

Research Article

DOI: <http://dx.doi.org/10.22192/ijamr.2017.04.04.003>

## Assessment of the Existing Structural Plan Implementation Situation in Injibara Town, Amhara Regional State, Ethiopia

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### Abstract

#### Keywords

Urban Plan,  
Structural Plan,  
qualitative approach,  
quantitative approach

This research was conducted to explore the real problems pertained in plan implementation and then pin points the better means that can potentially foster the socio-economic development of Injibara town, Amhara Regional State, Ethiopia. The research work was approached with explaining the identified gaps during planning implementation periods through qualitative and quantitative description and provide magnitude of the problems. These were performed through direct spots observation of the implementation trends, interviewing the direct beneficiaries those believed to have exposure to the issues under study. Spatial physical plan documents like land use, road network, local development plans, etc. and reported documents like text summery while plans prepared, municipal reports related with plans and designs implementation and administration were used as a main methodologies for the development of the entire study. The assessment had got many limitations' in the existing structural plan implementation of Injibara town. The limitations had occur due to poor community participation and integration with different sectors, financial problems, lack of skilled manpower and their commitments, lack of equipment's and etc... Thus this study recommends there have to be skilled man power, budget, participation of the community along with responsible sectors during structural plan implementations of the town.

### 1. Introduction

The relatively long tradition of planning practice in Eastern Africa indicates that there is an understanding of physical land use planning which mainly comprised of master planning, planning and building standard and regulation and a system of development control. Master plans, sometimes named as 'end-state' plans or 'blueprint' plans, refer to the physical plans that depict on a map the future scenario of the town when the plan is fully implemented (Hirasskar, 2007).

Though Ethiopia is one of the least urbanized countries in Africa; its rate of urbanization is quite dramatic. In Ethiopia, after the Federal Government has a vested interest in the issues of land, planning for urban centers is made by the National Urban Planning Institute; but the urban centers in the country are supposed to be managed by their own town administrations and municipalities. Municipalities are local governments in relatively bigger urban centers in Ethiopia. Among different roles and responsibilities of the managing and governing bodies, in different-sized urban centers, the central issue of the

municipal task is the management of urban land. This is the most challenging task planning and managing bodies because there are competing and conflicting interests with respect ownership and use of urban land (Gulyani *et al.*, 2001).

Injibara Town is the administrative center of Awi- zone, in Amhara Regional state of Ethiopia. Injibara is one of the fast growing towns which deserve sound and farsighted development plan. For this, undertaking a planning approach, that encompasses planning processes involving the analysis of the existing situation, and gathering and looking into additional qualitative information of the town is imperative.

It might reasonably be assumed that plans are prepared in order to be implemented. Though this may often be the intension (even if a vain one), it is not always the case. Some plans are basically pieces of propaganda intended to boost the attention of the area (usually for development), or to promote one type of future over another (such as one with greater leisure provision or one which is more ecologically sustainable), or to press for some particular character of development (as with the classical architecture of the city beautiful movement). Plans can serve many functions: inspiration may be more important than implement ability. Or the preparation of a plan may be the short term answer to a particular political pressure to do something about the structure of an area: the plan is thus seen as the first step; but by the time the plan is completed, the enthusiasm for change may have dissipated, or the plan may be seen as impracticable or too costly. Again a plan may be required as part of a submission to a higher level of government for grant-aid: once the grant is obtained, the plan has served its purpose. Not frequently, plan makers indulge in a dream: they know that they can't forecast what influences will exert them in the future; but they feel compelled to try; they thus resolve the conflict by making plans and storing them away where they will be forgotten (Banfield, 1959), cited in (Cullingworth, 1997).

According to (NUPI 2003), urban planning and implementation experience in Ethiopia has a short history. Review of urban planning practice in the country indicated that less than a quarter of the recognized urban centers have no plans to guide their spatial development. Even those that have plans have difficulty to implement the proposals. Apart from the pervasive issue of underdevelopment and poverty, the main factors that have had impact on the preparation and implementation of urban plans have been lack of qualified personnel to prepare and implement urban

plans, Lack of standards for planning, and Lack of proper legal frameworks for implementation,

The urban planning and implementation process involves several actors, touches upon complex issues different time spans. The quality of the built environment depends, among other things, on proper planning and coordination of implementation activities. In fact, the need for proper urban planning and implementation becomes mandatory, as the transactional cost of complex processes is immense, once erected physical structures have long life, and property relations in urban areas are difficult to amend once created. Environmental, social and economic factors make it imperative to seriously coordinate urban planning and implementation.

