SOCIO-ECONOMIC ASSESSMENT
Tigray IAIP and RTC

Report Produced by:
WSP in collaboration with Zereu Girmay Environment Consultancy (ZGEC)

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INTRODUCTION

This Chapter of the report provides a demographic, cultural and economic overview of the Project Area and also describes the physical infrastructure and services available in the Social Study Area. The purpose of collecting this information is to provide baseline data for conducting the impact assessment and to monitor and measure changes against the potential future changes to the Social Study Area due to the presence of the Project.

Ethiopia is located in the Horn of Africa and it is bordered by Eritrea to the north and northeast, Djibouti and Somalia to the east and southeast, Sudan and South Sudan to the west, and Kenya to the south. It is the second most populous country in Africa (after Nigeria which has a population of approximately 179 million people); with a population of 97 million people (1) across a total area of 1.1 million.

As is previously mentioned, both the proposed Baeker IAIP and Mai Kadra RTC sites are located in the West Tigray Zone of the Tigray Region. The IAIP site is located within the wider footprint of the Baeker town and is 25 km away from the Humera town, the capital of the West Tigray Zone. Humera town is approximately 975 km distance from Addis Ababa.

The IAIP footprint in the West Tigray Zone will occupy approximately 258.62 hectares. The land planned for the IAIP development, was previously predominantly state-owned but used by local farmers for agricultural activities. After this project was taken forward, in early 2016 the Government initiated the resettlement process and to-date completed a survey of affected people.

Tigray is bordered by Eritrea to the north, Sudan to the west, the Afar Region to the east, and the Amhara Region to the south and southwest. Besides Mek’ele, major cities include Hawzen, Abiy Addi, Alamata, Mekoni, Adigrat, Adwa, Axum, Humera, Korem, Maychew, Qwiha, Shire (Inda Selassie), Wukro and Zalambessa.

1.1 SOCIAL AREAS OF INFLUENCE (AOI) – SOCIAL STUDY AREA

The Area of Influence (AoI) can be defined as the area likely to be affected by the proposed Project activities during the pre-construction, construction operations and closure / decommissioning phases. This area has been defined based on the IFC definition and is called Area of influence.

Given the nature of the Project and its anticipated impacts, the Project AoI for socio-economic aspects and the associated baseline description covers:

- The Baeker town for the proposed IAIP construction and operation activities;
- The Humera town for the proposed RTC construction and operation activities, and
- Areas potentially affected by cumulative impacts resulting from other potential or known developments at the time of the ESIA, further planned phases of the Project or any other existing circumstances.

Social activities outside of the proposed AoI’s have been scoped out during the scoping phase and are not discussed in this Chapter.

1.2 ADMINISTRATIVE AND DEMOGRAPHIC ENVIRONMENT

The Tigray Region includes seven administrative zones, and the project area falls under the West Tigray (or Mi’irabawi) Zone and the Kafa Humera woreda which covers Humera and Mai Kadra towns (see Figure 1 below for further details of the project area location). The Baeker IAIP project area is located in close proximity to Humera town and thus is close to the border with Eritrea (just seen on the map), while the May Kadra RTC project area is located close to the border with Sudan.
Overall, the Tigray Region is further divided into 52 woredas (districts) which, under Ethiopia’s decentralised system of government, have their own governing councils. The region has an estimated area of 53,638 km² and a total population of 5,056,000 people (CSA 2007 census data projected for 2015). Important cities and towns in the Tigray region include: Adigrat, Axum, Shire, Humera, Adwa, Alamata, Wukro, Maychew, Shararo, Korem, Hawzen, Mekoni and Zalambessa. Mekelle is the capital of the region.

Based on the 2007 Census conducted by the Central Statistical Agency of Ethiopia (CSA), the Tigray Region has a population of 4,316,988, of whom 2,126,465 are men and 2,190,523 women. Urban population of the region makes 19.5% of the total population.

Humera is a city in Kaffa Humera woreda in the Tigray Region of Ethiopia and is located at an elevation of 585 metres above sea level where the Tekezé river runs to the west. Humera is the important Ethiopian city south of the border with Eritrea and Sudan, and is considered to be a strategically important gateway to Sudan. Based on the CSA population projections for 2015, the total population of Humera Town is 32,569 people.

Based on the national census data, with an area of 153.03 square kilometers, Humera has a population density of 212 people per 1 km². A total of 49.84% households were counted in this woreda, resulting in an average of 6,360 persons to a household. The majority of the people in the woreda confirmed they practiced Ethiopian Orthodox Christianity, with 93.18% reporting that as their religion, while 6.45% of the population were Muslim.

1.3 MIGRATION PATTERNS

Ethiopia is experiencing a strong economic growth and migration trends. The reports of the Ministry of Labor and Social Affairs (MoLSA) registered 460,000 legal migrants between September 2008 and August 2013 of whom 94% were women domestic workers, 79% travelling to Saudi Arabia, 20% to Kuwait and the rest to Dubai and other countries.

One of the major reasons mentioned was shortage of land that can be made available to the youth. In rural Tigray, especially in densely populated areas, the youth cannot get land for farming. Only vacant land whose owners are died is transferred to the youth on the basis of age of applicants. However, the amount of such land available for internal re-distribution among community members is limited.

Local communities are more and more convinced that irregular migration is making the difference. The better well-being reached by families with migrant’ members are pushing other families to take the same decision.
This situation overlaps with the dynamic of Eritrean refugees. Four refugee camps are located in Tigray, and secondary movements are very common inside the country and towards external destinations.

1.4 LAND USE, LIVELIHOOD AND VULNERABILITY

In Ethiopia all land belongs to the State; whilst land can be leased to private individuals, they cannot own it. The Constitution provides for equal access, use, transfer and administration over land. It grants access to agricultural land for rural residents, and allows all inhabitants to utilise the land for farming. Farmers and pastoralists could be granted lifetime ‘holding rights’ giving them rights to farm the land except for its sale and mortgage.

Land is state property in Ethiopia and citizens have user rights. Inheritance of user rights is allowed, but land use rights may not be mortgaged. Unlike the rest of the country, the Tigray regional state has a gender-progressive land proclamation and progressively implements it. Here, land registration took place very early and both husbands and wives have equal rights to land: land is registered under both of their names and upon separation and dissolution of marriage; they take away equal shares of the land. However, this depends on communities, as some local communities practice polygamy, and in such families the names of the husband and his first wife are often recorded in the land certificate.

