



Economic Justification of Debre Elias – Yewula Road Project, Ethiopia

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Abstract: The importance of transportation in the development of economies around the world can't be overemphasized; because a well-developed transportation system plays a vital role in the economic development of the country. Though, rural infrastructure such as rural roads is very important, rural road investments do not occur in a vacuum. Hence, the economic importance of the intended road should be assessed before the implementation of the project. This document is prepared for an economic justification of the proposed Debre Elias – Yewula Road Project. Debre Elias Woreda is one of the most productive woredas in East Gojjam Zone and it is the main wheat-producing woreda in Amhara National Regional State (ANRS) known as the breadbasket of the west gojjam zone. And also, it is suitable for a variety of agricultural products such as crops, fruits, and vegetables as well as livestock production. Debre Elias woreda contributes more than 10% of east gojjam zone major crops production such as Teff, Wheat, Maize, and sesame. This woreda contributes more than 17% and 10% of the total wheat and maize production in east gojjam zone. In addition, Debre Elias Woreda is home to people who have made great contributions to the country and the world. For example, Kegn Geta Yoftaye Nigussie, Dr. Hadis Alemayehu, Abune Theophilos; Melaku Begosew, Dr. Esayiyas Aleme Engida, and others. In the tourism sector, it is a woreda with many natural and man-made places and resources to be visited. For example, Selassie Monastery, Debre Elias Church; Debre Genet Abo Church, the Abba Fekikh Yassin grave, Forty-four Ponds, the Nile Springs, and the Abba Tekle-Alpha Pillar are very historic places and have many visitors every day. Moreover, Debre Elias woreda has various types of natural resources and minerals such as gums and resins, sand, granite, marble, coal, quartz, iron, and others. Especially this woreda is the source of industry and construction minerals such as granite, quartz, and sandstone with coverage of more than 4500 ha, 3000 ha, and 4800 ha respectively. Though Debre Elias Woreda has great potential in agricultural production, natural resources, tourism and human resources, it has no quality road yet to utilize its potential. Therefore, it is recommended that, the implementation of the intended road project will help to utilize the potential of the woreda and it is a great fortune for the region as well as the country.

Keywords: Infrastructure, Labour Market, Nile Springs, Traffic Congestion, Trinity Monastery

1. Introduction

Debre Elias woreda¹ is one of the eighteen woredas, found in East Gojjam Zone, Amhara National Regional State of Ethiopia, which is located around 340 km Northwest of Addis Ababa and about 41 km Northwest of Debre Markos town. Small-scale mixed agriculture is the dominant source of livelihood for the local people. Maize, Barley, Wheat, Teff, and Potatoes are the principal crops, and from the livestock

Cattle, Sheep and Goats are the dominant animals [1, 15].

Debre Elias Woreda is known for its wheat production and productivity. In addition, it is also a major producer of maize, teff, sesame, beans, coffee, sugarcane, and vegetables and fruits. It is also a woreda with a large livestock population and endowed with various types of minerals and natural resources such as gums and resins, sand, granite, marble, coal, quartz, and other types of minerals. Moreover, Debre Elias Woreda is home to people who have made great contributions to the country and the

¹ Woreda is an Ethiopian administrative boundary equivalent to district and Kebele is a collection of villages in the district.

world. For example, Kegn Geta Yoftaye Nigussie, Dr. Hadis Alemayehu, Abune Theophilos; Melaku Begosew, Dr. Esayiyas Aleme Engida, and others. In the tourism sector, it is a woreda with many natural and man-made places and resources to be visited. For example, Trinity Monastery, Debre Elias Church; Debre Genet Abo Church, the Abba Fekikh Yassin grave, Forty-four Ponds, the Nile Springs, and the Abba Tekle-Alpha Pillar are very historic places and have many visitors every day.

2. Economic Justification of the Road Project

The importance of transportation in the development of economies around the world can't be overemphasized; because a well-developed transportation system plays a vital role in the economic development of the country. The vision of the Ethiopian Roads Authority (ERA) stated that *“assure the provision of adequate, reliable, high quality and standard road network to Ethiopians and open up all potential development areas which will contribute to fast socio-economic development all over the country”* confirmed this fact. Thus, an improvement in the quality and provision of roads increase personal well-being. This, in turn, assists in reducing poverty and contributes towards social development [10, 14].

As we have seen above, Debre Elias Woreda is a woreda that has full potential in various sectors including agriculture, human resources, minerals, and natural resources, tourism, and others. But due to the lack of road infrastructure, the country has not used all the resources that the woreda can provide. If the proposed Debre Elias-Yewula road project were to be built, it would have been able to attract both domestic and foreign investors and use the potential of the woreda. Geographically, the Debre Elias –Yewula road

project, is intended to connect Debre Elias woreda to the main road that connects Debre Markos (capital city of east gojjam zone), Bahir dar (capital city of Amhara National Regional State), and Addis Abeba (capital city of Ethiopia) and other parts of the country. Therefore, the construction of Debre Elias-Wola road will help to connect Debre Elias Woreda with various domestic markets as well as the international market and which help to utilize the potential of the woreda.