According to Antje Hannemann (2008), a planning process is not always crowned with success. There are often unforeseen happenings, which cannot be solved adequately. Furthermore other negative factors can lead to failures as well. A failure can be defined as "a state or condition of not meeting desirable or intended objectives" and it is the opposite of success. Failure often roots in problems, which were unpredictable or neglected before. These problems can be limited resources and attention, lack of civic participation, absence of information, action or community support. The roles of human factors in implementing actions to achieve development as well as the fact of multiple interests are often underestimated. Furthermore, as processes of urban planning often refer to a lot of work and high expenses, this can lead to problems in connection with a capacity overload the public service, deficits and budget problems.

Injibara is a town in Ethiopia. It is the administrative center of Awi Zone in the Amhara Region. The level of urbanization in the town increases from time to time due to migration of people to the urban centers in search of better economic opportunities and improved standard of living. However, this high pace of urbanization has resulted in increasing demand for services and facilities that are not being met. One of the important tools in this regard is the availability of well-prepared urban development plan. The 2002 E.C structure plan incorporate the necessary sectors like housing, population, urban infrastructure, road and transport, land use, regional, urban finance and good governance, and urban economy.

Therefore this study was initiated to assess the existing structural plan implementation situation in Injibara town with respect to structural plan implementation processes. The research questions used were

➤What are the existing situations of plan implementation processes in Injibara town?

## 2. Materials and Methods

### 2.1 Description of the Study Area

The study was conducted in Injibara Town, Amhara Regional State, Ethiopia. Its relative location is in the

south western part of the region and North western part of the county, Ethiopia. It is about 447 km away from the capital city of Ethiopia, Addis Ababa and 118 km from BahirDar, the capital city of the Amhara Regional state. Geographically, Injibara is found in 10<sup>0</sup>59'N and 36<sup>0</sup>55 E longitude. The highest and lowest altitude of Injibara is recorded to be 2540m.a.s.l and 3000m.a.s.l respectively (Zenebe consultant, 2009).