Tigray, the northernmost region in Ethiopia, is most known for its serious land degradation problems. Much of the woodland in Tigray started to disappear in the early 1960s under pressure from the rapidly growing population. In the region, a short and variable rainy season in combination with degraded soils resulted in low soil productivity and frequent crop failures. As a result, the local population is structurally dependent on food aid.

In the last two decades, farmers in Tigray made significant environmental rehabilitation efforts. Among the recent efforts towards enhancing agricultural development in the region, rainwater harvesting has been widely adopted because supplementary irrigation is essential for crop production during dry spells.

The Regional land use and land cover details are presented in Table 1.

Table 1: Land use and Land Cover in the Tigray Region, Source – Ministry of Agriculture

<table>
<thead>
<tr>
<th>Land use/Land cover Type</th>
<th>Area (ha)</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cultivated Land</td>
<td>1,434,792</td>
<td>28.21</td>
</tr>
<tr>
<td>Grassland</td>
<td>1,158,681</td>
<td>22.78</td>
</tr>
<tr>
<td>Bush and shrub land</td>
<td>1,840,918</td>
<td>36.20</td>
</tr>
<tr>
<td>Woodland</td>
<td>295,082</td>
<td>5.80</td>
</tr>
<tr>
<td>Natural forest</td>
<td>9,407</td>
<td>0.18</td>
</tr>
<tr>
<td>Afro alpine land</td>
<td>670</td>
<td>0.02</td>
</tr>
<tr>
<td>Exposed rocks and soil</td>
<td>335,569</td>
<td>6.60</td>
</tr>
<tr>
<td>Water bodies and wetlands</td>
<td>8,053</td>
<td>0.16</td>
</tr>
<tr>
<td>Urban development</td>
<td>2,610</td>
<td>0.05</td>
</tr>
</tbody>
</table>

1 FAO: Country Profile, Ethiopia
2 Property Rights and Resource Governance in Ethiopia, USAID, published in 2013
3 Evaluating Smallholder Agricultural Land Uses in Northern Ethiopia, published in 2015
<table>
<thead>
<tr>
<th>Land use/Land cover Type</th>
<th>Area (ha)</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOTAL</td>
<td>5,085,782</td>
<td>100.00</td>
</tr>
</tbody>
</table>

In Tigray, agriculture contributes around 57% to the regional GDP, of which 36% is from crop production and about 17 and 4% is from livestock and forestry respectively. Rainfed crop production is the main economic activity for over 85% of the population, supplemented by livestock rearing under mixed-subsistence systems. The average land holding in the highlands of the region is less than a hectare. The main crops cultivated in the region are wheat and barley. Small amounts of vetch, teff and lentils are produced to supplement income. The decision to grow short cycle crops is to some extent influenced by the oftentimes unreliable rainy season.

During field visit a few number of vulnerable groups, like female-headed households, the poor’s, the elderly persons etc. whom needs special care were observed in the project area. But during the site visit it was not possible to identify the exact numbers of vulnerable groups. The vulnerability element was studied during the household survey carried out by the WSP team, see results below.

### 1.5 WOMEN AND LAND OWNERSHIP

The access to resources of the households has affected the control over produce of women’s land. Higher percentages of female headed households go for sharecropping compared with male headed households, because women for a number of reasons cannot always cultivate the land themselves. As such, they often can find themselves in a tricky scenario when the land is not cultivated as sharecroppers get sick, thus depriving the woman-land owner of income. As a result, women-led households often rely on community help and the lack of resources makes them likely to be food insecure or trapped in poverty.

At the same time, women in Tigray know the constitutional rights, e.g. that they have to get their share of land during a divorce. In practice, however, women could experience problems in claiming their land due to lack of legal court system, lack of clear documentation and lack of financial ability of the women to get a lawyer. Lack of independent certificates to the land determines the women control right to the land. Women in female headed households have an independent certificate to the land but not most women in male headed households.

### 1.6 EDUCATION

Education plays a crucial role in the process of social and economic transformation and stands as a key poverty reduction. Taking into account the role education plays in the socio-economic development, the Ethiopian government has paid great attention to promoting education in various regions of the country including the study project area. Accordingly, the project area regional bureau has made also various efforts for the developments of education in the region to this end, general project Woredas are no exception.

There is a primary school (grade 1-8) and secondary school (grades 9-10) in Baeker. The primary school caters for 133 children and has 4 primary teachers, while the secondary school has over 250 pupils looked after by 5 teachers. Based on the Census data, 19.28% of the Kafta Humera woreda population were considered literate, which is greater than the Zone average of 9.01%. Over 25% of children aged 7–12 in woreda were in primary school, which is greater than the Zone average of 11%.

However, based on the Demographic and Health Survey in Ethiopia carried by Unicef in 2014, only 15% of surveyed females in Tigray received education after primary school, while 85% of surveyed females received either some primary education or no primary education. For surveyed males under the same Unicef survey, 20% of surveyed males completed primary education and received post-primary education, while around 80% of surveyed males received either some or no primary education.

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4 Bureau of Planning and Economic Development, Ethiopia, 2011
5 Gender and Land Rights in Tigray, published in 2012
1.7 **HOUSEHOLD INCOME AND EXPENDITURE**

According to data obtained from the Finance and Economic Development Office within the general project areas, the household income level is low in the project area. Accordingly, the figures for low, middle and high levels in Ethiopian Birr are <150, 500-1500, and >1500. Cash income sources are mainly from sales of agricultural products (Sales of crops, livestock and their produces), which are the source of more than 80% of the cash income of financially comfortable households in the project area.

1.8 **EXISTING INFRASTRUCTURE**

According to the CSA, as of 2004, 53.99% of the total population had access to safe drinking water, of whom 42.68% were rural inhabitants and 97.28% were urban.\(^6\) Values for other reported common indicators of the standard of living for Tigray as of 2005 include the following: 31.6% of the inhabitants fall into the lowest wealth quintile; adult literacy for men is 67.5% and for women 33.7%; and the Regional infant mortality rate is 67 infant deaths per 1,000 live births, which less than the nationwide average of 77; at least half of these deaths occurred in the infants’ first month of life.\(^7\)

Humera is served by Humera Airport. Ethiopian Airlines serves the airport with destinations to Addis Ababa and Mek’ele. The opening of the airport was aimed at increasing the agricultural sector in the region as well as providing commercial air service in Humera.