Though rural infrastructure such as rural roads is very important, rural road investments do not occur in a vacuum. Hence, the economic importance of the intended road should be assessed before the implementation of the project. It is obvious that Debre Elias woreda could benefit from the construction of this road in various ways. However, this manuscript is tried to show how the east gojjam zone and Amhara region as well as the country could be beneficial from the construction of this road since Debre Elias woreda is one of the woredas in the region which is rich in various resources. Let's take a look at the potential of the woreda to some extent, and see how much it will benefit the region and the country if Debre Elias Woreda is connected with the road with neighboring woredas and regions.

2.1. Overview of Agricultural Potential and Contribution of the Woreda

Debre Elias Woreda is one of the most productive woredas in East Gojjam Zone and is the main wheat-producing woreda in Amhara National Regional State (ANRS). That is why it is known as *“the breadbasket of the west gojjam zone”*. Although Debre Elias Woreda is known for its large wheat production, it is suitable for a variety of agricultural products such as crops, fruits, and vegetables as well as livestock production.

Table 1. Production Status and Trend of Major Crops Produced in the Woreda.

| East Gojjam Zone | | | Debre Elias Woreda | | |
|------------------|-----------|------------------------|--------------------|------------------------|------------------|
| Production Year | Crop Type | Production per Quintal | Crop Type | Production per Quintal | Percentage share |
| 2017/18 | Teff | 4,912,125 | Teff | 99,294 | 2.02 |
| | Wheat | 6,230,713 | Wheat | 1,108,744 | 17.79 |
| | Maize | 5,091,655 | Maize | 573,512 | 11.26 |
| | Sesame | 124,966 | sesame | 88,826 | 71.08 |
| 2018/19 | Teff | 5,145,239 | Teff | 121,788 | 2.37 |
| | Wheat | 6,287,603 | Wheat | 1,174,536 | 18.68 |
| | Maize | 5,049,456 | Maize | 491,633 | 9.74 |
| | Sesame | 142,372 | sesame | 34,520 | 24.25 |
| 2019/20 | Teff | 4,616,432 | Teff | 93,648 | 2.03 |
| | Wheat | 5,688,229 | Wheat | 1,010,500 | 17.76 |
| | Maize | 4,466,686 | Maize | 509,916 | 11.42 |
| | Sesame | 142,832 | sesame | 31,602 | 22.13 |
| 2020/21 | Teff | 4,660,168 | Teff | 98,683 | 2.12 |
| | Wheat | 5,640,032 | Wheat | 829,008 | 14.7 |
| | Maize | 4,903,570 | Maize | 502,629 | 10.25 |
| | sesame | 132,126 | sesame | 26,788 | 20.27 |
| Total | | 63,234,204 | | 6,795,627 | 10.75 |

Source: East Gojjam Zone Agricultural Bureau.

2.1.1. Crop Production

Crop production and marketing constitute the largest sub-sector in the region as well as in the Ethiopian economy [2]. Debre Elias woreda is suitable to produce various agricultural products, wheat, maize, Teff, bean and sesame are the major crops that are producing in the woreda. The production data from 2017/18 to 2020/21 cropping season shows that in the major crops such as wheat, maize, Teff, and sesame; 6,795,627 quintals of crops were produced. This implies that Debre Elias woreda contributes more than 10% of east gojjam zone production in major crops such as Teff, Wheat, Maize, and sesame (Table 1). And also, this woreda contributes more than 17%, (except the 2020/21 production year) of the total wheat production in the east gojjam zone. Moreover, more than 10% of east gojjam zone maize production has come from Debre Elias woreda. This shows how Debre Elias Woreda is highly potential in terms of crop productivity and how much it can benefit the country if used properly.

Ethiopia has emerged as one of the fastest-growing economies in Africa in the early twenty-first century. And the country looked to a new model for transformation of the economy and promotes economic development, i.e. *aggressive construction of integrated agro-industrial parks* [19]. However, this structural transformation of the economy remains challenging unless the necessary agricultural products (inputs) are produced and distributed to the constructed industries. Just to see the nearest one as an example, Burie and Bahir dar integrated agro-industrial parks demanding a huge amount of agricultural products. And as we can see in Table 1, Debre Elias woreda produces a lion share (71%) of sesame production in the east gojjam zone by 2017/18 production. This shows that Debre Elias Woreda is an important and strategic place to provide inputs for industries mainly for Burie and Bahir dar integrated agro-industries.

