



Hungarian University of Agriculture and Life Sciences

**DEVELOPMENT PROSPECTS AND CHALLENGES FOR IMPROVED
LIVELIHOOD IN AFAR NATIONAL REGIONAL STATE, ETHIOPIA**

The Thesis of the PhD dissertation

DOI: 10.54598/001280

AHMED ABDULETIF ABDULKADR

Gödöllő, Hungary

2021

Hungarian University of Agriculture and Life Sciences

Name of Doctoral School: Doctoral School of Economic and Regional Sciences

Discipline: Regional Sciences

Head of the Doctoral School: Prof. Dr. H.c. Popp, József, DSc.
Corresponding member of the Hungarian Academy of Sciences MATE,
Institute of Economic Sciences

Supervisors: Dr. György Iván Neszmélyi, PhD
Budapest Business School – University of Applied Sciences

.....
Approval of Head of Doctoral School

.....
Approval of Supervisor

CONTENTS

1. INTRODUCTION.....	1
1.1. Importance of the study	1
1.2. Statement of the Problem	2
2. OBJECTIVES OF THE RESEARCH.....	6
3. MATERIALS AND METHODS	7
3.1. Description of Study Area	7
3.2 Sampling, Sample Size and Source of Data.....	7
3.3. Research Design and Data Analysis	8
4. RESULTS AND DISCUSSIONS	9
4.1. Socio-demographic characteristics of respondents	9
4.2. Economic Development of ANRS.....	10
4.3. Prospects and Challenges of Development.....	12
4.4. Social Services Provision in Afar Region.....	15
4.4.1. Education.....	16
4.4.2. Human and Animal Health.....	20
4.4.4. Water	23
4.4.5. All-Weather Road and Transport system	23
4.4.6. Bank and Credit Services	24
4.4.7. Access to ICT and Electricity.....	25
4.5. Development Programs Implemented in ANRS.....	27
4.5.1. Resettlement/ Villagization Program	27
4.5.2. Safety Net program	29
4.6. Governance and Economic Development.....	30
5. CONCLUSIONS AND RECOMMENDATIONS	32
6. NEW SCIENTIFIC RESULTS	37
6.1. Utilization of the results.....	38
7. BIBLIOGRAPHY	39
8. PUBLICATIONS	43

Lists of Abbreviations

ANRS	Afar National Regional State
GDP	Gross Domestic Product
GNP	Gross National Product
HDI	Human Development Index
UNESCO	United Nations Educational, Scientific and Cultural Organization
GER	Gross Enrolment Rate
NER	Net Enrolment Rate
BoFED	Bureau of Finance and Economic Development
CSA	Central Statistics Agency
ICT	Information and Communication Technology

1. INTRODUCTION

1.1.Importance of the study

Economic development has long been considered as an important process in asserting improved life standard and prosperity. The main goal of regional/local economic development is to improve the quality of life as a result of improved economy by building the economic capacity of a region. Nowadays countries have focused on improving quality of life and standard of living and it has become a global issue (UN-HABITAT, 2013) although it is difficult to achieve it (COWEN, 2016).

According to OECD (2014), regional development incorporates all aspects of development such as social, cultural, economic and environmental since taking GDP alone as a measure of regional development is criticized by several researchers (MICHALEK and ZARNEKOW, 2012) for not incorporating economic, social and environmental aspects of development, and for not explaining the income distribution, satisfaction of basic needs and social status of the community (VANDEN and ANTAL, 2014). Regional economic development requires basic infrastructures such as hard infrastructure (roads, rail, water, sewerage and drainage systems, and energy and telecommunications networks) and soft infrastructures such as social, cultural and community facilities and capacity. The availability and quality of both types of infrastructures are the cornerstones of regional economic development.

Afar National regional State (ANRS), one of the 10 regional states in Ethiopia, has been given the opportunity of self-ruling by the federal constitution since the establishment of Regions (kililoch in Ethiopian national language) in 1995. Since then, several reforms have been made with the emphasis of stimulating economic growth to reduce the poverty level and ensure equitable growth across the country without any types of discrimination which resulted in policy development and consequently reduced the level of the poverty. Yet, in many aspects of development, the region is one of least developed administrative regions in the country.

The agriculture sector, especially animal husbandry is the economic basis of the region's pastoralists. This is explained by the proportion of people in the region engaged in the agricultural activity, the fact that animals and animal products are the main sources of food, and sources of income of most of the population. Pastoralism, as a system has long been considered as the mainstay of the Afar society in such a way that majority of the community has relied on it.

Pastoralism has a significant contribution to countries national GDP (10%-44%) and over 1.3 billion people are estimated benefiting from livestock value chain (WISP 2016). According to Coalition of European Lobbies on Eastern African Pastoralism (CELEP) report (CELEP, 2017), 20 % of the national export and 90% of live animal export of the Ethiopian trade, and 80% of annual milk supply to the Ethiopian community resulted from the pastoralists.

These figures indicate that while there are suitable conditions in place to empower the region to forge its own contextualized developmental scheme, the challenges in the attempts to realize regional development plans are immense. Therefore, exploring the prospects and challenges of development in the region in different dimensions is vital for achieving targeted development objectives and goals. Thus, this dissertation is aimed at examining the prospects and challenges of development in the region.

1.2.Statement of the Problem

Improving living standard and reducing poverty is the priority of any government, therefore requires assuring sustainable development. The region is rich with untapped natural resources such as nationally recognised parks, minerals (such as potash, gold, salt, etc.), energy, and tourism destinations which can help boost the local and regional economic development and improve quality of life.

Yet the region is one of the least developed. For example, 74% of the afar people are under lowest wealth quintiles compared to Addis Ababa or Harari with 0% and 9% of their population residing to the lowest quintile respectively (UNICEF, 2019). This figure is more supported by earlier demographic report of the Ethiopian government indicating Afar region is the poorest with the same figure(CSA, 2016).

Enrolment rate in the region at pre-primary education is only 13% and it is very low compared to the national 42.5% (UNICEF, 2019). In addition, only 48% of primary school-aged children are enrolled in the region. This figure is much lower compared to Somali region which is also a pastoral region (73%) (UNICEF, 2019). Evidence from statistical agency shows that the highest (about 69%) of Afar women are not totally educated with lowest median number of years of education for women is 0.0%.

The health services in afar regions is also rated as inadequate and poorly equipped, scarce, difficult to access, and does not fit the livelihood system of the pastoral community (NEJIMU and HUSSEIN, 2013). Moreover, Nejumu and Hussein also revealed that teen motherhood is highest in Afar (23%) compared to other regions in Ethiopia. Child mortality (under five) is the

highest in Afar region with 125 deaths. In addition to this, institutional delivery is lowest in Afar region accounting for 15% and skilled workers assisted are 16% in Afar which is the lowest in the country. Service delivery in pastoral area is also very low indicating marginalization of the pastoralist communities by governments and policy makers (AHMED, 2011).

Though pastoralism plays a prominent role in the livelihood of inhabitants, their contribution to the economy has been ignored by national policies and focused at modernizing them by introducing to the agriculture which is assumed to be the best way to ensure development and avoid or minimize poverty. Besides development in pastoral area of Ethiopia (for example the Afar pastoralists) is considered as backward system and marginalized for very long period (JAMES et al., 2014) due to the rooted misconception that pastoralism is not economically feasible and environmentally unfriendly way of livelihood which led government authorities to inspire pastoralists to settle. For example, in Ethiopia, the contribution of livestock production to the agriculture was 47% in 2009 though this figure was underestimated by the nation, and this underestimation was resulted from unofficial exports around the inter boarder trades (IGAD, 2013).

Despite the efforts made in the last two decades, the region's economic development and living standards of the community is low. Several research works can be taken as evidence where the people of Afar are still suffering from food security, undernourishment, lack of water and grazing areas. According to research done by SIRAJEA and BEKELEB, (2011) in some districts of the region indicates the percentage of population living below poverty line is as high as 64.8%. Recent study by TEKA et al., (2019) found that the level of poverty reduction in ANRS is slow compared to other regions since 1995/96 where official poverty data compilation begun. Moreover, the progress regarding reduction poverty level in Afar region since 1995/96 is much slower compared to regions who had higher poverty level by that time (TEKA et al., 2019), indicating the poverty status of ANRS is higher than the national average (DEREJE and OKOYO, 2015).

The regional development strategies and policies implemented so far such as safety Net, aids, and permanent resettlement programs didn't bring much change in the livelihood of the pastoral and agro-pastoral community. Even though the region is rich with untapped natural resources such as tourism destinations, biodiversity, minerals, energy, and cultural heritages which can help boost the local and regional economic development and hence can improve the living standard of the community (CHINOGWENYA and HOBSON, 2009), ANRS is still suffering from poverty and with poor social service provisions and infrastructural development.

It is well understood that every region has distinct characteristics which may enhance or hamper the development potential. Such distinct opportunities and challenges determine the status of the regions development by attracting investments to properly utilize the development potential of the region. It is therefore important to identify available development potentials and bottlenecks of development. This research therefore, mainly wants to answer the following research questions.

1. Different development programs and strategies are expected to be implemented by the government in order to assure sustainable development. One of the research questions to be answered by this research will be “what are the economic development activities have been initiated and implemented since 1991”?
2. ANRS is categorized among the least developed regions in Ethiopia. Despite the establishment of self-ruling political governance in the country, the overall evaluation of indicates the low development progress in the region. Therefore, the researcher would like to answer the question “why is the region still under-developed”?
3. Wealth levels of families are expected to affect the tendency of sending children to school. Hence, this research wants to answer the question “how the family wealth levels affect child education”?
4. The majority of Afar people are pastoralists who have been dependent on livestock production. Therefore, in order to evaluate the efficiency of the current pastoral system, the researcher would like to answer the question “how the traditional pastoral system can improve the livelihood of pastoral community”?
5. The government of Ethiopia has been focused on resettling the mobile pastoral community as a long-term pastoral community development program. This research, therefore, would like to analyze why the permanent Resettlement of pastoral community is considered as necessary precondition to improve the livelihood of the community.
6. Undoubtedly every region in the country has different resources which can boost the development of their respective region. The issue that must be raised is how efficiently they have been used. Hence, this research would like to answer the question “how the region has utilized development potentials”?
7. This research will also try to look for available options for sustainable development in the region by answering the question of how the livelihood of the pastoral community be developed.

To Address these research question, the following hypotheses were tested.

Hypothesis One: Livelihood choice depends on several factors. This dissertation, is therefore, would like to test if the hypothesis that “there is no significant difference among male and females regarding preference of way of livelihood”.

Hypothesis Two: Livelihood choice depends on several factors. This dissertation, is therefore, would like to test if the hypothesis that “there is no significant difference among age groups regarding preference of way of livelihood?”

Hypothesis Three: Livelihood choice depends on several factors. This dissertation, is therefore, would like to test the hypothesis that “there is no significant difference among current livelihood system regarding preference of way of livelihood”.

Hypothesis Four: There is no significant difference among female and male communities regarding importance of education

Hypothesis Five: There is no significant difference among different wealth levels regarding importance of education

Hypothesis Six: There is no significant difference among different age groups of communities regarding importance of education.

Hypothesis Seven: There is no significant difference among different livelihood system of communities regarding importance of education.

2. OBJECTIVES OF THE RESEARCH

The main objective of this research is to identify the available development potentials and the main bottlenecks linked to it so that the regional economic development is improved and livelihood of the community be enhanced. Moreover, the research specifically aims at achieving the following objectives.