1.9 **NATIONAL HOLIDAYS**

A number of religious holidays and national celebrations will take place during the survey window (July-October 2017), as shown in Table 2. In case of an unplanned event, it is expected that support and emergency assistance may be less responsive during national holidays.

**Table 2: National Holidays in Ethiopia, 2017**

<table>
<thead>
<tr>
<th>Month</th>
<th>Date/Week day</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>07 / Saturday</td>
<td>Ethiopian Christmas</td>
</tr>
<tr>
<td>January</td>
<td>19 / Thursday</td>
<td>Orthodox Epiphany</td>
</tr>
<tr>
<td>March</td>
<td>02 / Thursday</td>
<td>Victory of Adwa</td>
</tr>
<tr>
<td>April</td>
<td>14 / Friday</td>
<td>Ethiopian Good Friday</td>
</tr>
<tr>
<td>April</td>
<td>16 / Sunday</td>
<td>Ethiopian Easter</td>
</tr>
<tr>
<td>May</td>
<td>01 / Monday</td>
<td>International Labour Day</td>
</tr>
<tr>
<td>May</td>
<td>05 / Friday</td>
<td>Patriots’ Victory Day</td>
</tr>
<tr>
<td>May</td>
<td>28 / Sunday</td>
<td>Downfall of the Derg</td>
</tr>
<tr>
<td>June</td>
<td>25 / Sunday</td>
<td>Eid al-Fitre</td>
</tr>
<tr>
<td>September</td>
<td>01 / Friday</td>
<td>Eid Al Adaha</td>
</tr>
<tr>
<td>September</td>
<td>11 / Monday</td>
<td>Ethiopian New Year</td>
</tr>
</tbody>
</table>

\(^6\) “Households by sources of drinking water, safe water sources” CSA Selected Basic Welfare Indicators, 2012

<table>
<thead>
<tr>
<th>Month</th>
<th>Date/Week day</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>September</td>
<td>27 / Wednesday</td>
<td>Meskel</td>
</tr>
<tr>
<td>December</td>
<td>01 / Friday</td>
<td>Moulid</td>
</tr>
</tbody>
</table>
2 SOCIO-ECONOMIC PROFILE OF PEOPLE IN THE PROJECT AREA (BASED ON WSP SURVEY)

2.1 METHODOLOGY
A team of local specialists guided by the WSP team carried out a household survey in Baeker and Mai Kadra towns, where based on the resettlement process initiated by authorities, 40 people will be economically and physically affected: 31 person was identified as affected by the development of the Baeker IAIP and 9 people were identified as affected by the development of the Mai Kadra RTC.

The WSP team was targeting mainly those people who identified themselves as being affected by the project (and therefore involved in the resettlement process initiated by local authorities) and who still reside at the site. The WSP team thus interviewed in total 20 people who are affected by the project and currently reside in the vicinity of either the Baeker IAIP or Mai Kadra RTC sites.

The questions posed to the interviewees were aimed at collecting the relevant household and demographic information of not only the person who was interviewed but also members of his family, thus collecting the data on the wider circle of local residents.

The WSP team ask the local authorities to provide the details of their survey when they identified the 40 affected people and estimated the compensation amounts due to them and although the compensation details have been received, the WSP team still is waiting for the local authorities survey details, which will be incorporated in the WSP reports as soon as such data is received.

2.2 GENDER AND AGE
Both women and men were encouraged to participate in the household survey which resulted in approximately 70% and 30% of the questionnaires being answered by men and women, respectively.

All of the respondents chose to disclose their age. 20% of the questionnaires were answered by people who were between 24-35 years of age, 30% were between 36-45 year olds, 20% were between 46-55 year olds, 25% were between 56-65 year olds and 5% were >66. Around three quarters of all respondents were noted as being in their mid-20s to mid-50s (70%) (see Figure 2 below).

![Figure 2: Respondents’ gender and age](image)

Of the respondents, 50% were residing in the Baeker town for the proposed IAIP and 50% were residing in the Humera town for the proposed RTC which helped to create a balanced insight into the affected people at both sites.

2.3 EDUCATION
Two thirds of respondents within the 56-65 and >66 age group reported having had no form of education (67%). However, those in the 24-35 year age bracket had either a primary education (25%)
high school education (25%) or a Higher/University Degree (25%), with a quarter of 24-35 year old respondents having received only some or no primary education (25%).

The educational profile has been further enhanced by the additional analysis of the education level of the interviewee’s family members within each household visited. The extended collection of the education data on other family members revealed that 20.4% had not finished their basic schooling or had no education. This compares favourably with the reported Tigray regional statistics, with 85% of surveyed females and 80% of surveyed males receiving only some or no primary education.

In contrast, a large proportion of the family members (61.1%) included in the surveys finished a primary school at a minimum.

The surveys showed that a much lower percentage of family members went on to further education, with 11.1% and 7.4% as having a high school education and a Higher/University Degree education level, respectively. There were no respondents reporting having a Technical Diploma. In summary, low education attainment levels were noted among the interviewed affected people in the project area, where the majority of interviewees and their immediate adult family members mostly finished a primary school.

### Education Level of Respondents

![Education Level of Respondents](image)

**Figure 3: Reported educational level among respondents**

#### EMPLOYMENT

The employment profile also has been further enhanced by asking about the employment situation of other family members, in addition to the employment data on interviewees themselves. Over half (55.6%) of the respondents defined themselves as a farmer, while 15% of the respondents defined themselves as either a civil servant (7.5%) or employed within a business or trade (7.5%).

All of the respondents’ spouses were employed, with 75% stating farming as their primary occupation. The questionnaires showed that 10% of the respondents were unemployed. This is a significantly low level of unemployment that was expected in the project area.

### Employment

![Employment](image)

**Figure 4: Reported employment among respondents**

In addition, 26% of the interviewees gave their occupation as ‘Other’. Other occupations were mentioned, too including a daily labourer, student, etc.
2.5 ASSET OWNERSHIP

Although most of the respondents have irregular and unpredictable income (derived mainly through agricultural activities), ownership of electronic goods in the interviewed households was high.