Also, if it was as the capacity of wheat production and productivity of the woreda, the woreda would have had a lot of flour, bread, pasta, and macaroni factories. However, according to the Woreda Investment Bureau, there is only one flour factory currently in operation. As we have seen, although the woreda is the largest producer of oilseeds in the zone, especially sesame, there is still no oil factory that can process this product. The author of this article is confusing by the situation and asked the woreda investment bureau staffs and investors that while there is a huge amount of product in the woreda how and why there are no factories that can use these inputs. According to information obtained from the Woreda Investment Bureau, although many investors enter the woreda at different times to invest, they change their project plan after seeing the difficulty of the road. Of course, some investors have even tried to sweep the roads on their own due to their desire to use the woreda's abundant resource. All of this shows that how Debre Elias the woreda's bad road infrastructure is a hindrance to the development of the

country. The author of this article tries to contact some farmers and they said that they will face severe market shortages or deflation during production. In particular, they say that the production of wheat in the woreda is so high that the farmers can't deliver all the products to the barn, so they sell it from the threshing floor to the traders at a very low price. This is because the woreda doesn't have a good road and many traders do not come to the woreda which makes the price of agricultural products to be determined by the few traders in the area. Moreover, some farmers not to sell their products in cheap price, they store their produce in a barn and it ruined by pests and other things. All this shows that due to the fact that as the woreda is not connected to the local and foreign markets products of the woreda are wasting.



Photo credit: Ato Ayalew Beyene- Debre Elias Woreda Administrator

Figure 1. Wheat sprout.

2.1.2. Fruits and Vegetables

Debre Elias Woreda is suitable for growing a variety of vegetables and fruits. Especially, Mango, Avocado, Orange, Papaya, coffee, and sugarcane are among the major fruits and vegetables producing in the woreda. According to the 2020/21 census, the woreda has 888,175 numbers of coffee plants which are managed by 3, 832 persons (Table 2). Under our country's real situation where the main export commodity is coffee, and very high foreign exchange currency shortage, connecting Debre Elias woreda via quality road to the local as well as international markets and utilizing its full capacity is strategically importance to solve our country foreign exchange shortage. The information obtained from the east gojjam zone agricultural bureau shows that though a high amount of fruits and vegetable products are producing in the woreda, due to the absence of quality road and perishability nature of the products only less than 30% of the total production is reaching to the final consumer. Also, although Debre Elias Woreda is suitable for the production of various types of fruits and vegetables, there is currently no factory that processes any fruits and vegetables into products.

Moreover, the woreda has a great agricultural land that can be developed using irrigation technology. In the 2019/20 production year 3,156 quintals, 159,702 quintals, and 178,105 quintals of crop, fruit, and vegetable, and sugarcane were respectively produced (Table 3). All these show that Debre Elias woreda produces surplus fruits and vegetables which need transportation and more market integration. Therefore, the construction of this road will help to promote rural and agricultural development of the region as well as the country.

Table 2. Fruits and vegetable production by 2020/21.

| Crop Type | Producing Kebeles | Area Coverage Per Ha | Amount in Number | Participant | | |
|-----------|-------------------|----------------------|------------------|-------------|--------|-------|
| | | | | Male | Female | Total |
| Mango | 15 | 82 | 30144 | 563 | 31 | 594 |
| Avocado | 15 | 100 | 60356 | 640 | 52 | 692 |
| Coffee | 15 | 278.5 | 888175 | 3421 | 411 | 3832 |
| Orange | 15 | 24 | 5600 | 100 | 33 | 133 |
| Papaya | 15 | 8 | 13714 | 150 | 36 | 186 |
| Banana | 15 | 80 | 30060 | 1121 | 45 | 1166 |

Source: East Gojjam Zone Agricultural Bureau.

Table 3. Production using Irrigation by 2019/20 Cropping Year.

| Quarter | Cereal type | Production per quintal | Area coverage in ha |
|---------|---------------------|------------------------|---------------------|
| 1 | Crop | 742 | 14 |
| | Fruit and vegetable | 58522 | 356 |
| | Sugarcane | 85021 | 53 |
| 2 | Crop | 2414 | 52 |
| | Fruit and vegetable | 101180 | 662 |
| | Sugarcane | 93084 | 77 |

Source: Debre Elias Woreda Agricultural Office.