1. Understanding the status of demographic factors such as population growth, fertility rates and life expectancy helps develop good policies and devise appropriate strategies. This dissertation, therefore will analyze demographic and socio-economic status of the region
2. There are different factors which halt the economic development of a region. Identifying such factors will enable decision makers to prioritize on tackling the challenges. One of the objectives of this dissertation, therefore is to analyze the determinant factors of development of the region
3. It's difficult to prepare a good plan unless the available potentials are identifies. This dissertation also aims at exploring the development potentials in the region to make sure the available key development resources are well utilized.
4. Despite there are different ways of livelihood, the majority of the afar communities have been practicing pastoralism as their main livelihood base. One of the main objective of this dissertation, hence, is to see if pastoral system is the only option for livelihood
5. The government has been implementing different livelihood improvement programs in the region. Resettlement/villgization program was the main project the government has planned as a long term development program in pastoral areas including Afar. Analyzing its status would help decision makers to either continue with it or rethink some other sustainable development program other than resettlement. Another objective of this dissertation is to analyze the status of pastoral community resettlement programs in the region.
6. Policies and strategies play a significant role in improving the living standard of a community by utilizing available development potentials. This dissertation, therefore, aims at analyzing the development policies and strategies implemented in the region.

3. MATERIALS AND METHODS

3.1. Description of Study Area

ANRS is one of the nine Federal states of Ethiopia with about 72,053 sq. km., area and a population of around 1.9 million (estimated in 2018). Compared with other regions, it is a vast and sparsely populated area, with 22.2 persons per square kilometre.

The ANRS is located between 39°34' and 42°28' East (longitude) and 8°49' and 14°30' North (latitude). It is characterized by high temperature (25 °C–48 °C) and flat landscape with an altitude range of 116m below and 1600m above sea level. This region comprises five administrative zones and 35 woreda including recently added three woredas where woreda is the third hierarchy of government authority after region and zone level administrations. It borders the countries of Eritrea in the north-east and Djibouti in the east, as well as Ethiopia's Somali regional state in the south-east, Tigray, Oromia and Amhara in the north-west and in the south-west respectively.

About 90% of the population bases their livelihoods on livestock and livestock production, with limited irrigated agriculture along the river basins and in low-lying areas. For the Afar, the basic livestock units are cattle, camels, goats, sheep, and donkeys. In general, the Afar communities participate in livestock production not only for economic reasons but also because of its social and cultural significance, and its relationships to social values and the kinship systems.

3.2 Sampling, Sample Size and Source of Data

The study has two different study clusters. One group of clusters will be clusters of pastoral community with mobile livelihood and the other group of clusters will be semi-pastoral community. In both resettlement centres were included to study resettlement program related questions. Hence, using Yemane's sample size determination formula, 400 samples were taken using multistage cluster sampling. At the first stage, the total sample size was proportionally allotted to every zone based on the population projection of CSA for ANRS for the year 2018. In the second stage, three woredas from each of the five zones were randomly selected where the sample size of every zone was proportionally distributed to the selected woredas. Finally, since the population of each district was not available both at national and regional level, the sample size allotted to each woreda were equally distributed to three districts from each woreda which were selected using simple random sampling.

This survey tried to determine the availability and quality of social services in ANRS. Moreover, development potentials of the region were explored and the factors determining the regional

development were also analyzed. To do so, both primary and secondary source of information was used to conduct the research. Primary data was mainly collected from pastoral and agro-pastoral communities in ANRS using structured questionnaire, in-depth interview, focus group discussions and personal observations with the help of 7 paid enumerators who are able to speak and write in three languages namely English, Amharic (Federal government working language) and ‘Afar af’ the language of the local communities where this study is conducted. Secondary sources data were collected from different national and regional government offices such as Central Statistical Agency, National Plan Commission of Ethiopia, National Bank of Ethiopia, and ANRS regional and woreda level offices. Moreover, reports and documents were also used.

3.3. Research Design and Data Analysis

Exploratory, descriptive, and explanatory research designs are used in this study where frequency and percentages tables, charts, and graphs were used to analyze the data. The focus group discussions were done in a way that all categories of the community with different age groups and gender can be listened. Hence, there have been three group discussions in every selected 15 districts in the region. The groups were classified in to two broad categories based on their age. Those under 45 years old as one category and those above 45 years old in another category were grouped, where both male female sex household heads were systematically included. After having the focus group discussion with both of the groups, the research team forms a third focus group discussion with relatively high number of participants to discuss on the differences observed. All the focus group discussions were done similarly in order to reach into consensus on the issues raised so that appropriate conclusions can be drawn. The interviews were also done on two bases: on random bases and with key informants. Besides to this, some regional bureau heads and experts from woreda and regional offices were also included in order the research to be inclusive. Hence, 51 interviews were done.

4. RESULTS AND DISCUSSIONS

4.1. Socio-demographic characteristics of respondents

Albeit the survey was not intended to specifically address the socio-demographic characteristics of survey participants, for better understanding of the characteristics of survey participants the socio-demographic characteristics are presented below.

Accordingly, 175(43.75%) of survey participants of this study were female while the remaining 225(56.25%) were males. While the age of participants varies between 19 years (the youngest) and 75 years (the oldest), relatively the majority of the respondents were between age of 35 and 44 with 35.25% of the total participant. This study tried to include all active age groups who in real terms can understand current and past situation of the region. Accordingly, 11.25% of the participants were aged under 25 years, 81(20.25%) of them aged between 26 and 34, 35.25% of them were aged between 35 and 44; 21.25% were aged between 45 and 54 while the remaining 12% (48 participants) were 55 years and older allowing the researcher get wide spectrum of information about the regional development practices. The majority (91%) were married while the remaining 7.25%, 0.5% and 1.25% of respondents were single, divorced and widowed respectively where the majority (58.25%) of them have a family size of 6-10 followed by 24.5 of respondents having family size of 3 to 5 with 53 percent of the respondents practicing pastoralism as main livelihood system followed by semi pastoralists constituting 45.25%. The remaining percentages of respondents were daily labourers and private employees. Regarding educational attainment of respondents, the majority (about 84%) of the respondents were illiterate who totally cannot read and write while the remaining 16% were high school completed (2.5%), diploma holder (9.75), bachelor degree holders (1.75%) and 2% of the respondents were those with Masters degree.

Moreover, in this research, wealth status level for both pastoralists who solely depend on their livestock population and those communities who are engaged in both agricultural and livestock production was determined by interviewing and consulting the clan leader called Makaban. It is agreed classification at all part of the region. Hence, in the past, a person who has more than number of 1000 camel, more than 2000 cattle, uncounted number of goat and sheep, and hundreds of donkey were used to be called as wealthy, while those who have less than 5 camels, less than 20 cattle, less than 50 goats and sheep used to be called as poor community. Nowadays, a person who has 50 camels, 100 cattle, 300 sheep and goats grouped as rich while those who have the number of only 20-30 goats and sheep is levelled as poor. Those community members who are in between are levelled as moderately wealthy community. To determine the wealthy

level, the values (exchange) of a camel with cattle, cattle with sheep and goat has also been taken in to consideration due to the fact that there are people who have high number of cattle, but low in camel, sheep or goat and vice versa. Accordingly, one camel is equivalent to 2 cattle regardless of the sex; one cow is equivalent to 20 sheep or goats. On the other hand, while such classification in wealth also works for agro-pastoralists, those who produce and sell after consumption are categorized under rich while those who even couldn't feed themselves are categorized as poor. The wealth level of the survey respondents were obtained based on the above categorization. Accordingly, half of the survey participants (about 51%) were poor while 39% were medium and the remaining participants 11% were rich.

4.2. Economic Development of ANRS

The main focus of economic development is assuring sustainable and improved living standard of a community by reducing social and economic gaps. Economic development has long been measured by GDP. Regional GDP as measure of economic growth is defined as the sum of the values of all produce and services produced in a country/region in specific period. GDP is one way of measuring a size of economy of countries. The higher the GDP, the higher the income of the people is, and hence higher standards of living. People are likely to earn and spend high and hence people will feel better off. Based of GDP estimates, a region can determine how the economy of the region is performing and the level utilization of resources so as to prioritize and restructure the sectors lagging behind the economic sectors and reformulate policies and strategies. Hence, the GDP data obtained from BoFED of ANRS presented below shows that both real and nominal GDP of the region has been increasing on average of 7.965% and 22.9% respectively.

Agriculture, Service and Industry are the main economic structures of ANRS where agriculture is the mainstay in the region which is a source of livelihood for the majority of the people. Accordingly, agriculture takes the lion share of the real GDP contributing on, average, 56.2%, while service and industry sectors follows with an average contribution of 26.4% and 17.7% respectively. The growth rates of service sector is the highest followed by industry and agriculture indicating slow growth rate of agriculture. Although the improvement of sectors other than the labour-intensive sector is a good indication of inclusiveness of development sectors and utilization of other development potential, relatively slow growth rate of agriculture sector will significantly affect the livelihood of the community. But, with real GDP growth rate of 7.695% and average population growth rate of 2.5, the region's overall performance can be levelled as good.

The USD to Ethiopian birr exchange rate in 2017/18, on average, was 35.03 birr. Accordingly, the USD equivalent average per capita income of Ethiopia for from 2014/15 to 2017/18 was \$267.2. Although globally Ethiopia is levelled among the low-income countries the region's per capita income of \$267.2 is very low compared to the nation per capita of \$862 in 2016/17. Despite the progress seen, this figure indicates that the region is one of the least developed in the country.

Although GDP is an important measure, it is not necessarily the only measure as it does not encapsulate the key features of human wellbeing. Therefore, it requires additional measures in addition to GDP which allows measuring the other aspects of improved livelihood (HORSLEY et al., 2015). The main reason that countries, regions, local areas to develop is to improve the overall wellbeing of their population. Hence several development concepts have been developed based with the focus of factors that determine the wellbeing the community.

The inclusion of different aspects of life such as literacy, health and living standard measured by GNP in HDI attracted several researchers (KOVACEVIC, 2011; SAGAR and NAJAM, 1998). Although HDI attracted several development scholars, yetis have limitations in addressing all aspects of economic, social, political dimensions. To avoid such gaps, most recently, eighteen regional development indicators which are categorized into four broad groups have been identified by MEYER et al. (2016) after reviewing several related research findings and testing them on South African context. These four categories and indicators are demographics (Population Growth, Household Size, Population Density, Level of Urbanization); social development (HDI, Gini Coefficient, Poverty Levels, Literacy levels, Basic Infrastructure Index, Informal Housing, and Crime Index); labour (Economic Active Population, Unemployment); and economics (GDP Growth rate, Trade surplus, Average Household Income, Tress Index). Due to lack of data in the region, only demographic, labour and economic aspects of the indices developed by MEYER et al., (2016) are used to in this research.

Based on the HDI calculated, the region is HDI is found to be 0.467 which is categorized under the score of 1 which is an indication of low level of human development which in turn will have a significant impact on the overall development of the region. Moreover, the poverty level of the region is levelled at index score 3 indicating moderate potential while index score for literacy is 0 which shows very low level. In general, the potential of the region regarding demographic sub dimension is low which needs much effort to assure sustainable development. The main challenge of prospect of the region's development regarding the demographic characteristics is the decrement of fertility rates and the high level of infant and under-five years' old mortality

rates that have been seen in the past and in the projected years. Although the life expectancy has been increasing, the infant and under-five year mortality rates has been decreasing and are expected to decrease over the years, the level of mortality rates are still expected to negatively affect the regional development.

