or once every two years. Informants claim that they did not receive a solution from the government and that as the disease spreads throughout their communities, it is becoming increasingly difficult to pursue their livelihoods.

ii) Off-Farm Activities - For Berta people, among the off-farm livelihood activities, the honey collection is the one that makes them skillful and uses it to supplement their livelihoods. Informants explained that in addition to crop cultivation, the Berta are skillful collectors of wild honey (usually produced in the natural cavities of big trees) and honey production (using hives). They used to produce and collect various honey types for different purposes: for consumption, medicine, market exchange, and ritual purposes. According to their tradition, a honey collector should be an able-bodied male who can prepare several hives at a time in the forest and carry them to hang on the proper tree species[20] and collects the honey on time. The honey collector undertakes several tiresome and challenging activities that require the departure from home for a few days and/or even for weeks. In this way, until the recent past, Berta men have been producing honey two times annually.

Participants in the FGD agreed that honey production is currently difficult. That is to say, the rate and amount of honey production have been steadily declining, and in most places, the honey collection is a historical fact that is rarely practiced. It is explained that, first, because individuals compete for resources, it is difficult to obtain land on which to grow flowering trees and flowering grasses today. As a result, honeybees have migrated to new locations, most likely outside of their current range. Second, it is difficult to find tall and sturdy trees on which to hang hives because they are being destroyed by humans (investors, migrants, refugees, and the Berta

[20] There are some tree species that are poisonous and might kill the honeybees, and to knowing the proper tree species that attract honeybees is part of their indigenous knowledge.

themselves). Third, the available tree species are few and now owned in a group or privately with the land, so no one except relatives or family members allows honey collectors to hang hives on "others" land. Fourth, even if one can find a tree and hang his hives, he may not be able to recover the hives due to theft, which has never been known among the Berta people. As a result, it is difficult to find a man today who produces honey for consumption or other purposes.

Other off-farm activities on which the Berta relied were hunting and gathering. The Elders explained that hunting has always been a man's domain. There was once a belief, which is now only found in a few places, that a man is not considered brave and good among his kin. Unless he hunts, he may not be appreciated by his wife and family. Both men and women have traditionally gathered fruits and root crops from the forest. This was primarily for medicinal purposes. However, as with honey production and shifting cultivation, the Berta have abandoned hunting and gathering or activities related to these livelihood strategies, which rarely serve the Berta and are only available in a few places to supplement daily food.

iii) Non-Farm Activities: These are mainly traditional gold mining and cross-border trade. ***Traditional gold mining*** is one of the most important means of income through which Berta people subsidize their livelihoods. Informants explained and FGD participants viewed that gold mining is not only their income source but also an activity that God provided them to their ancestors and passed to this generation to supplement their incomes. They also believe that God gave them special knowledge and technique to explore, identify and pan the gold.

According to study participants, as part of their income, gold mining is often used as a risk-averting activity in times of livelihood shock. It is particularly useful when agricultural productivity fails or is devastated by natural disasters. Berta elders claimed that during the *Dãrg* time (1974–1991), "even when the government prohibited panning gold, we used to produce and sell it in the local market as well as in Sudan." This was because gold mining and panning are the life that God gave us to live on". According to a statement raised by a participant in FGD,

> Now we can say there are three groups of gold miners in the area. The first group is the newcomers, non-natives, who are also powerful, come to the area with machines, use the external market to sell gold, and are backed by the government, especially by the military defense on the

border between Ethiopia and Sudan. The second group is migrants who learned gold mining activity from the Berta and those who engaged in the activity recently supported by the investors. The third group is the natives, Berta traditional gold miners, who do not have the power to claim their rights.

According to researchers such as Bullock and Morgan (2018), gold is widely available in Beni-Shangul Gumuz, primarily in the region's rivers and rocks, where residents mine gold using artisanal methods. According to data obtained from the Asossa zone finance office, more than 85% of Asossa district residents, 90% of Sherkole residents, and 88% of Homosha residents supplement their sources of income with gold mining. They use artisanal gold mining mainly as a risk-averting mechanism in case of the failure of agricultural productivity. That is, the Berta use the income from their gold only when they have a shortage of livelihood and otherwise save it at home. Informants and focus group participants also indicated that, from their local knowledge, the Berta know that of the eight districts of the Asossa zone, five of them[21] are rich in gold that every Berta, bounded by his/her clan, can exploit. In this case, there are knowledgeable Berta elders who can identify areas of gold deposits for their clan members so that they can participate in panning for gold.