2.1.3. Livestock Production

Livestock is considered as a second economic driver (16-19% GDP, 35-40% GDP of Agriculture). Given a mixed farming system in the area as well as in the country, animals, are important sources of livelihood of the society [3]. Livestock contributes to people's livelihoods through numerous channels: income, food, employment, and transportation, draft power, manure, savings and insurance, social status, etc. Cattle production is one of the main agricultural industries in Ethiopia. The country produces over 3.8 billion liters of milk and 1 million tons of beef per year valued at USD 2.5 billion and USD 5.1 billion, respectively. According to the information obtained from the ANRS

livestock resource development and promotion agency and the east gojjam zone livestock office, the east gojjam zone contributes more than 11% of the Amhara region livestock production, which includes cattle, sheep, goat, chicken, and bee. And also, Debre Elias woreda contributes 7% of east gojjam zone livestock production. Although Debre Elias Woreda has a high production of meat, dairy, leather, and honey; this product are mainly used in-home consumption. But if this woreda has a market opportunity and has a good road and uses its livestock resources properly, it can make a significant contribution to the country. Moreover, this will help to bring more technologies into the woreda and help modernize the traditional animal husbandry system.

Table 4. Livestock Production of East Gojjam Zone and Debre Elias Woreda.

| Livestock | East Gojjam Zone | | | | Livestock | Debre Elias Woreda | | | |
|-------------------|------------------|---------|---------|---------|-------------------|--------------------|--------|--------|--------|
| | Year | | | | | Year | | | |
| | 2017 | 2018 | 2019 | 2020 | | 2017 | 2018 | 2019 | 2020 |
| Cattle (local) | 2012728 | 2105589 | 2207560 | 2314595 | Cattle (local) | 147873 | 154625 | 161892 | 169507 |
| Cattle (improved) | 35647 | 38192 | 39911 | 41707 | Cattle (improved) | 140 | 146 | 152 | 159 |
| Sheep and Goat | 2496766 | 2619107 | 2747443 | 2882068 | Sheep and Goat | 70710 | 74175 | 77810 | 81622 |
| Chicken | 7793084 | 818274 | 859188 | 902147 | Chicken | 50295 | 52810 | 55450 | 58223 |
| Bee | 136846 | 143689 | 150873 | 158417 | Bee | 17806 | 18696 | 19631 | 20612 |
| Total | 12475072 | 5724850 | 6004975 | 6298934 | Total | 286824 | 300452 | 314935 | 330123 |

Source: ANRS livestock promotion and development office and east gojjam zone agricultural Bureau.

2.2. Agricultural Input Usage Status and Trend

It is known that agricultural inputs such as inorganic fertilizer, herbicides/pesticides, and improved seeds are not manufactured in the rural areas and have to be transported from the area of production to their destination to be used. If this is the case then maybe there is a problem with transportation. This will prevent the farmers from using the inputs in sufficient quantity and quality, as this will prevent the inputs from reaching the right time and quantity and making them more expensive. This indirectly affects the

production and productivity of the woreda as well as the country.

Hence, the transport service and associated transport cost during the transportation of the agricultural inputs, in one way or another, affect the usage of the inputs and eventually the crop yield. Moreover, studies show that the unavailability of rural infrastructure, particularly roads and other transport services, affected farmers' potential to adopt modern agricultural technologies [6]. This means that a way for local farmers to use agricultural inputs and modern technologies is crucial. In connection with its productivity, Debre Elias

woreda uses a high amount (share) of agricultural inputs such as inorganic fertilizer, herbicides/pesticides, and improved seeds.

Table 5. *Agricultural Input Using Status and Trend of Debre Elias Woreda.*

| | | Year | | | |
|----------------------------------|-------|---------|---------|---------|---------|
| | | 2017/18 | 2018/19 | 2019/20 | 2020/21 |
| DAP and UREA | | 52650 | 57517.5 | 65726 | 71262 |
| Improved Seed | Wheat | 4014.5 | 4733.15 | 2746 | - |
| | Maize | 994 | 1018.9 | 106575 | - |
| | Teff | 5 | 12 | 14 | - |
| Nitrogen Phosphorus Sulfur (NPS) | | 45161 | 46411.5 | 550222 | - |
| Combiner | | 20 | 32 | 24 | 41 |
| Tractor | | 4 | 4 | 4 | - |

Source: Debre Elias Woreda Agricultural Bureau.

As we have seen in Table 5 above, Debre Elias Woreda is a major user of modern technologies such as improved seed, tractor, and combiner and this shows how much the woreda is productive. Therefore, it is very important to connect this woreda with a good road, which has the highest potential in terms of agricultural production and productivity, in order to increase its production and benefit the country.

2.3. Population and Labour Market Analysis

For a developing country where the capital resource is scarce, the availability of an abundant labour force has a vital role in the development of that country. Debre Elias Woreda is a place where many people were born and educated who have made great contributions to the country and the world. Such as:

- 1) Kegn Geta Yoftaye Nigussie
- 2) Dr. Hadis Alemayehu
- 3) Abune Theophilos
- 4) Melaku Begosew
- 5) Dr. Esayiyas Aleme Engida and others.