The size of economically active population and level of unemployment rate have a significant impact on a country's economic development. The unemployment rate and percentage of economically active population of ANRS is 23.6% and 66% respectively. Hence, the availability of economically active population is too high which is a potential for development. In contrary, the unemployment rate in the region is high with index score of 1. Taking both indicators into consideration, albeit there is high proportion of economically active population, yet the high unemployment rate s an indication of low level of development in the region. More specifically, the unemployment rate for urban areas of the region is 20.3 which is levelled as index 1 which illustrates low level while the proportion of economically active population is more than 50% falling under the index showing high labour development level in urban areas (CSA, 2020). Due to lack of data, GDP growth rate has been used for analysis. Hence, the average GDP growth rate for 2017/18 was 7.965 which fall under index score of 5 indicating high economic growth in the region.

By analysing the three dimensions, it can be concluded that the regional development status is low since the majority of indicators show low level of development. In addition to this, with such indicators in mind, the respondents were asked to rate the regional development status as low, moderate and high based on the literacy level, life expectancy, food security status, their income, infrastructure and social provisions they access. Hence, as results of the survey shows the majority (89.3%) of respondents' development status of the region rated as low while the remaining 10.8% rated as moderate.

4.3. Prospects and Challenges of Development

ANRS have higher active population age category (15-49). The overall growth of active population age over the years is higher than those exiting the working force for pension. The growth rate of population aged 15 years and below is higher than the growth rate of people aged 65 and more indicating the region's good prospect for development. But, there exists high unemployment rate especially in urban areas where majority of the urban unemployed are literate.

Economically, the GDP of the region is high with an average of 7.965% GDP growths for the last 5 years. Moreover, ANRS is the cradle of mankind and it has various natural, anthropological, historical and cultural assets, which make it a region full of multi choice tourist sites. It is a collection of flora and fauna and ancient stone-made-hand-tools show prehistoric and Cultural evolution of man at his earliest. Afar, apart from the source of Lucy recognized World Heritage Sites registered by UNESCO, has diverse actual and potential tourist attractions which can catch the attention of many national and foreign tourists. But, this sector is underutilized in ANRS due to lack of all-weather roads, poor transport system, lack of accommodation at tourist destination areas, lack of promotion and local tour guides. Focusing on the Ethiopian tourism industry similar challenges such as lack of infrastructure such as road, power, consistency utilities like water has been mentioned by GEZACHEW(2013), while TESHALE (2010), concluded political uncertainty as one of the key problems. Furthermore, the sector is affected by its lack of good promotion with 34% of respondents singling it out. NABIL (2003) signified the research result by identifying lack of knowledge and awareness, and fragile promotion system as bottlenecks of the tourism sector. Accommodation and transportation access are also key challenges of the sector. There are not comfortable accommodations in the tourist destination areas where their quality is low. Those tourist standard hotels, motels and lodges are only found in the capital city and its surroundings. The transportation access is also a key issue for the domestic visitors who would like to use public transport which is not available at all. There are no local tour guides in the region. The level of promotion done is very poor. Lack of good governance, weak private-public partnership and absence of successful private sector are additional challenges of the tourism sector.

In addition to this, the gold, salt, and potash mining are among the underutilized mining potentials in the region. Such resources are mostly found in the rift valley and in the Afar depression of ANRS. The estimated 700MWe geothermal energy potential of the country, the about 530MWe (75.7%) is found in the ANRS. Utilization of this geothermal energy potential will speed up the east African countries' development in general, and Ethiopia and ANRS in particular. The region is also rich with salts, potash, and manganese (TADESSE et al. 2003) and gold mineralization (GEBRESILASSIE, 2009), occurrence of hydrocarbon (VINAY, 2010; KACEWICZ et al. 2009).

The region's livestock asset is also one of the sectors which contribute to regional and national GDP. Although the pastoral system is economically important and environmentally friendly, the deep-rooted misconception about pastoralism and the multi-dimensional poverty are the characteristics of the livelihood of Ethiopian pastoral community (DEREJE and OKOYO, 2015;

FIREHIWOT and YONAS, 2015; RETTBERG, 2010). Lately, the economic values of pastoral system have started to be recognized (CHINO GWENYA and HOBSON, 2009). Despite this, a prominent role in the livelihood of inhabitants, their contribution to the economy has been ignored by national policies and focused at modernizing them by introducing to the agriculture which is assumed to be the best way to ensure development and avoid or minimize poverty. Yet, the productivity of this sector in ANRS is very low.

The majority of rural afar communities are engaged in livestock production while a small percentage of the regional population are partially involved in both temporary and permanent crop productions. The main problems in the semi pastoralist are poor access to market and market information. The issue of market access is more relevant for a region like ANRS where the majority of the population resides in rural areas engaged in mostly in livestock production for both the domestic and international market. There are no cooperatives to which the producers can directly sell. Besides, majority of pastoralists and semi pastoralists participated in this survey replied that they don't have access to market and information about current price of products. According to focus group discussions and interviews held with both pastoralists and semi pastoralists, access to and poor quality of roads, distance to main market areas and poor access to transportation are among the main factors of poor access to market. They only get information about the market from colleagues who visited any market through Daagu traditional communication system. Besides, the government doesn't provide modern technologies. Sometimes, the temporary crop productions such as tomatoes are sold for individuals from neighbouring regions with cheap price. These traders sold it back to the local community with high price as has come from long distance.

The percentage of the younger age group is higher compared to the aging population both in the past and in the projected years. The economically active age category has also seen as advantage for the regional demography. The size of the afar younger population (less than 15 years) is 558,100; 677, 830 and 683,906 for 2007 (base year), for the projected year of 2022 and 2027 respectively while the aging population (65 years old and more) is only 1.54% for the base year, 2.9% for 2022 and, 3.66% for 2027. Accordingly, the incoming population is almost double of the aging population for the projected years.

The main challenge of prospect of the region's development regarding the demographic characteristics is the decrement of fertility rates and the high level of infant and under-five years' old mortality rates that have been seen in the past and in the projected years. As it is presented in table 1, although the life expectance has been increasing, the infant and under-five year mortality

rates has been decreasing and are expected to decrease over the years, the level of mortality rates are still expected to negatively affect the regional development.

Table 1: Fertility rate, Mortality rate and Life expectancy of ANRS with projection

	2008-2012	2013-2017	2018-2022	2023-2027	2028-2032
Fertility Rate	4.11	3.57	3.13	2.79	2.55
IMR	61.8	53.3	45.6	39.5	34.3
U5MR	95.2	80.1	66.5	55.9	46.9
Life expectancy	61.8	64.3	66.7	68.7	70.6

Source: Own calculation, CSA data

Besides identifying the economic activity rate, it is very important to have detailed information on the level unemployment in order to plan and create jobs. Unemployment rate give us the size and quality of human capital which is unutilized due to several reasons.

According to CSA (2020), there is huge unutilized labour potential in the urban areas of the region. Youth unemployment rate in Afar region’s urban areas is high with 29.9% of the youth (15-29) are not employed. This age group is the most effective age group that should properly be utilized. Yet, the region is not properly utilizing them. Moreover, the report also shows the unemployment rate is higher at all age categories for females compared to their male counterpart. This is also an indication that gender disparity even among the literate is higher. According to interviews held both sexes, traditional belief of the families has affected them not to look for jobs. The way they were raised forced them to marry and have children. Home responsibility is totally left for the women.

4.4. Social Services Provision in Afar Region

Increase in life expectancy, and decreasing mortality rate will have a positive impact on regional economic development. The regional GDP per capita will increase with the increasing life expectancy and decreasing mortality rate which in turn will assure sustainable economic development in the region and assure improved living standard of the community. It is therefore important for the regional government to focus on the main contributing factors on improved life expectancy and decreased mortality rates social service provisions such as health and education sectors in order to register higher sustainable economic development hence to reduce poverty.

The availability and accessibility of basic infrastructure and social services such as water, road, education and health are key factors of development and improved living standard of a community. Socioeconomic development usually measured by one/or composition of education, occupation, health, life standard of a nation and income. As the socioeconomic status affects the

health, and other life related issues, a great attention has been given to the improvement of cultural, economic and social aspects (PIKE et al., 2007).

4.4.1. Education

Regarding social services, access to education has been improving where there are school buildings in almost all areas of the region. Moreover, the expansion of ABE played an important role in trying to address the issue of access to education so as to meet the universal agreement of education for all.

Table 2 shows the access and quality of education in the selected study areas of ANRS. Accordingly, access to education is rated as good by majority (89.25%) of the respondents while 9.75 % and 1% of survey participants rated as moderate and worst respectively. This shows that the community have a better access to education.

Table 2: Access to and quality of education, ANRS

Social Service	Access			Quality
	worst	Moderate	Good	worst
Education	4(1%)	39(9.75%)	357(89.25%)	400(100%)

Source: Own survey result

But, although access to education has been improving, the gross and net enrolment rate in the region is very low where there are high dropouts. GER in first cycle of primary and secondary school is higher than GER for the second cycle at both schooling levels. This shows that, a significant number of students mostly stop going to school at grade 4 and those who continued stop at grade 10. Joining technical and vocational training and failure to pass the national examination are the main reasons for those who stop at grade 10.

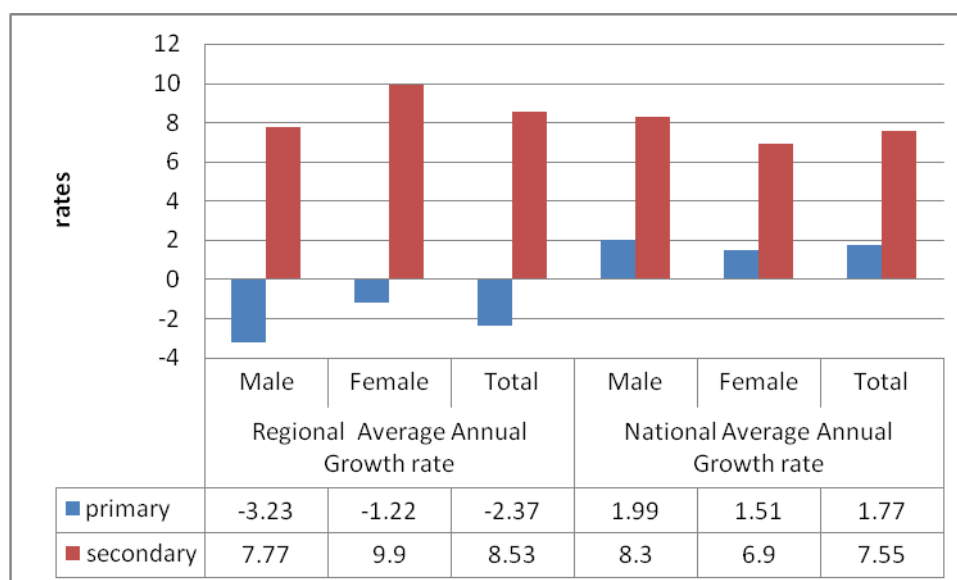


Fig. 1: Average annual growth rate for primary and secondary schools, sex, ANRS
Source: Own calculation, MOE data

The overall average annual growth rate of both primary and secondary schools in ANRS is presented above in figure 1 with the national average annual growth registered. Accordingly, the average annual primary school enrolment growth rate for ANRS shows negative values with -3.23 for male and -1.22 for female while overall average annual growth rate is -2.37 which is very low compared to the national average which is 7.77, 9.9 and 8.53 consecutively for male, female and total. But, compared to primary school enrolment, the enrolment growth rate for secondary school is low. This trend is more supported by the current survey result presented below. This trend is more supported by the current survey result presented below.