Within the clan, at a household level, there is a gender and age-based division of labor in which men, women, and children, i.e., husband, wife, and their offspring, often take part in the activity of gold mining. While men often dig the core and the rock, women sieve and separate the soil from the gold particles.

Asossa Zone Office of Mines and Energy espoused that traditional gold mining activity is practiced in all three zones of the region and is the means of subsistence for a large number of people, where the Berta take the lion’s share. Different sources show different results on the number of miners in the Beni-Shangul Gumuz Region. For instance, Beyene (2015) identified that in the region, traditional mining covers 57% (now numbered to be 110,000) of people’s livelihoods. It is also estimated that artisan gold miners in the Asossa zone are numbered between 55 and 63 thousand, and an average of 180 kilograms of gold is mined annually "(Asossa Zone Mining and Energy Office). Beyene (2015) also counted that in the region about 114 associations are using traditional gold mining as their livelihood.

[21] These districts are Asossa, Homosha, Menge, Sherkole, and Kumruk.

Participants in the focus group discussion pointed out that the type of gold produced in their localities is much needed in different markets, such as, for instance, in Sudan and at the central market in Addis Ababa. They stated that gold mining is a tiresome task. It requires digging very deep pits ranging from 5–12 meters, and this shows to what extent it is a risky business. If a person is lucky, he may also find gold in the fields without digging, just near the rivers. This, however, has become rare.

Trade has been another livelihood activity that the Berta have used to supplement their incomes. In particular, before the 1970s, the Berta used to dominate the trade route between Beni-Shangul Gumuz (Asossa) and Sudan bordering western Ethiopia and Eastern Sudan. In the mid-1970s and through the past two decades, they were denied the right to continue their trade as it was in the past. Trading activity was dominated by men as it required traveling several kilometers on foot and crossing jungles found between Ethiopia and Sudan. According to informants, trade between Asossa and Sudan is preferable to trade between Asossa and Addis Ababa. There are some reasons, informants explained; one is that the distance between Asossa and Eastern Sudan is shorter compared with the distance between Asossa and Addis Ababa. Two, they prefer trading with the people whom they call "brothers", mainly due to their ethnic and linguistic affiliations. Three, they argue that most of the items they import from the Sudanese are cheaper, genuine, and durable compared with the items they purchase from Addis Ababa. From Sudan, the Berta traders import mostly industrial products such as food oils, clothes, perfumes, shoes, Omo soaps, and many others. Moreover, onions are one of the most important agricultural products that the Berta traders import from Sudan. The items that the Berta exported to Sudan were gold in different qualities and sizes, coffee, cereals such as maize, sorghum, beans, and other agricultural products. However, informants complain that exporting gold to Sudan has declined since the early 1990s, and currently, it is hardly possible to find Berta gold traders.

Informants claimed that in the past, in all the trading processes, the Berta had had open access to customs authorities on the border, which is now established at Kurmuk. With the opening of a customs authority office on the border, however, most of the merchants were asked to pay tax for the small items they imported from Sudan. Most of them explain that "for us, it is unfair to pay tax," as they work not for profit, but to travel to Sudan to spend time with their "brothers" and "relatives" or/and to get a small benefit from the trade so that they can subsist. Informants also claimed that they used to interact freely with their relatives in Sudan free of charge to pass their items across the border.

Free interaction and exchange of items were interrupted in the mid-1970s and prohibited in the years after that.

According to informants, currently, few individuals are allowed to freely pass items they imported from Sudan to sell in the markets of Asossa and beyond that, in Nekemte and up to Addis Ababa. These are individuals who are members of Ethiopian soldiers assigned to protect the border and individuals who have relatives in the military on the border between Ethiopia and Sudan. As an informant claimed,

> Specifically, since the late 1990s, it is members of the military who benefit from trading in the form of contraband who also control the trading of gold between Beni-Shangul and Sudan and between Beni-Shangul and the center in Addis Ababa. We, the Berta, are not allowed to do all these. As a result, in the past few years, we engaged in conflicts with Ethiopian soldiers and with a group of individuals doing these activities in gold mining areas and on the border too. When there is a conflict, it is the military on the border that comes to intervene, while the local police do nothing for us.

Informants also explained that, based on their amount of wealth, they traded items between Sudan and Ethiopia. Accordingly, wealthy Berta merchants purchase different types of cereals and gold from the Ethiopian side while importing any manufactured items from Sudan. For this trade exchange, these groups of merchants use trucks. These merchants often have the potential to bribe the soldiers in return. There are, however, relatively poor merchants who used to carry their items by using a donkey. Informants complain that in all these cases, "we pay taxes while others[22] do not."