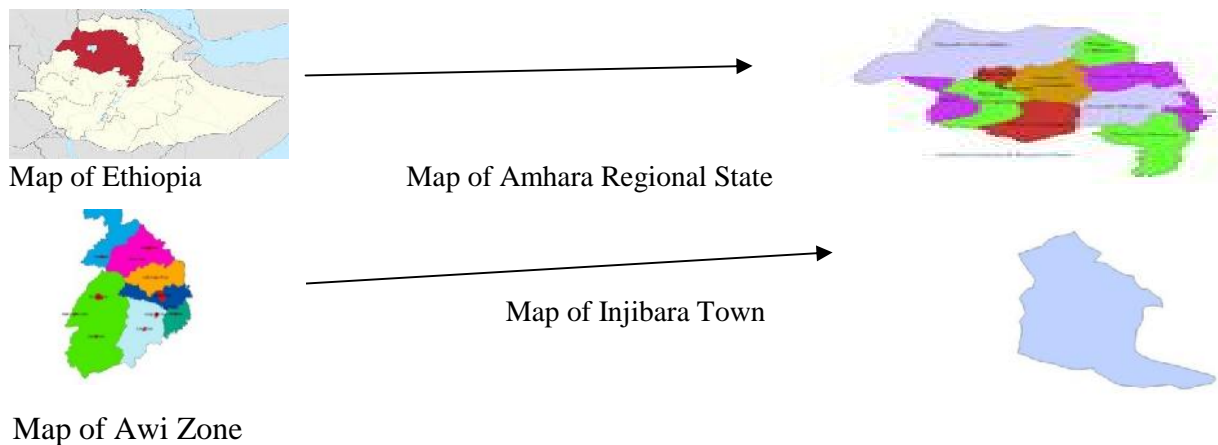


Fig 1 Map of Ethiopia, Amhara Regional State, Awi Zone and Injibara Town

### 2.2. Research Design

The study was performed through comprehensive approach for to asses plan implementation processes. Exploratory method were also employed in a few extents to gain background information. This provides better understanding and clarity of the situation in sufficient manner significantly in sighting into it. The study followed qualitative and quantitative approaches because the study requires both qualitative and quantitative data which are obtained from primary and secondary data. Data collection tools appropriate for designed research type to gather primary data were: Personal field observation, questionnaires, interviews and Focal Group Discussion.

**Field observation-** were undertaken by using base map and structural plan implementation document of the town as a supplementary materials to identify the boundary of the town delineated by proposal of

structural plan and the current boundary and development activities within these boundaries.

**Questionnaires (both closed and open ended questions) and Focal Group Discussion** - were conducted with concerned heads and officials of the city administration, technical class, elites, zonal works and urban development department and the concerned bodies.

**Through personal interview:**The conducted a rigid procedure and seeks answers to a set of pre-conceived questions through personal interviews. This method of collecting data is usually carried out in a structured way where output depends upon the ability of the interviewer to a large extent.

While the secondary data sources are extensive reviewing of literature from different published and unpublished documents, proclamations, regulations, books, reports and other relevant studies by government organizations and individuals.

## 2.2.1. Sample Design

### 3.1.4.1. Population

The population or universe of the study is the whole population residing in the planning boundary of Injibara town.

The population of the town is increasing due to rural to urban migration, as well as because of natural population increase within the town. Due to the capital city of Awi zone, people migrate to Injibara town for searching for work and also the weather condition is favorable for life, the total population of the town was rapidly increasing through time. In 2015 is male 18,540 (51.7%) female 17,306 (48.3%) total 35,846. (Injibara town Administration, Finance and Economic development office, 2015).

The focus of the study was structural plan implementation challenges and opportunities in Injibara town. The study benefits the town of assessing these problems and indicating possible solutions. Based on the 2015 ANRSFEDBR, the 2009 population of the town has grown to 27,251, and now the town population becomes around 35,846. It expressed in terms of household size divided by 5 since, Amhara Region average family size is 5, it becomes 7,169. The population growth rate of the zone is supposed to be about 3.5% (The 1999&2000 consolidated report of the department of finance and economic development of the zone, 2000).

### 3.1.4.2. Sampling Frame

The sampling frame of the study is the list of those residents living in areas which are expected to bring adverse effects on the structural plan implementation. In this case, it's about 7,169 households residing in Injibara town.

The study use probability (random) sampling and non-probability (purposive /judgmental) sampling type to increase the validity of the research and to interpret the result of the study. Based on these 184 respondents selected to conduct the thesis.

Simple random sampling is also known as chance sampling or probability sampling, where each and every item in the population has an equal chance of

inclusion in the sample and also used in the survey to select housing units/ buildings and purposive/judgmental sampling frame, selecting a sample based on the bases of knowledge of the population, its elements and purpose of the study. Purposive or judgmental sampling selecting a sample based on the basis of appropriateness of people for the study.

### 3.1.4.3. Sampling Unit

Among 7169 households, the sampling unit is about 164 households and 20 key informants, which becomes 184 units within the town.

## 3.1.5. Sample and Sampling Techniques

### 3.1.5.1. Sampling Technique

According to Miller (2011), the sample size was calculated by using sampling formula since the targeted population  $N=7169$  households, the following formula was appropriate for the sample size calculation.

In 2015 the total population lived in Injibara town were 35,846. Among these males and females were accounted for 18,540 and 17,306 respectively.

Therefore, the population of Injibara town in 2015 is 35,846 and the average family size of Amhara is 5 the number of households becomes,  $35846/5=7169$ .

Therefore the sample size ( $n$ ) will be calculated as follows,  $N=7169$

$N = Z^2 pq / \{e^2 (N-1) + Z^2 p q\}$ , where  $n$ = the desired sample size

$Z$ = the standard normal variable at required confidence level (in this case 93%)

$P$ = the proportion in the target population estimated to have characteristic being addressed (50%).  $q = 1-p$  and  $e$  = the levels of statistical significance set

In this study, 93% confidence interval was taken to find out the sample size, hence  $Z=1.81$ .