Table 3: School Aged and school attending children

Total School Aged children			Total School Attending children			Percentage		
Male	Female	Total	Male	Female	Total	Male	Female	Total
707	605	1312	352	145	498	49.78	23.97	37.96

Source: Own survey result

Although there is access to education in the study area, yet the enrolment rate is low. Small proportion of school aged children attends school. As it can be seen in table 3 above, only 37.96% of the total school aged children in the study area are attending schools even this figure is low for females compared to male students sent for school. Moreover, only about half (49.78%) of the total male school aged children were able to attend school while a very low percentage for the counter female part is observed with only 23.97% of total female school aged children attending school. This is an indication of presence of gender discrimination although the males are not fully enrolled as their age allows them to go to school. Moreover, according the

MOE report 2018/19, the gender parity index for primary and secondary school ANRS was 0.94 and 0.7 respectively which showing a huge gap between male and female student enrolment. This figure is strengthened by a previous study done by UNICEF in 2019 indicating only 3.9% of secondary school aged girls are enrolled compared to the national 16.2%. There are different challenges to this low rate of educational attainment in the region. Early marriage, livelihood system (BIRHANU, 2017; UNICEF, 2019), lack of interest of parents to send their kids to school, lack of teaching-learning facilities, libraries, are among the challenges encountered outside the school (BIRHANU, 2017). In some rural areas where there is a better settlement history, the schools are only limited to grade six which the family will be forced to send their children to nearby urban areas. This situation also forced them to send their male children, only if they have the financial capacity.

There are several reasons for school aged children not to attend schooling. The main reasons for not sending the school aged children to school is they are required to help their families and preference to study Qura'an (Islamic holy book)) with about 66.9% and 33.1% of respondents respectively. The focus group discussions and interviews show that there is still a gap in the families' attitude towards understanding the importance of educating children. They prefer their children to look after their livestock and focus on religious education. According to some of the families, the end of everything is death and for this reason they prefer to value their religious values and after life questions of their God. While analysing the practice of sending school aged children, those wealth families tend not to send their children compared to moderate and low wealthy families. This is a contradicting finding to AUMA et al., (2013) where they stated financial constraints of pastoral communities are one of the hindering factors to access to education. To strengthen this, the 5% alpha level t test was conducted to test the hypothesis that there is no significance difference among different wealth level (high, medium and low) towards the importance of education. Hence, the P value is for wealth level found to be greater than 0.05 indicating existence of significant difference among wealth levels on the perception of importance of education. Moreover, a cross tabulation analysis of wealth level, livelihood systems (pastoral, semi pastoral, daily labourer and private employee), number of school aged and school attending children were done to see if there is a significant difference in sending school aged children to school based on the livelihood and wealth level. Hence, the result shows the presence of significant difference among different wealth levels where the semi pastoralists relatively send their school aged children compared to pastoralists.

Albeit the coverage of schools is improving, the quality of education in the region is totally found to be low. Shortage/lack of school physical infrastructure such as chairs, water, toilets,

libraries and play grounds play a significant role for such low level of quality of education in the region. Unavailability of water and sanitary equipment in the school specifically affected the size of students enrolled and increased female students drop out especially after grade 4 where they start the natural process of period. Such situation forced the female students to drop out and they became exposed for health problems such as wart. Shortage of books and unfamiliar/not localized examples used in the book are among the main factors contributing to low quality of education. Poor quality of teachers and lack of professional ethics by teachers, poor performance of implementation of continuous assessment, poor school management and frequent change of leaders at region level also contributed to the low level of quality of education. Moreover, the changing the medium of instruction from Amharic to the local language in order to answer the issue of learning by mother tongue was a wrong educational policy change by then. The regional government simply implemented it without consulting all stakeholders and evaluating the available potential to implement the strategy where there were no enough teachers who can teach using the local language which in turn affected the overall education system. Moreover, with lack of access to reading areas and with the absence of conducive environment to read, the nationally agreed student-centred education system doesn't fit the context of Afar.

It is obvious that Policies and strategies play an important role to register a good performance in economic development. But, when looking at the Ethiopian educational policy, the policy was the same for both pastoralists and other livelihood practitioners for a very long period of time while the nature and livelihood system of these communities differ. The educational policy devised for other regions doesn't fit Afar regions educational procedure. The policy problem of pastoral education program has also been reported by BIRHANU, (2017). After a very long period time, education policy specific to pastoral community has first proposed by the government while developing the fourth Education Sector Development program (ESDP IV).

Among the key element of the education policy, learning by mother tongue was the most important. The issue of learning by mother tongue is a democratic right given by the currently implemented federal constitution to every nation and nationalities in the country. Books were changed into the local language. The problem of this educational policy change encountered because of lack of teachers who can teach with the local language. Because the majority of teachers were from the neighbouring regions and they don't have the skill to teach in local language. The local teachers were very limited number as the salary of teachers in ANRS is very low and the localities are not interested in becoming teachers.

While doing the regional educational policy change, there was no prior analysis on the challenges that might be encountered as a result of it. The decision didn't include all stakeholders such as teachers, professional in the area and most importantly available resources potential were not analyzed. There were no induction programs prior to policy implementation. Besides, according to EESA data, attrition of teachers both at primary and secondary school were highest in the region compared to other regions with attrition rate of teachers 6.5 at primary school and 7.9 for the high school while 2.2 and 2.9 for the national respectively. Low salary of and lack of incentives for teachers has significantly contributed to high attrition rate of school teachers has been considered as one of the main factors for low quality of teachers. Furthermore, efficiently utilizing the potential of the teachers training college could have played a pivotal role in improving the availability of teacher. But, the college is underutilized due to lack of budget to enrol more students than what they enrolled while they can triple the current enrolment capacity with the current infrastructure. Frequent change of education bureau heads is also one of the main problems. According to one of the middle level managers of the bureau, seven heads and 6 vice heads has led the offices in the last 10 years. Besides, the way leaders assigned to offices is not based on their profession rather it is political. This means, appointed leaders didn't have enough time and appropriate skill to understand the environment of the sector, put their efforts to improve the overall management and improve the net enrolment rate.

4.4.2. Human and Animal Health

Table 4 shows the number of animal health centres across zones in the year 2018/19. As it can be seen from the table, there are about 242 animal health centres where zone 1 has the highest number followed by zone two while the lowest number of animal health centres are in zone 5 and zone 3. In addition to this every woreda in the region has one animal health clinic for except three woredas. According to regional bureau official report, the average coverage of animal health centres and animal health clinics in 2018/19 was 66.33% and 81.04%. But, according to the focus group discussions and field observations done, a significant number of animal health centre and clinics were not properly functioning due to either lack of professionals, or animal health inputs.

Table4: distribution of animal health centres in ANRS, 2018/19.

	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5
Animal Health centre	67	57	38	43	37

Source: Agriculture and Pastoral development bureau, ANRS

Animal health is among the important factors of livestock production where lack of such services will negatively affect the productivity of the livestock sector which will in turn lead the pastoral and agro-pastoral community to food insecurity and poverty.

Regarding the human health service in the region, currently there are about 372 health posts, 96 health centres and 9 hospitals in the region (presented in table 5). According to the observation analysis after visiting the health centres in the study area, the functionality of the health posts and health centres is under question mark.

Table 5: Human health facilities, Number and type, by 2020/21

Health posts	Health centers	Hospitals		
		General	Primary	Maternity(target)
372	98	2	5	2

Source: ANRS Health Bureau

Of the available health centre types where 36.73% are A type health centres where these health centres are equipped with pharmacies and laboratories serving at least 50 persons per day and these types are mostly located at highly populated areas of the region with more than 50000 inhabitants. Whereas 20.41% of the health centres are of Type B, which can deliver a service for about 30 persons per and they might be with or without laboratories and pharmacies while 42.86% are C types, those health centres without laboratories and pharmacies able to serve about 10 person per day. This is an indication of poor quality of health services in the region and people are forced either to stay at home or travel long distance for medication costing them high money and time.

Although there have been improvements on access to human and animal health in ANRS the coverage is far from what is required. Access to human and animal health was rated as worst by 30.5% and 33.75% participants respectively while 69.5% respondents rate access to human health as moderate. Moreover, 57.5% of the respondents rated the access to animal health as moderate while the remaining small percentage (8.75%) of participants rated it as good. Although, the federal government has initiated and devised the livestock master plan to reduce animal diseases, enhance animal welfare, and develop better animal health system (SHAPIRO, 2015), poor access and long distance to animal health post, poor access to transportation, electricity, low number of veterinary professionals are yet among the main challenges mentioned as bottleneck of the animal health.

Gender sensitive service delivery is not available in the selected study areas. But, there are health extension workers who are paid every month. Their responsibility is to educate the rural community and promote preventive mechanisms. But, their effort is very low. On the other hand, there are mobile health workers who are relatively better in supporting the rural community. But, there is still a huge gap in properly utilizing all of them.

There are several reasons for such poor quality of human health services in the region. Service delivery has come to one room in many of the rural health posts and health centres as they don't have all equipment. There is no laboratory equipment in most of the health centres. If there is a laboratory centre, they are only in the centres of the woreda. In those health centres that have laboratory equipment, they lack detergents to function them. Due to lack of facilities, most of the professionals usually leave the place for better option. Such problems of the health centres force people to travel to neighbouring woredas sometimes to neighbouring regions where they face several challenges such as language barrier and they usually exposed for theft. Lack of transport and road access is also another problem where the rural community gets difficulty to get to health centres. In some areas, for example, in zone five it is very difficult to reach the health centres through transportation. People have to go through some other woredas in order to reach districts they administer.

There are several reasons for such poor quality of human health services in the region. Service delivery has come to one room in many of the rural health posts and health centres as they don't have all equipment. There is no laboratory equipment in most of the health centres. If there is a laboratory centre, they are only in the centres of the woreda. In those health centres that have laboratory equipment, they lack detergents to function them. Due to lack of facilities, most of the professionals usually leave the place for better option. Such problems of the health centres force people to travel to neighbouring woredas sometimes to neighbouring regions where they face several challenges such as language barrier and they usually exposed for theft. Lack of transport and road access is also another problem where the rural community gets difficulty to get to health centres. In some areas, for example, in zone five it is very difficult to reach the health centres through transportation. People have to go through some other woredas in order to reach districts they administer. There is also lack of health professionals in the region. Lack of skilled staff was one of the main problems in ANRS with median of health officers and midwives per health centre below the minimum threshold (Ethiopian Standard Agency, 2012). The median skilled health workers (SHW) per ten thousand people for ANRS were 23.03%, below the minimum standard set by WHO (LECHTHALER et al., 2018). The density was only 11.08 % of the WHO's 44.5 SHWs minimum standard to achieve the millennium development goals.

There is only one health Science College in the region producing very few graduates to the region to fill the gaps related pro skilled professionals. Most of the time, the students joining the colleges are those who failed to pass grade 10 national examination. Although the teachers in the college do their best to make the students as professional as possible, the prior capacity of the students can be questioned with the quality of education they actually came through. Therefore, the life of the Afar community is at risk. It is, therefore, tough to properly manage and execute development plans. Healthy people are required in order to assure sustainable development. Achieving the national millennium Development goals and the 2030 agenda of the health sector will be hindered if regional performance is poor.

4.4.4. Water

According to DAVIES et al., (2016), access to water is the most important factor for the livelihood of pastoral and agro-pastoral communities. For the Afar people, water means life. With the hot weather condition of the region ranging from 22-55 degrees access to safe drinking water and water for their livestock is among the priority needs of the community. Access to safe drinking water is rated as worst by the majority (61.5%) of the participants. Those who rated access to drinking water as moderate are mainly located in either woreda cities and/or around the awash basin where access to all types of water is better. Women and girls travel at least 3 hours to fetch water. In general, the overall status of access to safe drinking water in the study area is very low. On the other hand, access to water for animals were rated as worst by 39.25%, moderate by 40.25% and rated as good by 20.5% of the survey participants.