The majority of the respondents stated that they owned the following assets: a mobile phone was owned by 95% of the respondents, a television and satellite dish by 85%, a refrigerator was owned by 50% and a radio was also owned by 50% of the surveyed households.

However, 90% of respondents have no access to the internet in their homes and none of the respondents had access to a washing machine in their homes.

85% and 70% of the surveyed respondents are currently living in the houses or have land that belong to them (owner-occupiers), respectively. Furthermore, 75% owned goats or chickens, which demonstrates how important animal husbandry is for supplementary income in the survey area.

Personal transport ownership is low, with only 10% of respondents stating they owned a car and another 10% of respondents stating they owned a bike. It should be noted that one of the households participating in the questionnaire owned both a car and a bike, indicating that personal transport ownership is even lower than the percentages originally suggest.

The survey asked respondents to list any areas of cultural heritage within the area. Exactly a quarter of the respondents (all from Baeker town) stated that there were areas of cultural significance located nearby, whilst 75% of respondents stated that there were not. Areas of cultural heritage reported included the Siye Park, Sheraro National Park and the Kalay Agob (Holly Water); the distance of these areas from the wider project area ranged from 5km to 40km. Respondents were also asked the distance to the nearest cemetery from their home, this ranged from 0.2km to 1.5km, with an average of 1.07km.

2.6 HOUSEHOLD INCOME AND EXPENDITURES

Questions about people’s income and expenses are traditionally challenging and a high percentage of people often opt out and chose not to answer such questions. In the case of this socio-economic survey, the survey team made an effort to engage with people and explained at length why this data is being collected. As a result all of the respondents agreed to share the details on their income. This is a much better response rate than could have been expected in such a survey.

All of the respondents indicated that they derive most of their income from farming/ agricultural activities or from formal employment (civil servant, business or daily labourer). In addition, 35% of interviewed households supplemented their income from other economic undertakings. The alternative forms of income (separate from occupational/salaried employment) were reported by the respondents who regularly source their income from one or more of these activities, as detailed in Table 3 below.

<table>
<thead>
<tr>
<th>Alternative Source of Income</th>
<th>Households receiving income from these activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chicken and Goats</td>
<td>25%</td>
</tr>
<tr>
<td>Money from Family Members</td>
<td>10%</td>
</tr>
</tbody>
</table>

Among the respondents, the average household income from all livelihood sources and obtained from all working age family members totals to approximately 37,947 Birr/year (equivalent to $1,392. Nov 2017 exchange rate). The estimated annual per capita (per person) household income data from the WB (2016) show that an average per capita annual income in Ethiopia is $660/person. Assuming that there are two working persons in an average household (statistically, 4.8 people per household in Ethiopia), the obtained income data is in line with the World Bank 2016 data.

When asked about their monthly expenditures, 55% of respondents indicated that they spend most of their monthly income on food. Thus, most of the people cultivating land in the project area, will be severely affected if their access to land is disrupted, leading to significant reduction of their income and in most cases, food expenditure.
The next most important expenditures for the respondents appeared to be ‘other’, an answer given by 35% of respondents. All of the answers given as ‘other’ were relating to farming or fertiliser expenses, which ranged from 330 to 5,000 Birr/month depending on the size of the cultivated plot. Other expenditures included ‘utilities’ which was given by 20% of respondents and ‘housing’ which was given by 10% of respondents.

2.7 SOURCES OF FRESHWATER

It was reported that only 5% of the households obtain freshwater from the lorry that regularly makes water deliveries. The main source of freshwater was identified as a water pump with 50% of households stating it as their main source, whilst 45% reported that they attain freshwater through ‘other’ resources.

![Freshwater Sources](image)

**Figure 5: Sources of freshwater**

2.8 HEALTH SITUATION

25% of the respondents indicated that at least 1 member of their household has a disability or an illness. Half of the disabilities within the households were noted down in the questionnaires as handicapped and the half attributed the disability to mental disorder. It should be noted that a hearing disability was mentioned in addition to a mental disorder for one family member.

The respondents listed the following top three diseases to have affected members of their household in the past three years: malaria, typhoid and flu.

The survey asked questions regarding recent deaths and births in families. All of the respondents stated that there had been no deaths in the past year whilst 5% reported that there had been one birth in the household. Although this is a somewhat low fertility level, this is in line with the recent research into fertility levels in Tigray, published in 2014.

2.9 PROJECT EXPECTATIONS

All respondents were aware about the Project, of which most (75%) of them have primarily learnt about through a local authority announcement, but around a third had learned about the Project through mass media, as well as the local community.

90% of the respondents had a positive attitude towards the Project. The positive opinions were largely reported to be due to expectations related to an increase in the number of available jobs as well as the Project contributing to the development of area and market for agricultural products.

Only 10% of respondents reported expecting some negative impacts from the Project; these included worries about environmental pollution, but mostly regarding the displacement of farmers with little or no compensation.

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8 Having fewer children makes it possible to educate them all: an ethnographic study of fertility decline in Tigray, Ethiopia (2014), published in Reproductive Health Matters, by Thera Mjaaland
SOCIO-ECONOMIC RECEPTOR IDENTIFICATION AND CLASSIFICATION

It is estimated that the developments horizontal infrastructure will take an initial 2 years for construction. As sites get sold off, the construction will continue for a further 15 years. Estimation of employees at construction and operation will be difficult to predict since each land parcel could be used by various industries. It is planned that the temporary worker facilities/camps will be located on the north extremities of Baeker IAIP and within Mai Kadra for the RTC.

The identified potential socio-economic receptors were identified based on the information provided about the project, and also as a result of site reconnaissance and household surveys in the project area. In this instance, the Project receptors are the local communities located within the Baeker IAIP area and Mai Kadra RTC area that may be impacted or influenced by the Project (as a result of their proximity to the Project site and/or associated infrastructure).

Based on the available information and given the nature of the project-related anticipated impacts, the receptors for social impacts include the following:
- Baeker town communities
- Mai Kadra town communities
- 31 individuals affected by the resettlement triggered by the development of the Baeker IAIP, and
- 7 individuals affected by the resettlement triggered by the development of the Mai Kadra RTC.

The receptors for potential socio-economic and health impacts also include workers who will be living in the temporary accommodation facilities adjacent to the Project site.

Table 4 below summarises the socio-economic and health impacts that were identified.