$e = (1-0.93) \times 100\% = 5\% = (0.07)$ ,  $p=0.5$ ,  $q=1-0.5=0.5$  and  $n = Z^2 N / (e^2 (N-1) + Z^2 p.q)$

$n = (1.81)^2 \cdot 7169 \cdot (0.5) \cdot (0.5) / ((0.07)^2 (7169-1) + (1.81)^2 \cdot (0.5) \cdot (0.5))$

$n = 5871.59 / 35.94$ ,  $n = 164$

Therefore the sample sizes for this study were for a questionnaire and interview accounts for 164 and 20 respectively, with a total of 184 respondents from the total population 35,846 in Injibara town.

### 3.5. Instruments/ Sources of Data

The data for this study was gathered from more on primary and some secondary sources. Data is collected from sources through different data collection instruments including survey, site observation and in depth interviews (structured and semi-structured) and questionnaires.

#### 3.5.1. The primary Data sources:

Primary data sources include information obtained from the selected study areas of dwellers through data collection instruments such as questionnaire, interview, photographs taken during site observation and from experts through interviews and discussion.

**3.5.2. Secondary sources:** documents from the municipality, reports (Injibara town structural plan) internet and other published and unpublished materials.

**3.6. Data Collection Procedures:** The following methods were engaged during the data collection period. These were purposive sampling method, field observation with prepared check list, questionnaire both closed ended and open ended, face to face interviewing were structured questionnaires, and capturing photographs.

### 3.8. Data Processing and Analysis

Data was analyzed and presented mainly in the qualitative approach because qualitative research is concerned with finding the answers to questions which begin with what and quantitative approach was also employed. Tables, maps, graphs and charts were used for presentation of data. Photographs and figures were also incorporated into the research work to support and ascertain the actual situation on the real ground. Relevant computer software, like GIS, Auto CAD, SPSS, Micro Soft Excels, etc. with sufficient verbal description was used for data processing and analysis.

## 4. Research Findings

### 4.1. Assessing Existing Structural Plan Implementation Status of Injibara town

Injibara town is bounded by Banja-Shukidad Woreda in all directions. Administrative status of the town is town council and encompasses three kebeles within it.

It is the first time effort, and the intuition employed to exercise and interpret the planning theory and practice, which is the philosophies of the need for further planning, implementation means and strategies through detail plans and short term urban projects is encouraging.