7. Major Factors Contributing to Livelihoods' Change

There are various internal and external factors in the study area that can be mentioned as causes of change in the Berta people's livelihood strategies. Climate change and environmental degradation are among them, as are the settlement of migrants and refugees, villagization, new forest management programs, and the introduction of "development" programs carried out by the federal government and regional or local administrations. Land transfers, for example, to investors.

[22] When informants say "others", it is to refer to the Tigrians and their relatives who are members of the Ethiopian soldiers on the border between Ethiopia and the Sudan.

I) Climate Change and Environmental Deterioration: in addition to informants' explanation about climate change and local environmental deterioration of the study area[23], a scientifically proven analysis demonstrates that the climate in the study area has changed. For example, Belay *et al.* (2013, 2012), Zaitchik *et al.* (2012), Belay and Shibru (2011), and Temesgen *et al.* (2009) identified a changing trend in the Blue Nile region's climate and local environment. According to Temesgen *et al.* (2009), in the study area, local climate change has resulted in weather extremes such as droughts, floods, and storms, which have a significant impact on communities' livelihood strategies. Furthermore, in the Blue Nile region, "climate variability," "local climate contrasts," "erosive rains," and "erodible soils," combined with pressure on land and forest resources, make the communities "highly vulnerable to negative impacts of climate change," according to Zaitchik *et al.* (2012). (2012, p. 435).

Based on the differences in life experiences that they have encountered, the Berta people perceive climate change in various ways. As households have different economic strengths, they are often differently exposed to the consequences of climate change. As they share common resources to earn income and peruse their livelihoods, sometimes they have similar perceptions. The differences and similarities in perception also depend on the households' ownership of assets such as land, labor, and cash. In general, both informants and FGD participants use the word "environment" (mainly land, forest, and water) to indicate climate (rain, temperature, air, and other weather conditions). They perceive environmental change as an indicator of climate change.

Participants in the Focus Group Discussion agreed that in the past two decades, they have witnessed the change happening in the local environment. They categorized environmental change into two entities: First, there is a change in local climatic conditions, mainly related to the usual local seasonal patterns. This consists of changes related to rainfall and temperature. Secondly, there is a change in the physical environment that they work in. This comprises the changes attributed to land, water, and forests of indigenous tree species and wild animals. The changes depend upon one another, and both changes have affected their livelihood strategies.

According to informants, the change in the usual seasonal pattern consists of rainfall deviations from their usual timing patterns. This means that the

[23] Beni-Shangul Gumuz Region is part of the Blue Nile Watershed area and there is an extensive study done so far concerned with climate change of this watershed area.

absence or delay of rainfall that lasts a long time or is short in duration and intensity is characterized by the timing of rainfall. It is also the variation in the intensity of rainfall. Climate change is also linked to an increase in local temperatures. The variation of the local season is determined by the local climate, which in turn determines the working schedules of households. The unusual seasonal pattern also contradicts the schedule of livelihood activities (trading, mining, agriculture, etc.), which has a negative impact on the total amount of income households expect to receive.

Study participants[24] explained different indicators of local climate change, among which drought one. They explained that drought is related to the absence and delay of rain from its usual seasonal pattern, no matter how long the absence of rain lasts. They remember that before the 1980s, in their locality, rain used to fall once every two or three years, which has become more frequent in the post-1990s. The statements are in line with Temesgen *et al.* (2009), which stated that the occurrence of frequent drought in the Blue Nile Region is increasing over time. The overall effect of drought in the study area is the decline in the amount of income from different livelihood sources, which leads the study people to livelihood insecurity. According to an informant,

> In the past two decades, despite the increase in the frequency of the occurrence of droughts, we have tolerated those bad situations through different mechanisms. For instance, we extracted gold and sold it to the Sudanese and other Ethiopians coming to our villages, though the amount of gold we used to obtain was by far smaller than the previous decade. During the drought and when we did not get gold at the same time, we used to eat once a day or even once every two days. But, thanks to our Kalwa[25], the better-off and the poor comes together, support each other, and we share what we have and eat together.

The increase in temperature is another indicator of local climate change in the study area. However, they have difficulty explaining the time when the temperature has begun to rise. Informants explained that the increase in temperature negatively affected their physical environmental resources, which in turn affected their farming and the amount of forest in the area. The high

[24] All FGD participants in all the study areas have experienced the drought they have explained.