A lot of effort has been exerted to improve access to safe drinking water by digging several holes across the rural areas with depth level as deep as 640m in some areas to produce average of 90litres/second, although water can be found there within the range of 9m to 12 m. Although there are around 1272 boreholes in the region, yet access to safe drinking water is very low in most rural areas. Several reasons could be mentioned here for such low status. Poor planning, unique geology of the region and low quality of water (contains high amount of manganese, salt, high fluoride and sulphur), lack of advanced technological options to search and locate water, lack of culture of water management, lack of skilled professionals, low level of access to transportation and electricity are among the main reason.

4.4.5. All-Weather Road and Transport system

Road transport is supposed to create a network over a wide array of infrastructural facilities. A well-developed road transport sector in developing countries is assumed to fuel up the growth process through a variety of activities of the development endeavours of a nation. Among these,

creation of market access opportunities for agricultural and livestock products is the major one. Moreover, road transport facilities play a role in both the production and consumption decisions of every household in their day-to-day activities. Besides, road transport facilities are essential for expanding education, health service provision, trade facilitation – both within the country and the export market, and better public as well as private service provisions, including banking and insurance services, to the destitute and marginalized rural dweller.

Road infrastructure in the region is very limited where majority of the people are forced to walk long distance. According to Ethiopian Roads Authority data, the distribution of road network is lagging in ANRS while the region has favourable environment for investment opportunity and tourism potentials. The coverage of paved road is a little bit higher in all the regions for except ANRS. The paved roads size in is limited to main roads connecting the region from the other regions. According to official data from the regional transport and rural roads authority, of the total all weather roads, about 2095km (74.36%) were built by the ERA where 1560 kms are paved. The regional government and the community built 722 km and 1347 km respectively. This length of road is too short for a rural community living in a wide range of area. The primary data of this research shows that access to all weather road in ANRS is rated as worst by almost half of the respondents while the second large proportion of the respondents (38.25%) rated as moderate.

Improving the access and quality of transport is the key challenge the region has been facing. There are several problems in improving the regional road construction and transportation system. Financial constraints, lack of machineries to construct the road lack of skilled professional due to low salary scale. In addition, the other problem observed in the road construction sector is the structure of the bureau where the regional rural roads bureau is responsible for designing, contracting, consulting and monitoring. Such merger of responsibilities opens a door for government theft and poor performance of the sector.

4.4.6. Bank and Credit Services

Access to saving institution such as bank are among possible coping mechanisms to recurrent drought and unexpected shocks observed in pastoral and agro-pastoral areas where the communities can sell their assets in bad times so that they can save the money. Moreover, access to credit service can enable the pastoral communities to diversify their source of incomes since financial capacity is the key factor to diversify source of income (OUMA, 2017).

About 50.75% of the respondent rates access to banking services as worst while significant proportion (34.25%) rated the access to bank as moderate. Only 15% of the respondents who rated as the access to banking service as good are mostly from zone one and zone three where these areas have a better access to all weather road and transportation relative to the other zones. In addition to this, credit access in the study area hardly exists. Of course, there are microfinance centres whose aim is to smooth the credit service for the regional community. But, most of them are located in the capital of zones which are not accessible by the community. Furthermore, the credit system by itself needs to be free of interest as the religion of Afar people (Islam) prohibits paying and accepting interests for loaned money. Although the government officials and experts of the area try to explain the system accommodates the religion's commandment, it seems the religious leaders are not on the same side with the government authorities. Therefore, it is necessary to either readjust the system or convince the religious leaders about the system so that religious leaders can convince the community. In addition to this, a system allowing livestock asset to be used for credit services should be devised and implemented.

4.4.7. Access to ICT and Electricity

There is no question of the importance of electricity in improving the wellbeing a community. It is a source of light, cooking energy, and an engine for activities that require electric power. Accessible electric power can improve the reading habit of students, health of households, and can ease the use of different medium of communication which in turn will improve the awareness of the rural community towards the global movements and hence will increase the level of their involvement in all aspects of development activities.

According to Ethiopian Electric Power data, improvements have been observed towards accessibility of electricity, especially in urban areas. It can be concluded that most of the towns of the woredas have access to electricity despite its frequent on/off of the power. As it can be seen in figure 2 below, among the kebeles in the study woredas, Dupiti woreda have a better access to electricity followed by Amibara woreda and Ewa woreda.

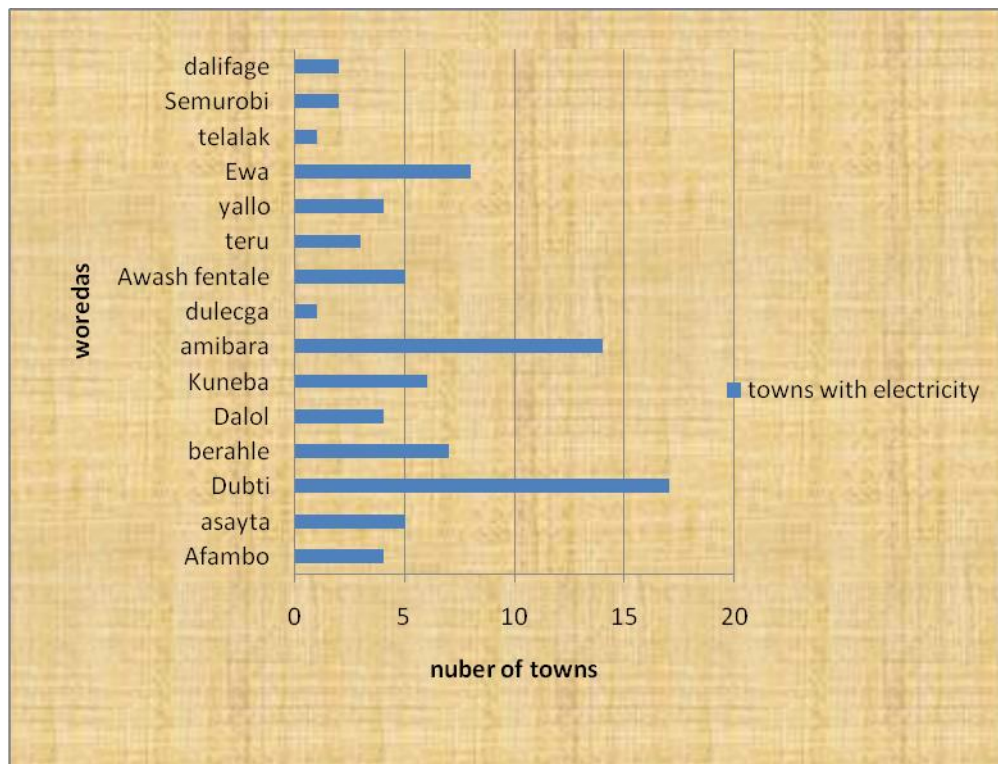


Fig. 2: Towns with electricity in study area

Source: Own calculation, Ethiopian electric Power Service data, ANRS branch

While drawing zone level analysis from figure 2, Awusi resu(zone 1) have better access to electricity compared to the other administrative zones in the region. On the other hand, Harri resu(zone 5) has lowest coverage. The main reason for better access to electricity in the aforementioned woredas is their proximity to the main road and the capital of the region.

Besides the secondary data obtained from the Ethiopian electric Power, the survey participants were asked to rate the level of access to electricity and ICT. Accordingly, access to electricity is rated as worst by the majority of respondents. About 40.75% of the respondents rated the access to electricity in the region as moderate. Comparing access to electricity among zones, the responses are almost similar. This indicates the availability of electricity is poor in the region. Such low access to electricity has a negative impact on efficiency of economic development activities of the region. Industries totally depend on power; the region's weather condition forces the residents to have cooling system which also requires electricity. Besides, with the growing technologies in the world, home equipments are becoming electronic which also requires electricity.

ICT play a pivotal role in easing communication and working environment. For the Afar community, it enables them to have market information by replacing the existing tradition daagu system. But, accessibility of ICT is extremely poor in ANRS. A large majority of the

respondents rated access to ICT as worst while less than 10% of the respondents rated as moderate.

4.5. Development Programs Implemented in ANRS

Several pastoral development projects have been drafted and implemented in ANRS with the focus of livestock commercialization, improving access to social service, and focus of resilience to disaster. But, all of the projects were brought to the community without prior discussion and inclusion of social institutions and traditional indigenous knowledge of the beneficiaries in the ground.

4.5.1. Resettlement/ Villagization Program

As long-term pastoral community development package all of the policy documents devised by the federal government were mainly focused on improving the livelihood of the pastoral communities by settling them. Pastoral societies are proud of their system which is a main livelihood system for a very long period. The attitude of the pastoralists towards understanding the importance of settlement/sedentarization is not to the level expected by the government. So far, there have been both voluntary and involuntary settlements where these pastoral communities settle to get the occasional benefits from the government and leave until the next round of support comes. Besides, the pastoral community was forced to settle by the local authorities where the local authorities are expected to achieve the goals given by the higher-ranking officials.

In 2016/7 and 2017/8, 23, 140 households were settled in 151 resettlement centres in ANRS (ETHIOPIAN NEWS AGENCY, n.d.). With the increasing sedentarization of pastoralists, the reduction in labour input in mobile livestock rearing may lead to a shift from multiple pastoralism toward solely pastoral farming or agro-pastoralism production, which is an indication of high loss in diversity of the pastoral system and consequently the system has been down weighted. If these situations continue, it is likely that pastoral societies across the world will have more unpleasant fates in the future. Even though sedentarization of pastoralists have a positive impact when it comes to getting better access to education, healthcare and water sources, the social values of the pastoral community will be lost as a result of decrement to their livestock size to cope up with the environment. Several researchers (INKERMANN, 2015; RETTBERG, 2010; YOHANNES and MAHMMUD, 2015) found that resettlement program is one of the main challenges impacting the livelihood of pastoral community.

Table 6: Resettlement program implementation and its impact on Afar people

Response	Voluntary settlement	Satisfaction in settlement area	Income has increased	Life has improved	Settlement is better than mobile livelihood
Yes	32 (20.9%)	66(43.2%)	66(43.2%)	66(43.2%)	66(43.2%)
No	121	87(56.8%)	87(56.8%)	87(56.8%)	87(56.8%)

Source: Own survey result

Among the respondents of this survey from the settlement centres presented in table 6, only 20.9% of the resettled community were voluntarily settled while the majority were not settled on voluntary base. But, although they were settled involuntarily, more than half of the settled community replied that their life has not been improved as a result of low income. Therefore, they are not satisfied with the settlement area.

Table7: t test result for preference of livelihood mode among sex, age, livelihood base, wealth

Variables	t	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
				Lower	Upper
sex	1.939	.053	.129	-.002	.260
age	9.522	.000	13.793	10.945	16.641
livelihood base	-2.951	.003	-.217	-.362	-.073
Wealth	-25.248	.000	-.924	-.996	-.852

Source: Own survey result

A t test was conducted to test if there is a significant difference among males and females regarding preference of way of livelihood (mobile or settled). Hence, based on the test result presented in the table 7 below there is no evidence to accept the null hypothesis stating absence of significance difference among males and females. This indicates the presence of variation among males and females. Female are more interested to settle than to live with mobile livelihood.