<table>
<thead>
<tr>
<th>Potential Impacts</th>
<th>Receptors and Stakeholders</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employment and Economy</td>
<td></td>
</tr>
<tr>
<td>▪ Increase in local employment opportunities</td>
<td>▪ Local government</td>
</tr>
<tr>
<td>▪ Increase in business development opportunities</td>
<td>▪ Local communities</td>
</tr>
<tr>
<td>▪ Increase in business development opportunities</td>
<td>▪ Local businesses</td>
</tr>
<tr>
<td>Livelihoods</td>
<td></td>
</tr>
<tr>
<td>▪ No access to agricultural land due to land acquisition caused by the project which as a result will negatively affect local farmers’ livelihoods</td>
<td>▪ Local farmers and their families</td>
</tr>
<tr>
<td>▪ No access to agricultural land due to land acquisition caused by the project which as a result will negatively affect local farmers’ livelihoods</td>
<td>▪ Local communities</td>
</tr>
<tr>
<td>Community Safety and Security</td>
<td></td>
</tr>
<tr>
<td>▪ Increased potential for safety issues associated with the presence of new infrastructure</td>
<td>▪ Local communities</td>
</tr>
<tr>
<td>▪ Increased potential for safety issues associated with the presence of new infrastructure</td>
<td>▪ Construction workers (including contractors)</td>
</tr>
<tr>
<td>Environmental Emissions</td>
<td></td>
</tr>
</tbody>
</table>
### Potential Impacts

- Increase in noise and vibrations
- Increase in dust leading to health implications

### Receptors and Stakeholders

- Local communities
- Foreign workers (including contractors)

#### Community Infrastructure and Services

- Increased pressure on community infrastructure and services

#### Social Networks

- Introduction of new people to the area potentially leading to changes in social structures
- Change in the skills set among local job-seekers

#### Given the nature of the project area and the identified potential social impacts which are not tied to any particular project component or facility (new employment opportunities, communicable diseases, etc) it is considered that attempting to address impacts by nature of impact is a more suitable approach which is significantly more conducive to effective management, mitigation and monitoring of social impacts.

As such, social impacts are presented below based not on the proximity to the development but the nature of the impacts and sensitivity of receptors. However, the proximity and relevance of project is cited, where appropriate.
ASSESSMENT OF IMPACTS

This section describes the potential impacts and consequences of interaction between the Project activities and receptors. Where significance of the impacts is assessed as moderate to major, mitigation measures, management and monitoring are proposed. The proposed mitigation and management measures will be implemented at the Baeker IAIP and Mai Kadera RTC sites and by their contractors.

The identified impacts include effects associated with in-migration. Rather than assessing in-migration separately, where in-migration is a contributing or driving factor for a particular impact, this is noted in the sections below.

4.1 EMPLOYMENT AND THE ECONOMY

Based on preliminary estimates, the construction stage of the Project will generate a range of new jobs/employment opportunities during construction and new jobs during operation. The estimated direct employment is presented in the table below based on the proposed phasing of the development. Although these are preliminary estimates and caution needs to be exercised when citing these numbers.

In addition, the proposed Baeker IAIP and Mai Kadra RTC sites will require goods and services throughout its lifecycle. There are opportunities for local businesses to provide these goods and services (e.g. catering for the workers camp, office-related supply opportunities and services such as cleaning, etc.). As a result, existing local businesses may expand or new businesses may be established locally to meet these demands – providing employment opportunities. This is referred to as indirect employment.

Table 5: Predicted Employment Numbers as a result of the operational phase IAIP and RTC in the Tigray Region

<table>
<thead>
<tr>
<th>Employment Type</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct employment</td>
<td>262,885</td>
<td>327,687</td>
<td>392,718</td>
<td>458,091</td>
<td>519,538</td>
</tr>
<tr>
<td>Indirect Employment</td>
<td>394,327</td>
<td>491,531</td>
<td>589,077</td>
<td>687,137</td>
<td>779,307</td>
</tr>
</tbody>
</table>

Source: MACE

Although employment numbers are not available for the construction phase, it is reasonable to assume that the number of people employed by the Project will decrease at the end of the construction phase (the construction process lasting approximately 15 years).

POTENTIAL IMPACT

The development will generate skilled and unskilled positions, with the number of unskilled positions dropping substantially after the construction period. Given that most working age local people are engaged in the agricultural farming activities, it is possible that the existing skills set among local people of working age would not always be a perfect match for the direct employment opportunities that will be created by the project.

Therefore, the developer should consider organising training to create new a skill set among local residents and also capitalising on some skills that are transferrable from the agricultural farming activities to the project in order to maximise local employment.

In terms of indirect employment, the realisation of opportunities will depend not only on the project, but also on the initiative and business abilities of local entrepreneurs. Given the potential on a much higher demand for new businesses in the region and the limited number of existing businesses, it is anticipated that the number of opportunities to create business development opportunities and/or indirect employment will be significant.

SIGNIFICANCE

The impacts on employment and economy that are likely to be triggered during the construction stages of the project would be positive, direct, regional, long-term (15 years of construction) and of
medium severity. The probability of the impacts is considered to be high because the project is a significant and strategic development in the area. The significance of these positive impacts on employment and economy is therefore considered to be major and as a major positive impact does not need mitigation.

The operational impacts on economy and employment are also considered to be positive, direct, regional, long-term and of low to medium severity (as the number of new jobs generated by the project would tail off at the operation phase). The probability of the impacts occurring is considered to be high. The significance of the impacts is considered to be moderate and as moderate positive impact does not need mitigation.

For transparency purposes, the social impacts are presented in Appendix A in a series of self-explanatory tables which if needed, could be used by the developer management in their reporting.

4.2 LAND ACQUISITION AND IMPACT ON LIVELIHOODS

Based on the information received, WSP team site observations and consultations with the affected people, 40 people will be affected during the construction stage of the Tigray IAIP Project, through both economic and physical displacement. It is worth noting that although all land in Ethiopia belongs to the state, a number of individual farmers either officially (through a land rental agreement) or unofficially (often, a verbal or no agreement), still cultivate land and grow crops on the plots in the project area. The local authorities in Tigray started the resettlement process a year ago. As a result, some affected people received compensation and moved on, while some either did not receive compensation or at the moment do not have plans to move. It is highly likely that the local authorities followed the national resettlement process and not best international practice, because the national and federal legislation on land acquisition does not cover, for example assistance to vulnerable people, consultations and agreement whether it is better to compensate certain families in cash rather than in-kind/land, coordination of activities to ensure people do not lose harvest opportunities, etc.