[25] This is Bertas' socioeconomic institution, used in order to support each other and used to handle their problems. It is explained in the preceding sections.

temperature accelerated evaporation and drained moisture and nutrients from the soil, rendering it unproductive. An informant further accounted that,

> Previously, especially before the 1990s, the land was generous, and we were able to work easily and produce well. The land is no longer as productive as it was in the previous two decades as a result of climate change. Then, as time passes, the frequency with which land is left fallow grows. Furthermore, our forests have declined, exacerbating the negative effects of climate change.

In addition to local climate change, the study people emphasize the discussion of physical environmental change. This comprises of deterioration of land/soil fertility, encroachment of lands by other communities, change in land use pattern and decrease in the size of cultivable land. The disappearance of indigenous tree species, disturbance of biodiversity, and eradication of wild animals are major indicators of physical environmental change that study participants discussed. They perceive that all of these changes have contributed to the decline in productivity which, in turn, negatively affected their incomes and change in their livelihood strategies.

Informants often explain environmental factors that constrain their success in livelihoods. For instance, they explain the damages that occurred on the land they manage, the decrease in soil fertility, and the negative consequences they suffer. They are also curious when they explain the fragmentation of land by the investors and migrants and the continuous decrease in the land size per household.

Due to the change in physical environmental resources, which is the major livelihood source, Berta households responded to the environmental change in various ways, and the responding strategies depended on the number of assets they owned. The responding strategy also depends on the socioeconomic networks and attachments households establish with their fellow kinship and non-kinship households. As a case in point, what is known as *Kalwa* is one of the socio-economic institutions that Berta people depend on to support each other in times of risk and at any time when there is a problem.

Another important way that Berta households respond to physical environmental change is by adjusting their on-farm[26] activities, such as

[26] Based on their interests and academic backgrounds, scholars define the term "on-farm" and related activities. For the sake of convenience in this study, on-farm activities are agricultural activities, farm and animal husbandry, and other activities from which women and men of the households directly generate income (Ellis, 2000).

shifting the time of planting.[27] Historically, the Berta used the land they farm for four or five farming seasons after burning, slashing, and planting. Currently, however, the fallow does not go more than two years. Moreover, the Berta often try to engage in non-farming and off-farming activities to supplement their incomes.

***ii) Large Scale Investment and its On-going Expansion*:** Informants and FGD participants claim that particularly since the late 1990s, due to its abundant resources, several foreign and domestic investors have been interested in getting land in the Beni-Shangul Gumuz Region. As a result, both the federal and regional governments transferred a huge amount of land to investors. From the perspective of the federal government, the major assumption was that the region is "no man's land" in which abundant land is available but accompanied by a scarce population. From the regional government's perspective, the Beni-Shangul Gumuz Region has been considered a region with untapped natural resources that can be exploited by investors, provided that those investors can benefit themselves and the native communities. Informants indicated that, in reality, however, natives were dispossessed of their natural and cultural resources and eventually displaced from their livelihood sources. According to Tsegaye (2013:17) in Benishangul Gumuz pieces of evidence show,

> There has been an increasing level of land transfers to investors for agricultural investment, particularly since 2005. Based on data compiled from various sources, the amount of land transferred in the region to investors, both domestic and foreign, reaches 390,590 hectares. The transfer of such a large amount of land has been undertaken both by the regional state and the federal government.

Data obtained from the region's Finance and Economy Office in 2017 indicated that the amount of land intended to be transferred reached 497,272 hectares. From the above number of hectares that were transferred to investors, the share of the Asossa zone was 36,829 hectares (Tsegaye 2013). Likewise, in particular, in the Asossa zone, where the Berta people mainly dominate, since the early 2000s, the numbers of both foreign and domestic investors have been increasing.

[27] In the past, preparation of the land, such as clearing of the land, usually with the assistance of fire, should be completed between November and February, while seed planting is in May and June, which is also expected to mature in October. Informants witnessed that there is a changing trend in these activities that makes households uncertain about their livelihood activities.

One of the areas that investors are engaged in is the production of gold. As a result, in the Asossa zone, most of the places from which the Berta extracts gold are currently transferred to international companies. Informants indicated that the companies occupied and protected several places where gold was deposited, and the local people were prohibited from entering the protected areas.