According focus group discussions, the burden of women in search of water and house activities is the main reason albeit they insisted the availability of grazing area and water for their livestock as precondition to settle which the opinion of both is. T test also conducted if there is significance among different age groups and different wealth status regarding preference of way of livelihood and both tend to accept the null hypothesis that there is no significance difference among different age groups, livelihood base, and wealth levels regarding the preference of way of livelihood. Hence, preference of way livelihood cannot be determined by the level of wealth, livelihood base and age of the community.

According to official data from the regional government, the office of resettlement planned to settle a total of 5160 households in 2011 in which the plan was to settle 666 households in 7 new settlement centres, 80 households in 4 old centres in 2009, 3144 households in 52 old settlement centres in 2010, 170 households in previously established 4 centres for sustainable development goals, 1100 new settlers in 11 settlement centres under sugar production program. But, the government only achieved 448 households from the 77 centres. This achievement level is only 8.7 percent which is an indication of low success level of the resettlement program.

4.5.2. Safety Net program

Ethiopia has implemented several programs to alleviate poverty and improve the living standard of her people. Among the poverty reduction programs in Ethiopia, Productive Safety Net program was started as a pilot project in 18 pastoral woredas of Ethiopia in 2005 including six woredas of Afar with the aim of assisting food insecure pastoral communities by providing food in a form of work for food and direct support of food for those who can't participate in the work for food program. Moreover, the program also aims at improving access to water, market etc which will support the prevention of key pastoral assets. But the implementation of the program was started late in 2009 and the program is still under implementation in ANRS as a means of supporting the food insecure pastoral community who is vulnerable to recurrent drought..

Moreover, since 2016, about 23 projects have been implemented by development partners in ANRS in collaboration with BoLANRD in order to improve the livelihood of the community. Although such development projects have been implemented in the region, yet the living standard is low. According to figure 3 below, the current living standard of Afar people, majority replied that their living standard is either worse now compared to the last five years and the same compared to the last twelve months.

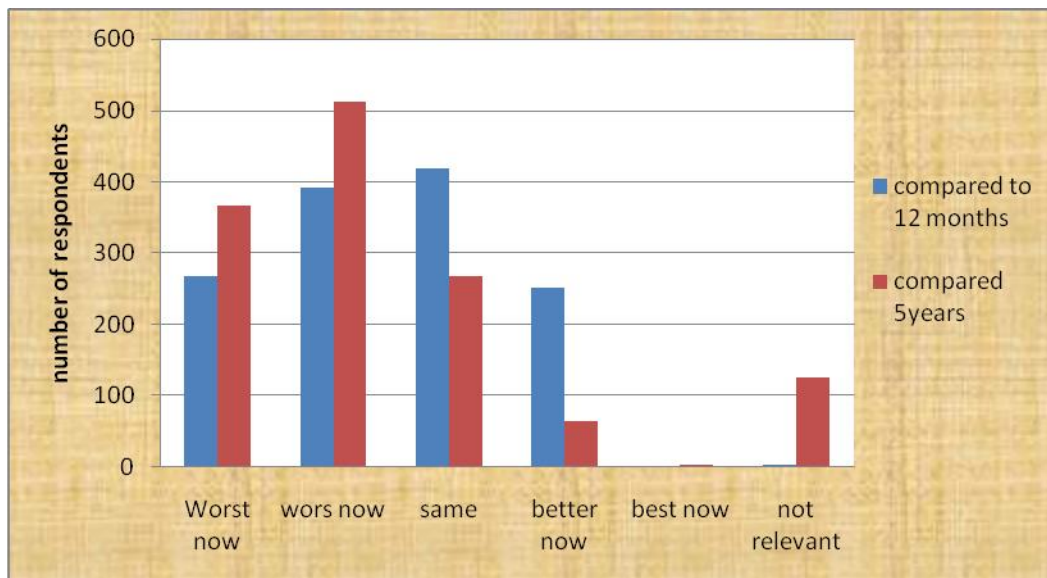


Fig. 3: Food security status, ANRS
 Source: Own calculation, CSA data

Comparing the response of the survey participants regarding their living standard between five years ago and the last twelve months, the number of worst or worsen now is lower in the last twelve months. In general, the graph below indicates that there is no improvement regarding the living standard.

4.6. Governance and Economic Development

Government and its system are expected to play a pivotal role in assuring food security and sustain development of the region. As long as there is a good governance system and well-structured institution, it is obvious there will be a better development with the assumption that the other factors are fulfilled. About 75% of the respondents rated the governance system as worst while the remaining one-fourth of respondents rated as moderate.

Governance structure in most of Ethiopian regions includes Region, zone, woreda and district (kebele), ketene (lower district) administration levels respectively from highest to lowest. But, the key players are those at region and woreda administration units where they have most of the region level offices at woreda level. The centre (zone) level administration and the lower ones have insignificant contribution in budget management. They are simply political structures rather than actively engaging them in overall activities planned and implemented in under their respective zones. Such structural gap has created a vacuum in the administration where there is a direct contact between the region and woreda level bureaus. Moreover, it creates a clash in responsibility since zone level administration units are superior to the woreda level administration while they can't monitor and evaluate the efficiency of the budget utilization. Although very recently the regional government has decided to create clustered zone level

offices which can monitor the activities at woreda level, yet the zone level administration should be strengthened.

Due to the low development status of the region, the respondents were asked how they would prefer the government expenditure should be done relative to the past even though they don't have the actual amount of budgets allotted in the past. Accordingly, all the respondents prefer the government to spend more than the previous spending on water and natural resource utilization while majority of the respondents' prefer to spend more on education, transport, mining, and climate change, natural resource utilization and capacity building. On the other hand, majority of respondents would like the government to spend less on tourism sector while culture, energy sector and environmental protection among the focus area where the respondents prefer to spend the same as before.

Although the respondents recommend the government to spend more in majority of the sectors, it is important to note that the budget allotted to the regional government is limited. Hence, the respondents were asked which sector should be the priority in order to improve the livelihood of the community. Accordingly, the majority of them replied that water sector should be the priority. The second and third priority of the community was all weather road and transport system, and education respectively. Moreover, when merging the first three choices, transport sector takes the upper hand followed by water health sectors. In general, all weather road and transport system, water, health and education are the priority sectors where the survey participants preferred the government to invest on.

In order to come up to conclusion on which sector to prioritize according to the problem in the region, a focus group discussion was held specifically with those who have high academic qualification in the region (master's degree holders). Accordingly, after several discussions, the direction of the focus group discussions resulted in all-weather road and transport system sector to be the priority of the government. With the absence of all-weather roads, it is very difficult to attract investment and tourists which are key players of development. Furthermore, different social services such as banking and credit institution cannot be opened in an area where there are low economic activities.

5. CONCLUSIONS AND RECOMMENDATIONS

The current development status in the region is rated as low progressing. Despite the improvements in overall development of social provisions, access to and quality of both human and animal health, safe drinking water is low. Due to this, the productivity of livestock and living standard of the community is low. Moreover, the infant and under-5 years old mortality rate is high in the region. In addition to the poor access to other social services such as all-weather road, banking and credit services, electricity are the main contributing factors to the region's poor performance in improving the livelihood of the community.

The region has a huge demographic and labour force prospect for development. Moreover, the region is also endowed with high number of livestock population which can contribute to the growing demand for livestock and livestock products such as meat, milk and leather. In addition to this, the region is rich in natural resources, archaeological findings, and cultural attraction tourism potentials. Furthermore, the region is gifted with different mining potentials such as gold, potash and salt. Energy potentials such as geothermal, solar and wind potential are other development enhancing potentials in the region.

Therefore, installation of solar energy should get attention in order to meet the energy demand of the region. A system should be devised to allow people install solar panels and produce and sell energy if they produce more than their demand. This will enable to have a healthy environment for mothers who are using fire woods and electricity facilitates reading habit of students.

Despite the fact that access to education has been improving over the years, the quality of education in ANRS is very low. The growth of school enrolment rates for the past few years is decreasing. Low Gross and net enrolment rate in school at all levels of education, high dropout and repetition rates are the main characteristics of the education sector in the region. The main reason for such low level of enrolment rate is the preference of families to study Qura'an (Islamic holy book) to education in addition to the poor school facilities. Moreover, high gender parity has been seen in the region where male students attending school are higher than their female counterparts. Although there is an improvement towards understanding the importance of education in rural communities, yet there are significant sizes of the population who don't send their school aged children to school. This is more observed among the wealthy mobile pastoral families than the poor contradicting to prior scientific results indicating financial constraint as a problem to sending school aged children to school. Negative attitude of wealthy families comes from the view that they prefer their children to focus on the keeping the livestock and their religion.

Educating students without quality of education simply means increasing the level of illiteracy. Poor/inexistence of school facilities such as books, toilet, water, laboratories and libraries, poor quality of teachers, poor pastoral education policy are the main factors affecting the quality of education. Lack of toilet and water has been affecting the health of female students especially in times of period. The rural Afar female students also don't have the awareness to use sanitary napkins in time of period. The other challenge that is found is lack of flexible schedule for pastoral students where most of the time families need their children at home for assistance every morning freeing (share the responsibility) their children in the afternoon where schooling in the rural areas of the region is mostly delivered in the morning shift. Therefore, as long as the teachers are staying with the community with the responsibility of teaching, allowing afternoon shift will bring a significant difference in enrolment rate of the region. Provision of educational quality improving facilities such as school and public libraries and laboratories, toilets and other inputs should be included at the planning level whenever the schools are to be built. Moreover, provision of sanitary materials must be available in every school system. The use of camel library, the practice of moving the books with the help of camel as a means of transportation, should be used in mobile pastoral community schools as an alternative for libraries.

In addition to improving access to and quality of education, there should be a strong follow up of students both by families and teachers. Furthermore, constructing public libraries in cities can help improve the reading habit of students and will motivate families to push their children to read. Besides, properly following those who are joining to and graduating from higher educational institutions is required by the government. In addition to this, field of studies that the region mainly lacking should be identified and students should be encouraged to study them with prior promise they will get the job after graduation. Scholarship and capacity development opportunities should be arranged for all sector professionals and Afar employees in order to increase the number of skilled workers in the region. In order to improve the quality of professionals cross checking of forged certificates should be done prior to hiring. Moreover, construction of boarding schools at least in zone cities and changing such attitude of the community through religious leaders can enhance both gross and net enrolment rates in the region. Moreover, the school feeding program and must be a permanent project in the region.

Access to both human and animal health facilities has been improving albeit the low service delivery in the centres. Poor health facilities at health centres, distance to health centres, poor access to ambulances and absence of majority of medicines are among the key challenges of human health. Similarly, poor facilities at animal health centres and clinics, lack appropriate animal medicines and lack of professional are among the main reason for poor quality of animal

health in the region. In order to improve the health service facilities, it is important to devise sense of ownership development mechanisms. In addition, the government must act with responsibility by improving the monitoring system, ensuring proper distribution of medicines, equipping the health centres with facilities such as laboratories and detergents. The research result concluded that the coverage of all-weather roads, banking and credit services, electricity and ICT coverage in the region is low; affecting the community livelihood.

The research also concludes that poor planning as the main problem in Afar region. Monitoring and evaluation of activities is also poor due to lack of agreed development indicators and baseline data. This created difficulties in the monitoring and evaluation procedure and holding leaders accountable. Therefore, respective authority in the region must devise development indicators alongside their baseline data in order to clearly evaluate where the region. In addition to poor planning, lack of prioritization of activities at regional level is a key problem of the region. Every office in the region wants its problem to be addressed first while the budget of the region is limited. Priority sectors should be identified in order to bring quick positive change in the development of the region. Hence, the regional priority areas should be improving the all-weather road which will be a base to all infrastructural developments and can attract businesses to the region which in turn will improve the performance of other sectors. In order to minimize the problems related to planning, its recommended implementation of activity-based planning and the establishment of region level plan commission.