Table 6. *Population of Debre elias woreda.*

| Age Group | Year | | | | | |
|-----------|--------|---------|---------|---------|---------|---------|
| | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 |
| 0-14 | 43,585 | 44,226 | 44,833 | 45,432 | 46,007 | 46,583 |
| 15-64 | 52,210 | 53,156 | 54,083 | 54,997 | 55,907 | 56,814 |
| 64+ | 3,360 | 3,415 | 3,469 | 3,522 | 3,574 | 3,626 |
| Total | 99,155 | 100,797 | 102,385 | 103,951 | 105,488 | 107,023 |

Source: ANRS planning commission

Debre Elias population growth rate remains high, estimated at more than 1.5% per annum. And about 82.52% of the population lives in rural areas with urbanization of only 17.48%. And also, by the year 2020/21 (2013 E.C) about more than half (53.09%) of the total population is between 15 to 64 years of age, which reflects Debre Elias's low dependency ratio. And also, the percentage of the population between the ages of 15 to 64 is increasing year to year. And also, only about 3.39% of Debre Elias woreda's population is above the age of 64 years. These show that Debre Elias woreda has a huge labour force that can be

employed in various sectors of the region as well as the country.

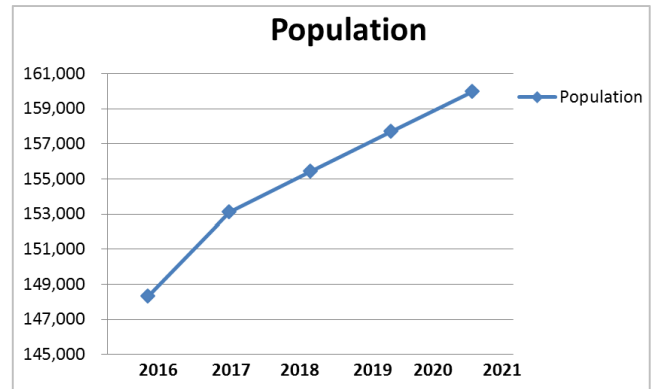


Figure 2. *Population Growth Trend of Debre Elias Woreda.*

Though the availability of a huge labour force is good for one's country economic development, it is not sufficient for the development of the country. It requires the efficient use of this resource unless it will create a high burden on the country's economy. Studies show that effectively directed, infrastructure investments have a quick source of jobs [9]. The data obtained from Debre Elias woreda micro and small scale enterprise development bureau, in the year 2020/21, the woreda has an estimated unemployed population of 7,112 from which 4,200 are males and 2,912 are females. Based on this and labour force data of the woreda, the woreda unemployment rate is more than 12%. This implies that given the woreda real situation (current employment opportunity) in which the population of the woreda is ever-increasing (Figure 2) and more than 6,800 labour forces will remain unemployed. Hence, among the benefits of the implementation of this project, is the employment creation of these unemployed labour forces in the woreda. In addition, if the woreda is connected with quality road, it will help to contribute a significant amount of labour force to the labour market.

2.4. Trade and Off-farm Activities

According to the study conducted by [20], from the total sample households of Debre Elias woreda, 36.5% of the households participated in off-farm, and trade (it includes petty trade such as grain trade, fruits and vegetables trade) activities. And also the result of the study by [4] shows that 40.8% of sample households have participated in non-farm activities while 59.2% did not engage in any form of non-farm activity employment and their employment was mainly from farming and other sources like off-farm activities and remittances. And also, the data obtained from Debre Elias micro and small scale enterprise office, there are 2,116 and 117 individual and cooperative traders respectively. And also, there are many traders who go into the woreda every day from various parts of the region as well as the country. These many merchants, besides showing how much the woreda is productive, show how much traffic congestion of the woreda

will be. All these make the implementation of the road project highly demanded.

2.5. Natural Resource and Minerals

Ethiopia has one of the largest dry forest and woodland resource bases in the Horn of Africa, predominated by diverse *Acacia*, *Boswellia*, *Commiphora*, and *Sterculia* species, with an estimated annual production potential of over 300,000 tonnes of commercial gums and resins. However, until recently, Ethiopia's gum/incense export share is still negligible (1%) world export and 28% of total Africa's export. Over 60 gum and resin-bearing species are found in the country [16]. Besides its high agricultural productivity and potential as well as great labour force contribution, Debre Elias woreda has various types of natural resources and minerals such as gums and resins, sand, granite, marble, coal, quartz, iron, and others. Especially this woreda is the source of industry and construction minerals such as granite, quartz, and sandstone with coverage of more than 4500 ha, 3000 ha, and 4800 ha respectively.