In addition to gold production, the land is transferred to investors who extract marble from the Asossa zone. There is also land set aside for investors interested in investing in the production of marble. Currently (in 2018), there are more than 100 investors involved in the production of marble. In addition, twenty investors are involved in the production of incense. Above all, over 205 investors are currently licensed to engage in the production of a forest, particularly bamboo forest, and related items such as logging, office furniture, and other wood production[28]. Both informants and FGD participants stated that as a result of land transfer, the Berta lost a large amount of land and faced several problems with their livelihood sources.

In the first place, investors did not benefit local people as expected, nor did they transfer any kind of technology and knowledge that could change the livelihoods of the people. According to informants, particularly Berta youths are not benefited from employment by investors; there is no development and no environmental conservation. Rather, as informants claimed, most investors devastated their natural resources. For instance, "there are several investors engaged in producing charcoal from our indigenous tree species"; other investors have rented the lands to migrants that they have received for investment; while still others left the area after they have received a huge amount of money from banks on bail of the land.

The transfer of a huge amount of resources to investors led natives to compete on the remaining resources. This often leads to conflicts with investors and sometimes with government officials. An informant in Homosha *woreda*, stated that,

> We received no benefit from the investment… Rather, we remained prisoners of poverty, and the only income we now have is from mango trees that we have at home and in homesteads. Our mango production is currently affected by an epidemic disease that has erupted in the area in the past three years. We lost our trade routes, our lands, our forests, our

[28] Annual Report of Asossa Zone Finance Department (2018).

gold sites, and our cultures. What can we do? Except waiting for Allah until he supports us!

According to the elders, through time, Berta youths have either become laborers for others (investors and settlers) as an alternative means to their livelihood strategy. If they migrate to towns, particularly to Asossa town, where highland settlers dominate, they often engage in conflicts with the latter.

***iii) Relocation and Villagization Process*:** This is one of the major factors contributing to the change in the livelihood strategies of the Berta people. As a way of life, communities in the Beni-Shangul Gumuz Region live in a scattered environment. According to the 2007 census, at a regional level, the average population density was 14 people per square kilometer, while the range of population density was between three (in the Guba area) and 62 (in Asossa town). The Asossa zone has an average population density of 24 people per square kilometer (CSA 2010). According to an official interviewed in Asossa town, as a result, with the intention "to effectively distribute infrastructure, improve productivity, and so improve incomes and the livelihoods of the people, it was important to collect the scattered population into certain areas."

To bring the villagization project into effect, particularly since 2010, the regional and federal governments collaborated to work towards the project of what is known as *mändär mäsäbsäb*, meaning villagization, by collecting households into selected areas to create villages where they can get social and economic infrastructure. Accordingly, about 89,120 households were moved from their places of origin to 239 centers. Of the three administrative zones, the Asossa zone, where the Berta people live, is one of the project sites for villagization. According to the Asossa zone Economic Development Cooperation Office, in the zone, 35,354 households[29] (23,040 MHHs[30] and 12,314 FHHs[31]) were relocated to selected sites. Compared with others (i.e., in Metekel and Kamashi zones), this number of households is very large, and it is not difficult to imagine how large the number of people moved from their places of origin will be, most of whom are expected to be Berta. As informants explained, villagization brought Berta to interact with other ethnic groups, which paved the way for sharing their ways of life.

[29] In Beni-Shangul Gumuz a household holds an average of 5 members (CSA 2010). With this number 35,354 multiplied by 5 would be 176,770 people were moved.
[30] Male Headed Households
[31] Female Headed Households

With regard to the process of villagization, there are several problems that study participants explained. They are not happy with the program because they suffer from several challenges after they come to the new villages. For instance, according to an informant, due to the villagization, he and his brothers and sisters lost their economic base, which is traditional gold mining. Now, in order to reach the previous gold sites, they have to travel an average of eight hours. After they moved from their places of origin, they observed that alien people exploited their resources as they were far from the gold mining sites.

Informants claimed that most of them were not properly compensated for the land and forest they handed over, nor did they enjoy socioeconomic infrastructure in the newly settled areas as promised by the government. For instance, the roads built to connect towns are poor and without bridges, even if there are rivers, so most of them are not able to access markets in the towns. It can also be seen that the roads are not all-weather roads. This means that during the rainy season, which is the farming season, they are not able to get extension services such as fertilizers, seeds, and advice from extension workers. As a result, their productivity has never improved as intended in the villagization project.