The contribution of females in economic development activities is high. But, based on the research findings, significant proportion of female are left out of the economic activities in the region. Low enrolment rates, high dropout rates, and high unemployment rate are the main characteristics of afar female population. Moreover, the responsibility of home activities such fetching water from long distance, herding and milking sheep and goats and preparing meals for the family are left for females. Therefore, it is important to create awareness to assert the importance female's contribution to the regional economy.

The government has long been practicing the resettlement program as a means to improve the livelihood of the community although the impact is not as such significant. In addition to this, the Safety Net program also didn't bring much improvement in the livelihood of the rural community. Rather the program created dependency. In general, by looking at efficiency of the pastoral livelihood improvement programs implemented in pastoral areas, it can be understood that the pastoral development policies in Ethiopia and ANRS in particular don't have clear direction which could have brought significant change in the improvement of the livelihood of

the community due to lack of integrated approach. If pastoral community development policies programs are expected to succeed, integrated development system should be implemented. Hence, all stakeholders such as the local pastoral community who are indigenous knowledge holders, development partners, researchers and other stakeholder should be consulted before devising and implementing any pastoral community development programs.

The government was only focussing on the reports of number of settled communities rather than its impact of their livelihood. Moreover, due to lack of continuous evaluation of on the number of settled communities, the drop outs were not measured. Doing the same thing the same way for long time doesn't bring a change. It can conclude that the community prefers to settle. At the same time, they need the necessary facilities for their family, most importantly grazing areas and water for their livestock. Since water is the main challenge in the region and to the government towards achieving the goal set to transform the mobile pastoral community into semi pastoralism, the mobile pastoral system would be better to improve the livelihood of the community. But, traditional pastoral system must be modernised. The livelihood improvement programs and mega projects, therefore, need to focus on introduction of modern technologies that can improve productivity of the livestock such as meat and meat production, leather production, and milk processing industries.

In order to improve the monitoring and evaluation as well as efficiency of the regional government, it is recommended to strengthen zone level administration by restructuring government offices. Empowering zone by establishing the offices which are available at both the region and woreda level which will minimize the burdens of the region level offices. Such restructuring will enable zone level administration to monitor the budget distribution at woreda levels and evaluate the efficient use of allotted budgets. In addition to this, restructuring either by merging offices with very much interconnected activities or splitting responsibilities can boost the development of the region. Therefore, it is recommended the merging of investment commission with land administration office of the region with proclamation to clear and improve the mandate of the investment commission will ease the implementation of activities and create conducive environment for investment which in turn will play a significant role in achieving sustainable economic development. Moreover, the rural roads authority bureau of the region must be restructured in to three different offices such as rural roads authority responsible to planning and monitoring, independent rural roads construction enterprise responsible for contracting the projects and independent consultant offices. Moreover, it is very difficult to improve access to all weather roads with the current technology the bureau hold. Therefore, besides restructuring the bureau to split the duties, the roads should be built by private

contractors until the office is well equipped with the necessary inputs. Otherwise, with limited budget and infrastructural inputs, it will take time and hence will lead to inefficient use of budget.

It has also been observed that almost all the regional and woreda bureau/agency either doesn't have a website or its not well functioning. Therefore, it is recommendable that every office to have active websites since importance of website is high in promoting the region and attracts tourists, investors, and business clusters which will create jobs, improve the livelihood of the communities and hence ensure sustainable development.

The awareness of the pastoral community towards duties and responsibilities of government leaders and attitude in welcoming development projects are among the key points drawn from the in-depth interviews and focus group discussions. Therefore, a lot has to be done by native scholars and by the University in the region.

Finally, the regional government's development policies and strategies must focus on devising policies which can enhance the utilization of available potentials such as policies that can enhance the productivity of livestock and crop farming, tourism, and energy. When there is an expansion of crop farming in the region, the government should focus on sustaining the agriculture and must find a way to improve the livelihood of the community. Moreover, there should be proactive production selection depending on the weather and prices forecasted, improving market information system and market value chains by the respective authority. Furthermore, in order to motivate the pastoralists and to give focus to the livestock sector, the researcher recommends the establishment slaughtering and exporting centre in ANRS due to its proximity to the port, the inclusion of live animals into the list of item in the Ethiopian Commodity Exchange centre, and establishment of livestock sector advisory council at both national and regional governance levels.

6. NEW SCIENTIFIC RESULTS

Based on the research findings, the following new scientific results have been obtained.

1. The governance structure is also has contributed to the low achievement of the region's economic development. The main hierarchy of the government structure includes region, zone and woreda where the middle one is totally ignored. This structure led the woreda administration to bypass the zone level administration which created high work load on the region level administration. Furthermore, in order to enhance the efficiency of the regional development, there are regional bureaus which requires merger such as investment commission and land administration while the responsibility of rural roads authority needs to split in to three different offices such as rural roads authority, rural roads construction and rural roads design consultancy. In addition to this, the frequent reshuffling of office leaders and absence of merit-based office leader appointment has contributed to the poor efficiency of the region.
2. Lack of Strategic prioritization of activities for budget allocation in the region one of the new scientific findings of this research. Hence, the government for very long period of time has identified water as priority sector albeit there are other sectors which have got significant emphasis. But, in order to assure sustainable development in the region, the rural road development should be given priority since investment, tourist and business attraction, and development of infrastructural development as well as for proper monitoring and evaluation execution are mainly depend on availability of road and transport system. Trying to solve the problem related to road and transport system will also ease the population movement which in turn will enable the community to easily access markets and execute other activities.
3. Lack of baseline data is a leading factor for poor monitoring and evaluation. Moreover, unavailability or non-functionality of websites in the region is among the main factors for poor performance in investment and tourism attraction.
4. In the education sector, the wealthy, mobile pastoralists tend to send lowest number of school aged children compared to medium and lower wealthy level families despite all agreed on the importance of education. Wealthy mobile pastoral communities prefer their children to manage the available livestock resource and read the Holy Qura'an (Islamic Holy Book). Moreover, female students are exposed to wart due to lack of water and toilet in school compound. Furthermore, lack of awareness regarding the use of sanitary napkins in time of period is found to a significant factor.

6.1. Utilization of the results

The findings and results of the research can be utilized in the agricultural and economic higher education in subjects that focus on agricultural integration, sustainability, world economy, international (African) studies. The outcomes and the statements of the dissertation could be utilized in the field of a national or provincial economic and rural development strategy and also can be used as reference in the same strategy-making process of other developing countries.

The dissertation could be used as a bibliographic source and reference for further research and examinations, especially related to African countries. Therefore, the new scientific results and findings can also be used in higher education and also as a supporting document for a new, comprehensive agricultural and economic strategy for the government policy makers at regional and national level.

7. BIBLIOGRAPHY

- AHMED, I. (2011): Taking the camel through the eye of a needle: enhancing pastoral resilience through education policy in Kenya. *Interdisciplinary Perspectives on Science and Humanitarianism*, Vol. 2, March 2011: Tufts University. <https://www.dlci-hoa.org/assets/upload/combined-documents/20200804031525956.pdf>
- AUMA, G. - MIGOSI J. - OMKI K. (2013): Factors affecting access to universal primary education by nomadic pastoralists: A case of Sankuri division Garissa district Kenya: *Universal Journal of Education and General Studies*, Vol. 2(3). 98–108. (ISSN: 2277-0984)
- BIRHANU, M. (2017): Children’s Participation in Schooling and Education in Pastoralist Woredas of Afar Region : Prospects , Challenges and Policy Implications. *Quest Journals Journal of Research in Humanities and Social Science*, 5(2), 50–63. ISSN(Online) : 2321-9467
- CELEP, (2017): Recognising the Role and Value of Pastoralism and Pastoralists.1,1-4 <http://Www.Celep.Info/Wp-Content/Uploads/2017/05/Policybrief--Celep-May-2017-Value-Of-Pastoralism.Pdf>
- CHCHINO GWENYA, W. - HOBSON, M. (2009): Getting it right: Understanding livelihoods to reduce the vulnerability of pastoral communities. London: Overseas Development Institute. *Humanitarian Policy Group*. <https://www.odi.org/sites/odi.org.uk/files/odi-assets/publications-opinion-files/4307.pdf>
- COWEN, T. (2016): Economic Development in an “Average is Over” World. April 8, 2016. 1–43. <https://d101vc9winf8ln.cloudfront.net/documents/28807/original/Manila.pdf?1533824890>
- CSA, (2016): Demographic and ICF Ethiopia Health Survey: key Indicators Report. Addis Ababa, Ethiopia, and Rockville, Maryland, USA. <https://dhsprogram.com/pubs/pdf/FR328/FR328.pdf>
- CSA, (2020): Statistical report on the 2020 Urban Employment Unemployment Survey. *Statistical Bulletin*, 587. Addis Ababa. <http://adapt.it/adapt-indice-a-z/wp-content/uploads/2015/01/survey-unemployment.pdf>
- MEYER, D.F. - MEYER, N. – DE JONG. J. (2016): The formulation of a composite regional development index. *International Journal of Business and Management Studies*, 8(1), 100–116. ISSN: 1309-8047 (Online)
- DAVIES, J. - HERRERA, P. - RUIZ-MIRAZO, J.- MOHAMED-KATERERE, J. - IAN HANNAM, I. - NUESIRI, E. (2016): Improving governance of pastoral lands implementing the Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security. FAO. Rome, Italy. <http://www.fao.org/3/I5771E/i5771e.pdf>
- DEREJE, H. - OKOYO, N. (2015): Determinants of Poverty in Gebi-Resu Pastoralists Area of Afar Region, Ethiopia. *Journal of Poverty, Investment and Development. An International Peer-reviewed Journal*, Vol.17, 2015. ISSN 2422-846X
- ETHIOPIAN NEWS AGENCY, (n.d.): Resettlement Program Transforming Livelihoods of Pastoralists in Afar Region. Retrieved 6 May 2020, from <https://www.ena.et/en/?p=709>
- ETHIOPIAN STANDARD AGENCY, (2012): Ethiopian Standard ES3611: Health Center - Requirements, 1st edition. Addis Ababa. Available from: <http://repository.iifphc.org/bitstream/handle/123456789/556/Ethiopian%20standard%20health%20centers.pdf?sequence=1&disAllowed=y>
- FIREHIWOT S. - YONAS A. (2015): Ethiopian Pastoralist Policy at the Crossroads: Further Marginalization or Revitalization? 72-105. p. In YOHANNES A. and