### 4.2. Actual Proportion of Land Use Categories in the Urban Space

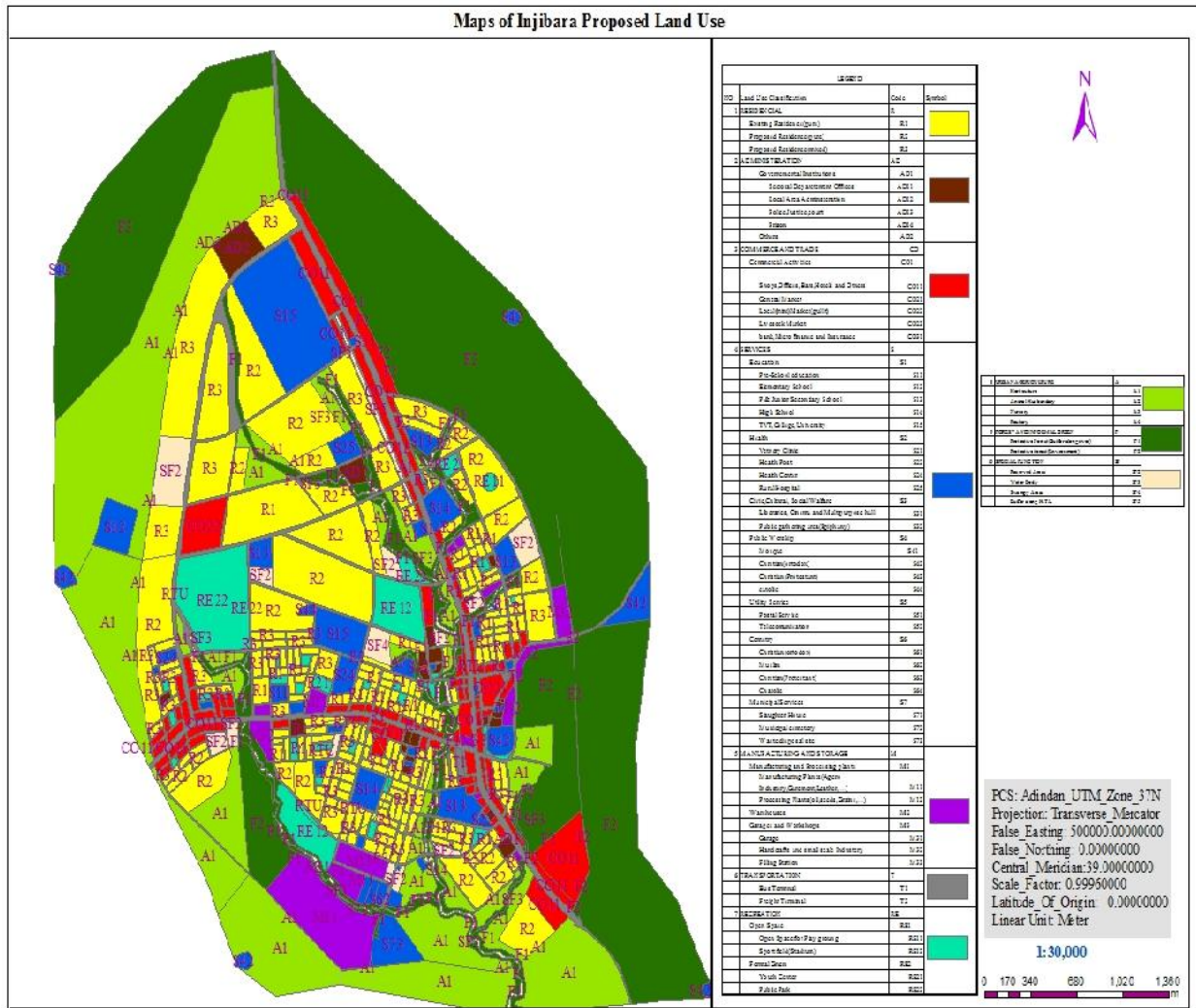
In broad terms the revised standard has set the minimum and maximum standards for seven general land use categories. These general land use categories are housing/residential; business & commercial centers and market places; social services (public facilities, cultural, archeological sites & special functions); green (recreation, sports and environmental sensitive area); administration; manufacturing & storage; and infrastructure & transport. Similar to the standard the existing land use classification of Injibara town is residential, administrative, commercial, service, green area, urban agriculture, manufacturing & store, road and transport, special function. But the amount of each land use classification does not match the standard compared to the revised structural plan preparation and implementation. Existing land uses are location, distribution and incompatibility land use problems are shown so the town needs some improvements based on the standard of the structural plan elements.

### 4.2. Proposed Land-Use of Injibara Town

The socio economic study shows that the population of the town would reach about 41,120 inhabitants with the total housing demand of 5,141 housing units by the end of the planning period i.e., 2009-2019 G.C. The study has considered a sufficient area of land for those inhabitants for housing and related services and facilities in the infill areas of existing town boundary and the expansion areas in the proposed town boundary. The land requirement calculation has been made taking the Amhara Region Works and Urban Development Bureau standard of 200 square meters plot size for residential purpose as a guide.