Informants and FGD participants also claimed that there are water taps built in the new resettlement areas; however, most of them do not properly work. Moreover, most schools and health centers that were built for the new settlement areas did not get professionals who are able to provide services, so they are not open to delivering services. Informants also claimed that the plots of land provided were not as promised, which was 3–4 hectares. Now, most of the informants said that they are limited to no more than a hectare of land, meaning that they are forced to sustain on a very small plot of land compared with the past. In fact, in most cases, the lands allocated to them are not fertile enough and are unproductive.

In addition to the above, due to the villagization program, the Berta people were forced to abandon the shifting cultivation that they practiced as a means of their livelihood. According to the informants, in the past, they used to produce crops without any cost for fertilizer, but now, in addition to the cost that these farm inputs incur, they feel the products are not natural and comfortable for their stomachs. After the villagization, "we were forced to receive chemical fertilizer through debt that we were told to pay back, usually during the harvesting period." However, in most cases, they are not able to pay

back, mainly when production fails. It seems that the above situations led the people to problems of livelihood security.

iv) Resettlement Program: Legal Resettlements: This is another major factor contributing to the change in Berta's social and biophysical environments and that of their livelihood strategies. Officials often argue that the region is suitable for resettlement programs, thereby bringing several communities from different parts of the country, mainly from neighboring regions. As stated by officials in the Asossa zone Finance Department (2018), until the 2000s, more than 65 thousand settlers were brought to the zone. There are also informal settlers who come to the Asossa zone, especially from the neighboring regions, and are legalized after a while. Informants espoused that in the years stated above, in the Asossa zone, thousands of settlers came to the area, and now the non-indigenous population of the region is about 47% (European Union 2016).

From study participants also it is possible to infer that, of all groups, most informal settlers have managed to forge networks with individuals in the Asossa zone. Asossa *woreda* authorities identified that former migrants often bring their respective relatives and family members from the highland and host them temporarily. The informal settlers would be "illegal" only for a year or two, after which most of them become stable and get legal status and live as residents in any one of the *kebeles*, thus could have their land to cultivate.

Apart from migrants from and within the country, the Ethiopian government established refugee camps in the Asossa zone that hosted several refugees coming from different countries in eastern and southern Africa, mainly from the Republic of South Sudan and Sudan. In the zone currently, there are five refugee camps. These are Wamba in Bambasi district, Tsore, and Sherkole in Homosah district, Gureshabola and Tongo refugee camps in Mao-Komo special district. According to the European Union (2016), in these five camps, about 50,000 refugees were hosted. According to the report obtained from the Administration for Refugee and Returnee Affairs, this number increased to 59, 428 in 2017 and now (i.e., until January 2018), 63, 029 refugees[32] were hosted in the area.

Of the five refugee camps, three of them are in the Asossa zone. In the first place, it is not difficult to understand that for the refugees, there is a construction of houses that require natural resources such as land, wood, and

[32] Gureshambola-4095; Sherkole- 11,828; Wamba- 17,279; Tongo- 12,706; and Tsore- 14, 123

grass. To cook their food, the refugees need fuelwood, which they get from the local forest. From observation of the refugee camps, it was possible to understand that there are also refugees who have started to cultivate cereal crops, thus taking over land by clearing the forest.

Moreover, several refugees have come out of their compounds and have begun some kind of business from the natural resources, such as producing charcoal from the indigenous trees, collecting honey, and selling bamboo. An older informant who lives adjacent to Tsore refugee camp explained that "in our surroundings, we notice that our forest is slowly going away; we also notice that big trees we previously knew are disappearing." With the remaining trees, refugees have started hanging honey hives. In this case, too, the Berta people have begun to compete with the refugees when they see that the refugees are very skillful at producing charcoal and collecting honey from the indigenous tree species adjacent to the refugee camps. According to study participants, officials were already notified about the issue, though they did not respond.

In addition to the refugees, Berta informants stated that from neighboring regions, several migrants are coming to their areas mainly to look for land for agriculture. As a result, as they have started interaction with other ethnic groups, particularly from the highlanders of Amhara and Oromo, some of them started farming with oxen and have started intensive cultivation, which requires clearing of forest lands. An informant stressed, "we started to compete for land and forests or trees."

Whatever the case, for formal or informal settlers, there should be an impact assessment on these changing factors. Despite this fact, it is not that difficult to envisage the impacts that the settlement programs could have on the environment and the natives' livelihood strategies in general. The problem is that neither long-term nor short-term socio-environmental impact assessments nor a proper survey of population increment is done. Moreover, not only is the number of migrants to the area unknown but also how they control the land and the natural resources are not managed by officials.