Further impact and mitigation for the resettlement process has been provided in a separate resettlement action plan (RAP) for the Tigray IAIP and RTC sites.

POTENTIAL IMPACT

The land acquisition process that involves physical displacement will have a long term irreversible negative impact on the agricultural activities of local farmers. Although such farmers could be compensated for the lost crops (and residential buildings), they often lose at least one or two harvests while looking for an alternative plot which is not guaranteed to be of the same quality and size. This situation could have a long term impact on the entire household’s livelihood and food security.

SIGNIFICANCE

The impacts on livelihood that are likely to be triggered during the construction and operation stages of the project would be negative, direct, local, long-term (15 years of construction and operation in total) and of medium severity (mainly due to the fact that some of the affected people received alternative plots and others are currently in the process of finding one). The probability of the impacts is considered to be high (the government already started the resettlement process a year ago). The significance of this negative impact on project affected people’s (PAPs) livelihood is therefore considered to be major negative and will require mitigation.

Although the PAPs will receive compensation, further best international practice mitigation measures will be suggested in a separate Tigray RAP.

4.3 COMMUNITY HEALTH

Although it is currently unknown the number of workers that will be employed during construction, there will be potential for the workforce to introduce and/or increase the rate of spread of communicable diseases in the project area. This includes the introduction of a new disease and/or a more virulent strain of an existing disease.

However, the workforce is not the only factor that may contribute to the transmission of communicable diseases. The project is also likely to result in in-migration (from other parts of Ethiopia). Similar to the workforce, there is potential for in-migration to introduce and increase the rate of spread of communicable diseases in the Project area (including sexually transmitted diseases/STDs).
There are a number of diseases that are already prevalent in the project area, which is contributing to the current rates of morbidity and mortality. This includes malaria, typhoid (communicable disease) and influenza (communicable disease) which during the household survey in the project area have been identified as a key contributor in the local communities’ rates of morbidity.

The transmission of communicable diseases in the project area during construction and operation can be exacerbated by a number of factors. Health care facilities are limited in the project area. Therefore, the capacity (e.g. availability of diagnostic equipment, availability of medicine) to respond to an increase in the transmission of communicable diseases could be limited.

**POTENTIAL IMPACT**

An increase in the transmission of communicable diseases may occur as the result of the introduction of workers into the area. In terms of communicable diseases and in addition to the existing prevalence of the malaria rates in the project area, of particular note and concern could be: tuberculosis and HIV/AIDS (mainly through drug abuse/blood transfusions/sexual relationship, etc.).

If left untreated communicable diseases can lead to long-term health issues and therefore the impact can be characterised as being long-term and in some instances permanent.

The existing local health care facilities have limited capacity to respond to an increase in the transmission of communicable diseases, potentially leaving the local residents vulnerable.

**SIGNIFICANCE**

The impact on community health that is likely to be triggered during the construction stage of the project would be negative, direct, local, long-term (15 years of construction) and of low severity (primarily due to low population density). The probability of the impacts is considered to be medium. The significance of this negative impact on community health is therefore considered to be moderate and requires mitigation.

The operational impact on community health is also considered to be negative, direct, local, long-term and of low severity (as the number of workers and associated in-migration would drop during the operation phase). The probability of the impacts occurring is considered to be medium. The significance of the impacts is considered to be moderate and requires mitigation.

### 4.4 COMMUNITY SAFETY AND SECURITY

There are a number of safety related issues that are likely to arise during the construction and operational stage of the project. These include:

- **Traffic accidents** - given the relatively low level of current road use and the fact that the project will have separate and secure/fenced off access roads, this is unlikely to occur. Instead, the key issue is likely to be the potential for an increase in accidents or incidents (particularly during construction), which can lead to injuries and/ or fatalities;

- **The presence of new infrastructure.** There are often safety issues with the establishment of new infrastructure – for example, community members interacting with unsecured equipment. This can lead to onsite accidents and injuries; and

- **The management of hazardous materials and waste.** There are a number of Project activities that will generate hazardous waste or perishable waste that if not being properly managed, could contribute to spread of infectious and other diseases.

The Project will increase the number of vehicles on roads through the transport of workers, goods, materials and machinery to and from the project site during construction. With an increase in vehicles, particularly heavy haulage vehicles, comes the increased potential for accidents and injuries to occur.

In addition, the Project will require security. Security personnel will be employed during construction and operation.

**POTENTIAL IMPACTS**

Impacts on community safety (e.g. possibility of accidents) and security (e.g. incidence of crime) can result from an increase in traffic and in-migration in the project area, the establishment of onsite infrastructure and the management of hazardous materials.
4.5 ENVIRONMENTAL EMISSIONS

The construction activities will generate:

- Noise, which can result from a variety of onsite civil works activities (e.g. construction of infrastructure, reversing sensors on large vehicles);
- Vibration, which may result from construction activities; and
- Dust, which can be generated through site grading, driving on dry, dusty and dirty roads. This can impact the surrounding air quality, disrupting the amenity value of an area and potentially impacting community health (e.g. further aggravating respiratory illnesses).

The noise levels at receptors close to the site (within 500 m of the site boundary) will exceed the IFC residential day-time noise guideline. Any receptors beyond 500m are expected to be below the guideline. The construction activities will not occur at night.

During the operation activities the levels of noise and vibration are expected to reduce. Operational noise levels are expected to meet the residential guideline at all receptors beyond 200 m from the site.

POTENTIAL IMPACTS

In terms of noise, a detailed noise impacts assessment can be found in Section 9.7 of this Report. Increase in dust levels could generate impacts on local residents and the appropriate management measures will be put in place by subcontractors.

SIGNIFICANCE

The off-site construction noise impacts identified would be negative, direct, local, short-term and of low to medium severity. Given the variable nature of the construction activities and worst-case assumptions adopted, the probability of the impacts occurring is medium (i.e. there is a fair chance the impacts would be lower than predicted). The significance of the impacts is therefore considered to be moderate.

The off-site operational noise impacts identified would be negative, direct, local, and long-term in consideration of the baseline noise environment, the predicted levels are expected to be above the applicable guideline criteria, and the impact severity is therefore considered medium. Given the dependence on weather conditions and the worst-case assumptions adopted, the probability of the impacts occurring is medium (i.e. there is a fair chance the impacts would typically be lower than predicted). The significance of the impacts is therefore considered to be moderate.