Collection and processing of natural gums is a labour-intensive activity that involves a huge labour resource, and hence offers off-farm employment opportunities for thousands of local people. Debre Elias woreda is endowed with various chief gum and resin-producing tree species. In the year 2018/19 to 2020/21 more than 1,556 quintals of natural gums and resins was produced which is used for local consumption in various parts of the country. Despite the enormous socio-economic importance of these natural products, and gums and resins production potential of the woreda, according to the information we received from the woreda, there are no gums and resins produced by the woreda for export. This shows how much the country is not using resources of the woreda. But if we make full use of this woreda capacity it is not hard to imagine how much foreign exchange can bring in foreign exchange. The gum resin sector in Ethiopia is playing a significant economic role both at the local and national levels.

Table 7. Natural gums and resins.

| year | production per quintal |
|---------|------------------------|
| 2018/19 | 264.26 |
| 2019/20 | 349.44 |
| 2020/21 | 942.88 |

Source: Debre Elias Woreda Agricultural Bureau.

Moreover, though the woreda organized investors and youths to produce the most abundant natural gums and resins in the woreda, it could not get the benefits it deserved from the wealthy woreda because the woreda did not have access to the central and international markets. According to the East Gojjam Zone Natural Resources Bureau, incense and gum is produced on 4,387 hectares of land in 2019/20. However, experts in the woreda say that the woreda's incense and gum production has not yet been efficiently utilized and that the woreda could make a significant contribution to the country and the region if a good asphalt road is built and

investors invest in the sector. Therefore, if this asphalt road is built, it will contribute a lot to attract many local and foreign investors and use all these resources.

2.6. Investment, Tourism and Service

Tourism has become an important industry over the last few decades, and its economic impact, including direct, indirect, and induced effects, has been enormous. Studies show that tourism destinations and accessibility can be improved by developing the transportation infrastructure network. Because new modes of transportation (high-quality road) have revolutionized the tourism industry by improving distance-travel capabilities, travel speed, travel time, and comfort level. For example, the distance from a tourist's place of origin to the desired destination can be reduced by adding a direct link between the two locations within the transportation network [5, 12, 17]. Debre Elias Woreda is endowed with various man-made and natural tourism sites that can benefit itself and the region as well as the country if properly utilized. For example, Debre Elias woreda is the location of very historical and interesting tourism sites like:

- 1) Forty-four Ponds
- 2) Debre Elias Church
- 3) Debre Genet Abo Church
- 4) Trinity Monastery
- 5) Abba Fekih Yasin Grave
- 6) Nile hot springs
- 7) Abba Tekle-Alpha Pillar and other.

Let's take a look at some of these that are important to the tourist flow.

i. Debre-Elias Church

Debre Elias Church is one of the most historic places found in Debre Elias Woreda of East Gojjam Zone and visited by many visitors daily. The church is located at 42 km from Debre Markos town. Debre-Elias Church was founded in the 15th century, during the reign of Emperor Zara Yaqob in 1466 E.C. Debre-Elias Church has been a center and birthplace of teachers teaching melody, poetry, composition, interpretation of books, and others.

Debre Elias Church is a place of great men who are famous in our country and in the world. This place is home to people like Kegn Geta Yoftahe Nigussie, Dr. Hadis Alemayehu, Abune Theophilos, Melaku Begosew, Dr. Esayiyas Aleme Engida, and other scholars. Debre Elias Church is the site of the stones of the two bridesmaids. Legend tells us these two stones were the bridegroom (i.e. husband and wife) but God had turned them into stones in their mistakes related to religious issues. A large number of visitors come to visit these stones and this historic church every day. However, the number of people who travel to the site to celebrate the anniversary of December 1 E.C. is beyond words.

ii. Debre Genet Abo Church

Debre Genet Abo Church is located 12 km southwest of Debre Elias, the capital of Debre Elias woreda. This church is called Tibe Abo and got its name Debre Genet on June 15, 1886 (E.C). The location of this church is also the birthplace

of King Tekele Haimanot who was the supreme ruler of Gojjam and Kefa. And, in addition to the daily visitors to this historic church, there are also a large number of visitors who come to the site to celebrate the march 5th (E.C) annual celebration.

iii. The Abba Fekih Yassin Grave

The Abba Fekih Yassin Grave is located on the hill of a particular place called Yemezezn approximately 10 km from Debre Elias. Fekih is their title, which means the spiritual father of a scholar of Islam. Abba Fekieh Yassin was considered a saint in the area and he was the main reason for the establishment of a shopping mall in that place in the 19th century. According to Citibiki (English scholar), the mall was a major center for traders from Metema to Metsiwa, and it was a place where many Muslim traders came from all over the world. And the place where Abba Fekih Yassin buried is in the same place as the mall was established. Although there are currently no Muslim societies in the area of Abba Fekih Yassin Grave, the site is protected and revered by Christians. Visitors to this holy place come daily from Shoa, Welega, Gojjam, Harar, Dire Dawa, and other parts of the country. Moreover, thousands of people from all over the country and around the world flocked to the site to celebrate the annual celebration on October 16 E.C.