It can be understood that compared with the Berta people, migrants have completely different ways of interacting with the environment to obtain their livelihoods. In many instances, migrants cut down trees to construct houses and fences; and they clear forests to cultivate the land. They also expand their cultivable land for agriculture and use the forest as the only energy source. All these contributed not only to the change in the biophysical environment but also to the change in the natives' socioeconomic situations.

v) Deforestation and Decline in Indigenous Tree Species: Scholars explain the amount of forest cover and the level of deforestation in Beni-Shangul Gumuz in different ways. On the other hand, officials from the region stated that previously, more than 60% of the region was covered in forest. Of these, lowland and highland bamboo, rubber trees, incense, and gum trees take the major share. For instance, Abebe *et al.* (2009) indicated that in the Beni-Shangul Gumuz region, gum trees cover an estimated area of 100,000 hectares while bamboo trees cover an estimated area of more than 500,000 hectares. With approximately 102,000 hectares of land, the Asossa zone has the most coverage of this sum. Informants stated that for their livelihood strategies, the Berta mainly depend on the forest they protected for several generations. However, with time, these forest lands are declining.

There are several reasons for the problem that study participants explained. Among these are population increase, resource-based competitions among different groups, a change in the attitude of the people towards their natural environment and the forest in particular, and a lack of alternative livelihood sources. This shows that the livelihood strategies of the Berta people are at risk, which leads them to mismanage their environmental resources and violate their customary rules, which exacerbates livelihood insecurity.

An informant espoused that "historically, and even today, we are losing our forest. In the past, we did not cut indigenous tree species that we used to keep our environment healthy. Instead, we use bamboo trees for construction, household furniture, tools, fuel, forage, food, income sources, etc. Today, we can see indigenous tree species being abandoned.

To overcome the problem of deforestation, since very recently, as a project, the regional and zonal governments have planned to establish parks by protecting some forest areas from human interventions. That is, establishing parks is one of the projects related to the conservation of forest on about 326 plots of forest land. The intended park is being protected, and residents cannot enter the selected forest lands. As officials and experts pointed out, when the Berta people were told about the project and ordered to leave the forest land, they strongly opposed the plan because they have used the forest lands for generations, and it has been a major source of their livelihoods. It seems that this plan does not incorporate issues related to the livelihood strategies of the Berta and their future lives when they leave the area. Without providing clear alternative livelihood sources to the people, it is hardly possible to sustainably implement the planned project.

Participatory Forest Management (PFM), locally called *asatafi dän tibäqa*, is another planned project that the regional government in general and the Asossa zone, in particular, are trying to implement. As officials stated, this project aims to manage and conserve forest lands and resources through community participation and enable them to share the benefits as a result. To implement the PFM, each rural *kebele* is expected to preserve 5-10 hectares of land and, for a certain period, no person is allowed entry into the protected forest land, so that several communities are moved from the forest area where they previously lived. In this regard, the villagization program has been facilitating the implementation of this plan. Here, it is important to note that with this project, the total area to be protected will be huge. However, most of the lands protected for this purpose were devoted to eucalyptus trees, which are not useful to the health of the environment.

Generally speaking, it is important to note that the lands are taken by investors; migrants, refugees, and government (protected for a park, for PFM), are several hectares that directly affect the livelihood strategies of Berta people. Therefore, Berta's livelihood sources are threatened by the above factors that are leading them to adapt to other forms of livelihoods, which previously were not part of their livelihood strategies.

8. Emerging Livelihood Strategies

As can be noted above, the livelihood strategies of the Berta are adversely affected. Berta traders are abandoning the trade route between the Sudan and Beni-Shangul Gumz Region. Only very few of them who are relatively better-off are continued to engage in the trade. These merchants complain that they pay tax for the government. However, they suspect that the tax they are paying is not for government revenue, but individuals on the border may take it for personal use. The Berta people are also downplaying their past livelihood activities, which is shifting cultivation. This is because they feel that the natural assets (land and forest) that they used to be proud of are no more their resources. The natural resources are endangered by newcomers (investors, migrants, refugees, and the government). Furthermore, traditional gold mining is also declined as a source of livelihood strategies of the Berta as it is taken away by others, who recently come to the area and exploit with detecting machine.