4.6 COMMUNITY INFRASTRUCTURE AND SERVICES

The construction period is expected to last over 15 years and during this time, it is anticipated that the majority of construction workers will be from outside the area (as well as the influx associated with in-migration).

An increase in population in the wider Tigray Region (due to employment opportunities and in-migration during construction) is likely to place additional pressure on existing infrastructure and services (e.g. healthcare). This often results in a reduction in capacity of existing infrastructure and services to meet the needs of the local residents (as well as the additional population added by the
However, during construction the workforce will be accommodated at camps and it is assumed that sub-contractors will provide a range of on-site amenities inside the camps. This will, to some extent minimise the need for the workforce to use (or rely on) local infrastructure, i.e. minimising the pressure that may be experienced by community infrastructure and services. It is anticipated that at the conclusion of the construction phase, the workers brought in from outside the area will leave.

In terms of the operation phase, it is anticipated that new direct and indirect jobs will be generated by operation activities. Given the duration of the project, it is anticipated that the operational workforce will relocate to the region, potentially bringing their families with them which could place some additional pressure on the local infrastructure. However given the nature of the project, it has the potential to attract new and private investments in improved infrastructure, and assuming that some workers will be sourced from the local area, it is anticipated that this additional pressure can be accommodated.

**POTENTIAL IMPACTS**

During both the construction and operation phase, the project may place additional pressure on existing healthcare facilities, for instance, should a worker become sick or an incident on site resulting in an injury. However, there is limited capacity for the existing healthcare facilities to respond to the demand (due to the limited number of health care workers, number of existing hospitals and diagnostic equipment). For this reason, if healthcare is required, workers will likely need to use a medical point located within their workers’ camp or other medical facilities located in Tigray Region. A Community Health Management Plan will help reduce any pressure that may be placed on local health care facilities.

In terms of the construction phase, the road infrastructure may be affected by increased traffic, however, this impact is expected to be local in terms of the extent and occur over a short period of time.

The above impacts may be greater depending on the degree of in-migration that occurs. This will need to be monitored closely – and the impact revisited if this become an issue.

**SIGNIFICANCE**

The potential strain on existing infrastructure (roads & infrastructure wear and tear, and reduced ability of local clinic to cope with the increased number of patients) would be negative, direct, local, temporary and of low to medium severity. Given the variable nature of the potential transportation activities (both timing-wise and with regards to precise identification of the roads that will be used most) and difficulty to predict the extent and the number of medical cases that would require medical facilities, worst-case assumptions were adopted. As such, the probability of the impacts occurring is medium. The significance of the impacts is therefore considered to be moderate.

The potential strain on existing infrastructure (congested and/or closed roads, infrastructure wear and tear, and reduced ability of local clinic to cope with the increased number of patients) would recede when the project moves into the operational stage. As such, the impact severity is therefore considered very low and the probability of the impacts occurring is medium. The significance of the impacts is therefore considered to be minor.
5 SUGGESTED MITIGATION MEASURES

This section suggests mitigation measures for all identified impacts. The following mitigation measures can be considered for discussion with EPC Contractors to ensure that the identified negative impacts are reduced.

5.1 EMPLOYMENT & ECONOMY - MITIGATION MEASURES

The potential impacts on employment and economy are positive and therefore it is suggested that they do not require mitigation. However, these potential positive impacts can be enhanced through the following complementary measures:

- Through its website, the developer will inform local businesses of contracting opportunities in a timely manner;
- The developer’s Community Relations/CSR Policy, detailing contributions to local employment, training of young local specialists and any other community-benefit initiatives.
- Grievance mechanism – The developer to ensure that EPC contractors are aware of the grievance submittal process.
- Prior to construction, create and populate a database of all suitable local service providers to encourage more opportunities for local businesses.
- Maintain and regularly update a separate web page on the developer website dedicated to local tenders for the provision of goods and services. Such webpage should be widely publicised by the developer.
- A Worker Influx Management Plan will need to be prepared to define labour practices in line with international standards that will need to be applied by EPC Contractors and their subcontractors, as well as in the Project’s supply chain. The Worker Influx Management Plan will need to be aligned with the developer’s Grievance Procedure to ensure that the procedure is consistently implemented across all Project activities.

SIGNIFICANCE OF RESIDUAL IMPACT

Not applicable as impacts on employment and economy are positive and will be enhanced if the above-mentioned complementary measures are implemented.

5.2 IMPACTS ON COMMUNITY HEALTH - MITIGATION MEASURES

A Community Health and Safety Plan will need to be prepared which addresses potential health risks to local residents. The plan will need to cover the following elements:

- To minimise the impact, a number of steps can be taken – most of the measures largely include reducing the interaction between the workforce and local residents. It is assumed that the project will use dedicated workers camp to accommodate its workforce during construction. This will help to reduce the interaction between workers and local communities.
- Implementation of Construction Environmental Management Plan (CEMP) procedures and schedule, as well as Environmental Monitoring Plan (Air Emissions, Dust) to see how air quality data is changing;
- Early notification of local authorities on critical or exceptionally busy construction periods and air-polluting/dust- and noise-generating activities
- Dust suppression by water spraying in dry seasons, particularly in the areas close to sensitive residential and community receptors
- As part induction process for new employees and workers, the EPC contractors will provide training for all workers on the transmission routes and common symptoms of communicable diseases. This training will be supported by the ongoing awareness campaign (posters located in common areas within the camp). These measures can help reduce the potential for workers to unknowingly transmit communicable diseases;
- The workers camp will include an internal first-aid ward and medical staff being present at the camp which to some extent will help to minimise the interaction between the workforce (particularly temporary construction workers) and local residents;
The Community Health Management Plan will cover details on a Workforce Code of Conduct including code specific measures that target anti-social behaviour;

Contractors’ compliance with national HSE legislation and the UNDP HSE Policies, evaluate contractors’ HSE performance.


Provide the project HSE and Worker Influx Management Policies to all subcontractors during formal induction, including the security firms.

One “umbrella” Project Grievance Mechanism, extended and accessible to all workers, those who directly work for the IAIPs development and also employed by contractors.