iv. Nile Hot Springs

The Nile hot springs are located 47 km west of Debre Elias town. These hot springs flow east of the Nile River to the west and merge with the Nile River. These hot springs have amazing properties that they erupt out inside the dry rock. There are red, blue, white, and other colors when they are on the rock. But when they are held in the jar, they have a regular watercolor. From January to April 30 E.C, many parishioners flock to the area to be baptized.

According to the zonal culture and tourism bureau, there are a lot of people flocking to the woreda to visit places mentioned above and others. For example, if we see the first half of this year (2020/21) tourism inflow of the woreda, more than 20,800 tourists have traveled to the woreda. Among these tourists, the lion share (83.42%) was the number of visitors who attended the baptismal service, as well as attend religious ceremonies. The next and most important part of the visit is the regular visit. These visitors come from different parts of the country and around the world to visit the historical and wonders of the woreda and are called destination visitors. These visitors come primarily to visit some of the most popular tourist attractions in the woreda mentioned above.

Table 8. Tourism Inflow to the Woreda for the Last Six Months (July 1 – December 30 E.C).

| Category | Gender | | | Percentage share |
|------------------|--------|--------|-------|------------------|
| | Male | Female | Total | |
| Regular | 1803 | 836 | 2639 | 12.6674 |
| Religious issues | 8534 | 8845 | 17379 | 83.42053 |
| Health purpose | 472 | 343 | 815 | 3.912063 |
| Total | 10809 | 10024 | 20833 | |

Source: East Gojjam Zone Tourism and Culture Office.

Moreover, according to the East Gojjam Zone Culture and Tourism Office, more than 395,162 domestic tourists visited the woreda between 2017/18 and 2019/20. All of these show how important it is for the Ethiopian economy if properly managed. But it should be noted that tourism inflow in the year 2019/20 is under COVID-19 which highly affected the tourism sector. And also, it shows how much the traffic and congestion of the woreda. Therefore, it is necessary to build the Debre Elias- Yewula road, which can connect the woreda to other parts of the country.

Table 9. Domestic Tourist Inflow to Debre Elias Woreda.

| Year | Number of tourist inflows |
|---------|---------------------------|
| 2017/18 | 36983 |
| 2018/19 | 67101 |
| 2019/20 | 291078 |

Source: Debre Elias Woreda Culture and Tourism office.

According to the information obtained from east gojjam zone tourism and culture office, though the Debre Elias woreda has higher tourism potential among woredas in the zone, Debre Elias woreda has actual tourist inflow next to Enemy, Enebsa Sar Mider, and Enarj Enawuga woredas. There are also more than 108 service provider institutions such as hotels, health facilities and other service providers in the woreda. It is clear that these institutions contribute to the flow of tourists. However, evidence shows that the current investors are relatively low compared to the potential of the woreda. Based on the information from the east gojjam zone tourism and culture office, this is due to low road infrastructure.

2.7. Gender Issues

To understand the role of road infrastructure on gender and related issues it needs to understand the gendered nature of poverty. Although family life activities are shared by both sexes, the burden is unbalanced and women have higher roles on household management in Ethiopian culture. Studies show that gender is one of the main factors influencing resource ownership which may be due to different socio-cultural values and norms. For instance, female-headed households have less access to various agricultural inputs (credit, land, oxen...) and they also have less access to credit than men. This limits their ability to purchase seeds, fertilizer, and other inputs needed to adopt new farming techniques [16]. It recognized that women have less access to productive resources and hence probably low income. Hence, women are more likely to lack access to means of transport or income for travel. They may also face significant physical barriers (e.g. pregnancy) to use some types of transport (e.g. bicycle) or to travel alone outside the household or community [3]. Moreover, [8] ascertains that women, particularly poor women are often at risk by the lack of or poor quality of transport services. Reliable transport seems particularly important in encouraging girls to continue their education, and in enabling women to participate in social and economic activities, outside the village. Women are also seen

to have a higher motivation to ensure that access is maintained not only to ensure produce gets to market but also for children to attend schools, access to health care, and opportunities to buy consumables. Hence, improved road connectivity can bring great benefits for women.

As the quality of roads improved, transportation services increase, travel becomes faster and more convenient, and women and girls can travel safely further from home. Figure 3 below shows that out of Debre Elias's 107,023 population by 2013 E.C (2020/21 G.C), more than half (51%) are women. Therefore, constructing this road is vital to reduce maternal death and empower women and fulfill the country's development strategies.