- MAHMMUDA.(Eds.) (2015). *The Intricate Road to Development: Government Development Strategies in the Pastoral Areas of the Horn of Africa*. Institute for Peace and Security Studies, Addis Ababa University. 454 p. <https://www.africaportal.org/publications/the-intricate-road-to-development-government-development-strategies-in-the-pastoral-areas-of-the-horn-of-africa/>
- GEBRESILASSIE, S. (2009): Nature and characteristics of metasedimentary rock hosted gold and base metal mineralization in the Workamba area, central Tigray, Northern Ethiopia. PhD thesis, Ludwig-Maximilians University, 134 p. https://edoc.ub.uni-muenchen.de/10882/1/Gebremariam_Solomon.pdf
- GEZACHEW, A. (2013): Challenges and prospects of Lake Tana island monasteries as a tourist site since 1950's. *African Journal of History and culture*. 6(4).45-52. DOI 10.5897/AJHC2013.0173
- HORSLEY, J. - PROUT, S. - TONTS, M. - ALI, S.H. (2015): Sustainable livelihoods and indicators for regional development in mining economies. *The Extractive Industries and Society*, 2(2): 368-380. <https://www.sciencedirect.com/science/article/pii/S2214790X1400094X?via%3Dihub>
- IGAD, (2013): The Contribution of Livestock to The Ethiopian Economy, Policy Brief. Retrieved from IgadCenter For Pastoral Areas and Livestock Development (Icpald). [https://igad.int/attachments/714_ETHIOPIA%20BRIEF%20\(1\).pdf](https://igad.int/attachments/714_ETHIOPIA%20BRIEF%20(1).pdf)
- INKERMANN, H. (2015): Diversification of livelihood strategies and the transformation of pastoralist life among Afar women in Baadu, Ethiopia. Development geography occasional paper, No.04 University of Bonn, Germany. <https://bonndoc.ulb.uni-bonn.de/xmlui/bitstream/handle/20.500.11811/8580/Occasional%20Paper%20-04-Helena%20Inkermann.pdf?sequence=1&isAllowed=y>
- JAMES, K. - MICHAGOWS, E. A. – ADMASU, L.K. (2014): Large Scale Land Deals in Ethiopia: Scale, Trends, Features and Outcomes to Date. *IdrcandIied*, London, P 62. ISBN: 978-1-78431-020-2, ISSN: 2225-739X, e-ISSN:2227-9954 <https://pubs.iied.org/12575IIED>
- KACEWICZ, M. - PETERS, K.M. (2009): Napa AAPG Hedberg Research Conference on Basin and Petroleum Systems Modelling. *The American Association of Petroleum Geologists Bulletin*, 94(6), 773-789. Doi10.1306/10270909128
- KOVACEVIC, M. (2011): Review of HDI critiques and potential improvements. Human Development Reports Research Paper 2010/33. https://www.researchgate.net/publication/235945302_Review_of_HDI_Critiques_and_Potential_Improvements_Human_Development_Research_Paper_201033
- LECHTHALER, F. – ABAKAR, M.F. - SCHELLING, E. - HATTENDORF, J. – OUEDRAOGO, B. – MOTO, D.D. – JAKOB, Z. (2018). *Bottlenecks in the provision of antenatal care: rural settled and mobile pastoralist communities in Chad*. *Trop Med Int Heal* [Internet]. Available from: <http://doi.wiley.com/10.1111/tmi.13120>
- MICHALEK, J. - ZARNEKOW, N. (2012): Application of the rural development index to analysis of rural regions in Poland and Slovakia. *Soc. Indic. Res.* 105, 1–37. DOI 10.1007/s11205-010-9765-6
- NABIL, D. (2003): Problems and Prospects of Sustainable tourism Development in the OIC Countries. *Journal of economic cooperation*, 24(1), 25-62. <https://www.sesric.org/files/article/127.pdf>
- NEJIMU, B. – HUSSEIN, M. (2013): Pastoralism and antenatal care service utilization in Dubti District, Afar, Ethiopia (2015). A cross sectional study. *Pastoralism: Research, Policy and Practice*, 6(15). <https://pastoralismjournal.springeropen.com/articles/10.1186/s13570-016-0062-0>

- OECD (Organisation for Economic Co-operation and Development). (2014): Using well-being indicators for policy making: Region of Sardinia, Italy. Paris: OECD Publishing. <https://www.oecd-ilibrary.org/docserver/9789264217416-10-en.pdf?expires=1614756264&id=id&accname=guest&checksum=41EE299093DDDA96BF7CF620D45443DF>
- OUMA, C. (2017): Analysis on Pastoralists Financial Products and Models in Kenya. *International journal of innovative research and development*, 9(2), 90–103. <http://erepo.usiu.ac.ke/11732/3372>
- PIKE, A. - RODRÍGUEZ-POSE, A. - TOMANEY, J. (2007): What kind of local and regional development and for whom? *Regional Studies*, 41(9):1253-1269. <https://doi.org/10.1080/00343400701543355>
- RETTBERG, S. (2010). Contested narratives of pastoral vulnerability and risk in Ethiopia's Afar. *Practical Action Publishing, Pastoralism*, 1(2). ISSN: 2041-7128 (print) ISSN 2041-7136 (online).
- SAGAR, A.D. - NAJAM, A. (1998): The Human Development Index: a critical review. *Ecological Economics*, 25(3), 249-264. <https://www.sciencedirect.com/science/article/pii/S0921800997001687?via%3Dihub>
- SHAPIRO, B. (2015): Livestock Master Plan (LMP): Roadmaps for the Ethiopia Growth and Transformation Plan (GTP II-2015-2020). The Livestock State Ministry, MOA and ILRI. Presented at the Rural Economic Development and Food Security Sector Working Group Broader Platform meeting, Ministry of Agriculture, Addis Ababa, Ethiopia, Nairobi, Kenya: ILRI. <https://www.ilri.org/publications/livestock-master-plan-lmp-roadmaps-ethiopia-growth-and-transformation-plan-gtp-ii%E2%80%942015>
- SIRAJEA, I. - BEKELEB, A. (2011): Assessment of Food Insecurity and Coping Mechanisms among Pastoral Households of Afar National Regional State: The Case of Chifra District, Ethiopia. *Ethiopian Journal of Agricultural Sciences*, Vol. 23, 145–156. eISSN: 2415-2382. <https://www.ajol.info/index.php/ejas/article/view/142874>
- TADESSE, S. - MILESI, J.P. - DESCHAMPS, Y. (2003): Geology and mineral potential of Ethiopia: *a note on Geology and mineral map of Ethiopia*. *Journal of African Earth Sciences* 36(04): 273- 313. [https://doi.org/10.1016/S0899-5362\(03\)00048-4](https://doi.org/10.1016/S0899-5362(03)00048-4)
- TEKA, A.M. - TEMESGEN W.G. - FRE, Z. (2019): Status and determinants of poverty and income inequality in pastoral and agro-pastoral communities: Household-based evidence from ANRS, Ethiopia. *World Development Perspectives*, Elsevier, vol. 15(C), pages 1-1. <https://www.sciencedirect.com/science/article/pii/S2452292919300293?via%3Dihub>
- TESHALE, B. (2010): Ethiopia as a Tourist destination, An Exploration of Swedish Tourist, Master's thesis, Blekinge Institute of Technology School of Management. <https://www.diva-portal.org/smash/get/diva2:833353/FULLTEXT01.pdf>
- UN-HABITAT, (United Nations Human Settlement Programme) (2013): State of the World's cities 2012/2013: prosperity of cities. 152p. <https://sustainabledevelopment.un.org/content/documents/745habitat.pdf>
- UNICEF, (2019): UNICEF Ethiopia - Education for Pastoralist Children. <https://unesdoc.unesco.org/ark:/48223/pf0000225660>
- VAN DEN BERGH, J. - ANTAL, M. (2014): Evaluating alternatives to GDP as measures of social welfare and progress. WWW for Europe Working Paper, No. 56, WWW for Europe, Vienna. <https://www.econstor.eu/handle/10419/125713>
- VINAY, K.S. (2010): Sedimentation, organic maturity, and petroleum potential of the Oligocene Miocene oil shale deposits, Yayu Basin, south-western Ethiopia by Wolela. Some new insights. *The American Association of Petroleum Geologists Bulletin*, 94: 643-663. DOI 10.1306/09080908166

WISP, (2016): Pastoralism to Sustaining Rangelands Ecology. Retrieved October 07, 2018,
From *World Initiative for Sustainable Pastoralism*,
[Http://Www.Fao.Org/3/A-Bq715e.Pdf](http://www.fao.org/3/A-Bq715e.pdf)

YOHANNES, A. – MAHMMUD, A. (Eds.) (2015): The Intricate Road to Development: Government Development Strategies in the Pastoral Areas of the Horn of Africa. Institute for Peace and Security Studies (IPSS), Addis Ababa University. 454 p.
<https://www.africaportal.org/publications/the-intricate-road-to-development-government-development-strategies-in-the-pastoral-areas-of-the-horn-of-africa/>

8. PUBLICATIONS

- ABDULKADR, A. A.** (2019): Benefits and Challenges of Pastoralism System in Ethiopia. *Studia Mundi Economica*, 6(3), 56–67. <https://doi.org/10.18531>
- ADOL, G. F. - **ABDULKADR, A. A.** - JUMA, L.O. (2018): *Who Has More Attractive Youth Start-Up Environment for Regional Development? A Case Study of East African Region.* *Acta Avada.* 2018:5pp. 54-60., 7p. ISSN 2351-6399. <http://acta.avada.lt/acta-avada-numeriai/2018-nr-5>
- NESZMÉLYI, G. I. - **ABDULKADR, A. A.** - NAGY, H. (2020): Crossbreed cattle: Perception and Challenges in selected districts of Tigray and Afar Regional States, Ethiopia. *Journal of Regional Economy. South Russia*, 8(3), 87-95 DOI: <https://doi.org/10.15688/re.volsu.2020.3.8>
- JUMA, L. O. - ADOL, G.F. - **ABDULKADR A.A.** (2020): Kenya's Standard Gauge Railway Project in the Context of Theory and Practice of Regional Planning. *Acta Carlos Robertus*, 10(2), 85-96. Doi:10.33032/acr.2479
- ABDULKADR, A.A.**(2019): Critical Analysis on Public Administration, Policy Development and Agricultural and Rural Development Policy of Ethiopia. 44-56 p. In: NAGY, H. (Ed.), *Regional policy in practice in selected African, Asian and European countries.* Rzeszów.
- NAGY, H. - NESZMÉLYI, G. I. - **ABDULKADR, A. A.**(2019): The Role of Agricultural Production and Trade Integration in Sustainable Rural Development. 425-442 p. In EROKHIN, V. and TIANMING, G.(Eds.), *Handbook of Research on Globalised Agricultural Trade and New Challenges for Food Security.* IGI Global, USA. <https://doi.org/10.4018/978-1-7998-1042-1.ch021>
- ABDULKADR, A. A.** (2018): Is Pastoralism A Sustainable Livelihood for Inhabitants In Dryland Areas? Review: The Case of Afar Regional State, Ethiopia. 103-112 p. In NESZMÉLYI, G.I.(Ed.), *Regional Integration and spatial Process.* Szent István University Publishing, ISBN 978-963-269-801-4
- ABDULKADR, A. A.** (2020): The Impact of leadership change on socio-economy of Ethiopia: April 02/2018 to April 02/2019. *Journal of Mlada Humanistyka*, 17(2), 1-14.
- In progress:*
- ABDULKADR, A. A.** – JUMA, L. O. – ADOL, G. F. – NESZMÉLYI, G. I. (2021): East African Transport Infrastructure: The Case of Ethiopia, Kenya and Tanzania (Accepted conference paper)
International Scientific Conference Engineering for Rural Development, Latvia University of Life Sciences and Technologies, Faculty of Engineering, Jelgava, Latvia. 26 - 28 May 2021
- ABDULKADR, A. A.** (2021): Determinants of Primary School Students' Academic Performance in Teru District, Afar Regional State (Ethiopia)
Selye e-Studies, Komarno, Slovakia, 1/2021.
- NESZMÉLYI, G.I. - **ABDULKADR, A. A.** – NAGY, H.(2021): The Role of Infrastructure: Transport, Information Communication Technology and Power in Ethiopian Economy. *Journal of Regional Economy. South Russia*