The developer will ensure that EPC Contractors will provide onsite first-aid tents (one tent per site) to ensure that basic medical attention and first aid treatment can be provided by a trained first-aider during the hours that the work is being undertaken at the Project site. For all medical incidents that require medical attention, the EPC contractors will quickly provide transportation to the Workers’ Camp clinic which will also help reduce the potential pressure on local healthcare facilities.

**SIGNIFICANCE OF RESIDUAL IMPACT**

Once these suggested mitigation measures have been implemented, it is predicted that the impact will be reduced to **minor negative** during construction and operation. However, on-going monitoring and evaluation of the community health situation will be needed and the appropriate monitoring key performance indicators are suggested below. If monitoring indicates an increase in the transmission of communicable diseases, the mitigation measures will need to be revised.

**5.3 COMMUNITY SAFETY & SECURITY - MITIGATION MEASURES**

Based on the above assessment, the following mitigation measures associated with community safety and security are suggested:

- In addition, the project site will be fenced, while any activities outside the main footprint will be appropriately signposted. This will help ensure that accidents associated with new infrastructure will be minimised.
- Traffic Management Plans which will need to be prepared by EPC Contractors during construction will further minimise the potential risk of accidents, injuries and near misses.
- Provide the project HSE and Worker Management Plans to all subcontractors during formal induction, including the security firms.
- Ensure that a Project Code of Conduct and appropriate training for security personnel are implemented to ensure best practice in running a secure site and implementing the Code of Conduct that fosters behaviours that help to avoid, eliminate or minimise the use of excessive force in potential conflict situation.
- The project Health, Safety and Security Management Plan are implemented by all EPC Contractors.
- Contractors’ compliance with national HSE legislation and the UNDP HSE Policies and evaluation of contractors’ HSE performance.
- The project implementation team to carry out regular audits of the HSE Management system implementation by EPC Contractors.
- The project Health and Safety Management Policy which covers no tolerance to drugs and alcohol, AIDS prevention leaflets, etc.
- Stakeholder Engagement Plan (SEP) implementation with regards to keeping a regular dialogue with local communities.
- One “umbrella” Project Grievance Mechanism, extended and accessible to all workers, those who directly work directly for the IAIP project and also employed by contractors.

**SIGNIFICANCE OF RESIDUAL IMPACTS**

Assuming that the above mitigation measures will be implemented and monitored over time, the minor negative impact on community safety and security will be minimised further to the “negligible” level. Ongoing monitoring should occur to track the implementation of the mitigation measures. See suggested monitoring key performance indicators below.
5.4 IMPACTS FROM ENVIRONMENTAL EMISSIONS - MITIGATION MEASURES
Mitigation measures for these impacts have been proposed in the Air Quality Section of the ESIA Report.

5.5 IMPACTS ON COMMUNITY INFRASTRUCTURE & SERVICES - MITIGATION MEASURES
Based on the above assessment, the following mitigation measures are suggested to ease potential strain on the existing community infrastructure and services:

- The Workers Camp will provide in-house laundry, first-aid, cooking, recreational, religious and common area facilities/rooms which will help to reduce the need for workers to use local infrastructure and services;
- The planned Workers Camp will follow best practice guidance on workers’ accommodation.
- Continue to implement a community health management plan in consultation with relevant stakeholders (e.g. local doctors and the local authorities). This plan will ensure that appropriate and adequate health care services are provided on site and at the accommodation camp to address/manage worker illnesses and injuries.

SIGNIFICANCE OF RESIDUAL IMPACTS
Assuming that the above management measures will be implemented and monitored over time, the residual impact during the construction stage will be reduced to minor negative. However, on-going monitoring and evaluation of the community health situation will be needed and the appropriate monitoring key performance indicators are suggested in the Summary Section below. If monitoring indicates an increase in the transmission of communicable diseases, the mitigation measures will need to be revised.
SUMMARY AND CONCLUSION

The following table summarises the assessment of socio-economic impacts on the project area:

Table 6: Assessment of Socio-Economic Receptors and Seasonal Level of Activity

<table>
<thead>
<tr>
<th>Impact Description</th>
<th>Significance - Construction</th>
<th>Significance - Operation</th>
<th>Residual Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Impact on employment and economy</td>
<td>Major</td>
<td>Moderate</td>
<td>N/A</td>
</tr>
<tr>
<td>Impact on livelihoods and source of income</td>
<td>Major</td>
<td>Major</td>
<td>Moderate⁹</td>
</tr>
<tr>
<td>Impacts on Community Health</td>
<td>Major¹⁰</td>
<td>Moderate</td>
<td>Moderate</td>
</tr>
<tr>
<td>Impacts on Community Safety and Security</td>
<td>Minor</td>
<td>Minor</td>
<td>Negligible</td>
</tr>
<tr>
<td>Impacts from Environmental Emissions</td>
<td>Moderate</td>
<td>Moderate</td>
<td>Minor</td>
</tr>
<tr>
<td>Impacts on Community Infrastructure and Services</td>
<td>Major¹¹</td>
<td>Moderate</td>
<td>Moderate</td>
</tr>
</tbody>
</table>

The categorisation in the above table (High, Moderate, Minor, Negligible or Not Applicable) represents a qualitative evaluation of the seasonal variation in socio-economic activity (relevant to the project). These evaluations are based on the details provided in the sections above.

From the table it is clear that land acquisition caused by the project will have a major negative impact on the affected farmers, both during construction and operation phases. The start of the resettlement process prior to an international consultant’s involvement left the project in a situation where some PAPs have moved on and will be impossible to trace to verify and quantify the full scale of this long-term negative impact. Moreover, because the national and federal land acquisition laws have gaps (if compared to best international practice), it is possible that not all affected people were identified, and some vulnerable groups did not receive the necessary assistance earlier. This and other issues will be covered in detail in a separate Tigray RAP.

Based on the information collected during the field visit, consultation sessions and site observations the existing infrastructure and particular medical facilities are inadequate even for the existing population of the area. As a result it is highly likely that the existing facilities and infrastructure in the project area will not be able to cope with the increased demand for services during the construction stage in particular.

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⁹ Mainly due to low numbers of PAPs on the Tigray site.

¹⁰ Mainly due to inadequate existing medical facilities which will be stretched further during the construction period.

¹¹ Mainly due to inadequate existing medical facilities which will be stretched further during the construction period.
Appendix A