By observing and experiencing the threats on their livelihoods, the Berta are trying to adjust[33] themselves to survive. As alternative livelihood strategies,

[33] Adjustment is to show that the Berta are enforced to adapt to new livelihood sources, even though they do not want to engage in.

there are emerging activities that the people try to engage in. These are migration to towns (mainly the youth), being laborers (for migrants and investors), selling of charcoal and fuelwood, fruit production, renting land, and social asset (such as *Kalwa*).

Informants and participants in FGD mentioned that as an alternative livelihood activity, particularly, a large number of Berta youth are migrating to the nearby towns, mainly to Asossa town, to search for daily jobs. However, because Asossa is dominated by migrants from neighboring regions, they are often unsuccessful in finding jobs. Moreover, Berta informants who migrated to Asossa town explained that, although working as a laborer is not their way of life, they are forced to live in this situation. Most of the informants believe that they do not have the skills to work as laborers, and they are not interested in waiting for a month or so to get their salaries, but they cannot escape from this way of life.

Several Berta work as laborers for investors and migrants who rent out their farmland as a source of livelihood. According to informants, the majority of investors who received investment land for crop production did not properly use machinery to produce crops in the area; rather, they tended to use human labor, either as migrants (first choice) or able-bodied Berta men, to work on their farms. In most cases, the Berta people are disgusted by this situation because they are hired by aliens on their land. Some Berta people work as laborers for gold mining and marble production companies. Informants complain that this is a drastically different way of life than Berta was used to. Highlanders who live on Berta land may also hire the Berta after renting out their land to either investors or the Berta themselves.

To overcome their livelihood problems, most of the Berta have begun to engage in the production of charcoal for the market and the selling of fuelwood, which in turn leads them to devastate their remaining forest. However, as an elder indicated, according to the Berta culture, "it is forbidden to devastate the indigenous forest, but we learn from others, and we are forced to do so. It is a question of survival."

For some of them, especially the elderly and women, mango production is another remaining income source. There are other fruits that the Berta produces; these are bananas, avocados, and lemons. These fruits are being increasingly produced for the local market, and they are sold to customers passing through the area to visit the Renaissance dam in Guba. However, in the past few years, the quality of mango production that they trust has been reduced in both quality and quantity. This is because mango disease has

prevailed in the area, especially in the past five years. They also complain that they did not get a solution to the problem. Informants stated that in the past, they used to produce mango each year and even twice a year. Now, however, the production rate has decreased to once every two years or once every three years. This endangered the livelihood of the study people.

Another alternative source of livelihood that the Berta people use is known as *Kalwa*. This is an institution of social capital that the Berta people try to maintain their socio-economic ties with, particularly important to helping the poor. In *Kalwa*, they often get together for discussion if there are problems that need to be solved. Among others, for instance, is when a household or a person encounters a financial or physical asset. Berta elders would discuss the issue and solve it by supporting a household both in-kind and with cash that the household head is not expected to return. The Berta managed to maintain their shared social assets. However, the change in the biophysical environment is discouraging the social assets that they share.

9. Concluding Remarks

Until the late 1890s, the Berta people followed communal land use and managed all the resources on the land: the forest, wild crops, and animals, honey collection, and practiced shifting cultivation. The change appears to have begun in the post-1890s, when they were incorporated into Ethiopia's central government, followed by the migration of highlanders to the area with their livelihood strategies. This has particularly been exacerbated in the past few decades, more practically, since the early 2000s, with the establishment of Beni-Shangul Gumuz as an administrative region. Through time, the livelihood strategies of the Berta have come under pressure and have undergone considerable changes. The changes were again exacerbated when the area was identified as a settlement site with refugee camps and hosted thousands of people who came to the area with different livelihood strategies. The settlers and migrants also increased the population in the area. Expansion of investment in the region and implementation of development projects and natural calamities have also forced changes in the livelihood strategies of the Berta. Compared with Berta, the migrants managed most of the resources, as they had already controlled most of the livelihood assets: social, natural, and political. They often expanded the cultivable land they owned, either by encroaching on "free" lands or by renting land from the natives to produce cash crops. Migrants are often eager to cultivate sesame, which is becoming an important means of boosting one’s livelihoods. Based on their livelihood characteristics, situations, and indicators, and based on the type of emerging livelihood activities each group is trying to perform, it is not difficult to

understand the Berta people's vulnerability level to livelihood insecurity. In this case, Berta people are the most vulnerable group in the event of shocks because most of them do not have any saving property in the form of physical assets. Thus, at a time of risk, migrants are a relatively stronger group and may overcome the problems and stay for a relatively longer time than the Berta.

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