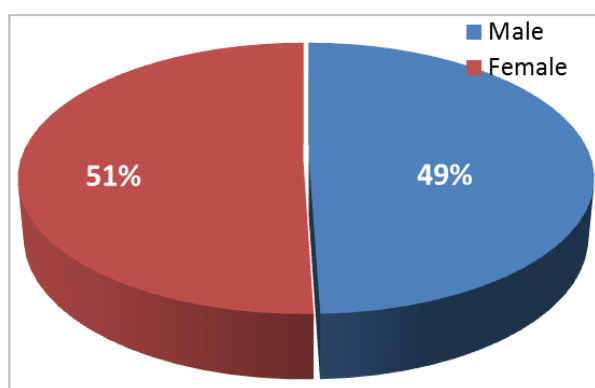


Figure 3. Proportion of men and women.

Table 10. Traffic Flow of Debre Elias Woreda in First Two Weeks of March 2021.

| Week | Type | Level | Number of vehicles |
|-----------------|-----------------------|-------|--------------------|
| 1 st | Medium (24-44 person) | 1 | 135 |
| | | 2 | 45 |
| | | 3 | 264 |
| | Higher (45-60 person) | 1 | 1 |
| | | 2 | 4 |
| | | 3 | 9 |
| 2 nd | Medium | 1 | 140 |
| | | 2 | 120 |
| | | 3 | 232 |
| | Higher | 1 | 7 |
| | | 2 | 3 |
| | | 3 | 5 |

Source: East Gojjam Road and Transport Office.

2.8. Traffic Congestion Analysis and Forecast

The huge increase in vehicular population creates traffic congestions on roads. Thus, to reduce traffic bottlenecks, the creation of new road infrastructure as well as improvement of existing ones has long-term economic and social benefits [13]. The traffic volume of Debre Elias woreda is more than 800 vehicles per day including motorcycle, light truck, medium truck, heavy truck, minibusses, Bajaj, and motorcycles. The information given in Table 10 shows that 965 various levels of public buses are going to the woreda in the first two weeks of March 2021. This implies that more than 42,000 passengers went into and out of the woreda in the first two weeks of March 2021 for various purposes such

as tourism, religious ceremony, trade activities, and others. This means that more than 3,000 travelers travel to or from the woreda each day. However, this data might be more than double in the pick seasons such as from the mid of December to the end of February, and religious ceremony seasons like the first two weeks of August.

3. Community Participation and Commitment to the Project

Experiences show that the best and efficient results are obtained only when communities are actively participating in the implementation of projects. And planners have to realize that community participation, among other things, is essential for projects to be successful [11, 18]. Hence, it is necessary to access the willingness of the community for the intended project before the project is implementing. In simple terms, community participation refers to the willingness and involvement of the people in a community in development projects. The emphasis on community participation in new projects implies that communities will be involved and responsible for running and maintaining the facilities built as part of the project. And the involvement and responsibilities of communities often vary. For example, some communities contribute only labour for the running of a project, while others contribute financially as well. Thus, any project that requires people in a community to be responsible for anyone or more of the above activities may be called "participatory". This means that communities have both the right and the responsibility to be involved in the planning and implementation of the project.

In recent years, there have been increasing interests in participatory approaches, which have been developed to improve the well-being of communities and to make the development programs more effective, more successful, and sustainable. In addition, there is evidence that development efforts that involve beneficiaries (communities) in the development projects at the beginning of the programmes make these programmes more successful than those which do not [7]. That is why prior to the implementation of a certain project, planners assess and evaluate Community Participation and Commitment to a Project. The writer of this manuscript tried to make a tracer study related to community participation and willingness regarding the project. Among the survey respondents, more than 70% said that they would be prepared to contribute labour for the construction of the roads. And also, 15% of the respondents even happy to contribute some finance for the construction of the road. This shows that community involvement is more than labor contributions. In general, all of the above factors are more than enough to build the Debre Elias-Yewula road.

4. Conclusion

An improvement in the quality and provision of roads promote for an economy development and increase personal

well-being. However, many of Ethiopian rural towns and villages are not well-connected with road infrastructure. As we have tried to discuss, Debre Elias Woreda has a great potential in various sectors including agriculture, human resources, minerals, and natural resources, tourism, and others. But due to the lack of quality road infrastructure, the country has not used all the resources that the woreda can provide. This study tried to show how much it can benefit the country if the proposed road project is implemented. Because the construction of Debre Elias-Wola road will help to connect Debre Elias Woreda with various domestic markets as well as the international market and which help to utilize the potential of the woreda. Therefore, with these various potentials and resources, Debre Elias woreda will contribute a lot to the country if the intended road project is implemented.

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