Int. J. Adv. Multidiscip. Res. (2017). 4(4): 12-22  
 Figure 4.6. Injibara town proposed land use plan

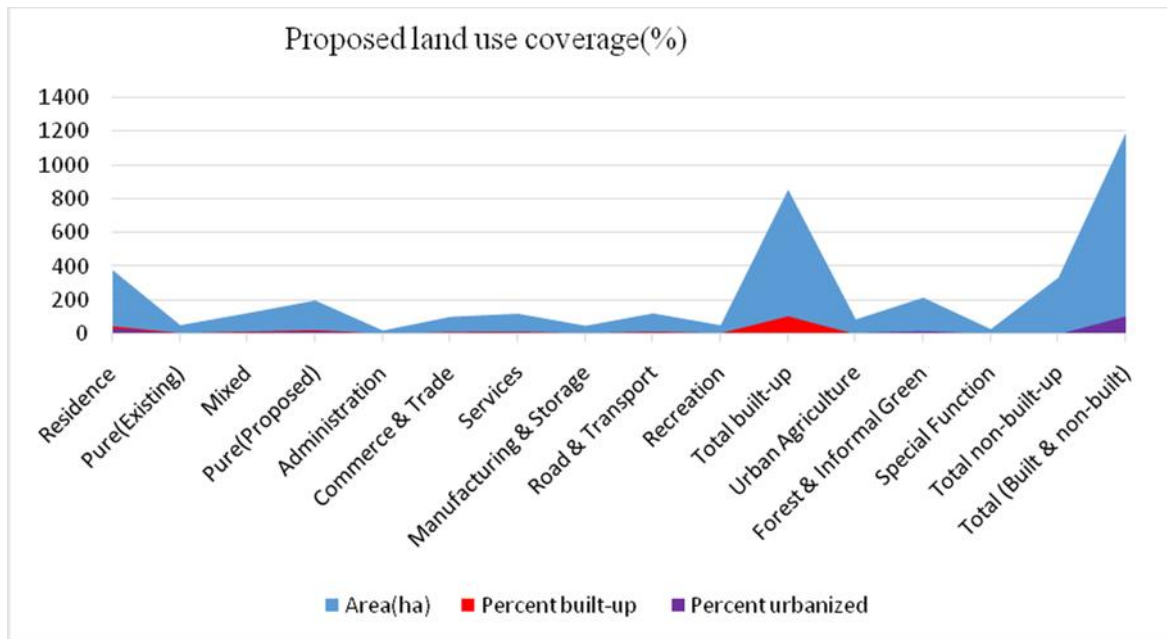


Source: Injibara town proposed land use plan, 2015

Figure 4.6 above shows that proposed land use categories of Injibara town is divided into residential, administration, commercial, service, green area, urban agriculture, manufacturing & store, road and transport, special function. The amount of each land use classification does not match the standard for the structural plan preparation and implementation.

Existing land uses are location, distribution and incompatibility land use problems are shown so the town needs some improvements based on the standard of the structural plan elements. The above figure also shows that used for easy judgment and simply show unimplemented land uses.

Figure 4.7. Proposed land coverage of Injibara town



Source: Computed from the proposed land use map, 2009

#### 4.2.1.1.1. Residential

The total area allocated for residential function accounts for about 379.78 ha that is 44.35% of the built able area in the planning period. About 15.47 % of the residential areas are mixed uses with other non-pollutating functions such as small shops, restaurants, coffee & tea houses, tella houses, pharmacies & drug benders, and small manufacturing activities like flour mills, tailors, weaving, etc. are located along collector roads. This is mainly proposed to promote investment in the areas, allowing developers to involve in various economic activities depending on the market. New residential areas are proposed at the back of arterial and collector roads. In this land use category best performance was observed because of a cooperative housing project.

#### 4.2.1.1.2. Administration

Administration covers 22.32 ha or 2.61 % of the total built able area of land is allocated for all administrative institutions those are working in the rental residential and commercial units and those are to be established in the planning period of the town. It is assumed that the number of kebeles will be increased from three to four and their administrative boundaries should be determined by the town administration as much as possible. The kebele centers should be located at strategic location for ease of

access to the residents in commercial, residential, and other zones.

#### 4.2.1.1.3. Commerce and Trade

The areas along arterial and collector roads in both existing and proposed areas have been reserved for this purpose. The total area designated for this use sums up 103.85 hectares, making up 12.13 % of the total built able area of the town.

The existing general market is wide enough to serve for the planning period and left in its place. In addition to the existing daily market which is not functional now, that is located north of the multipurpose hall, another site is reserved at the western side along the major collector road. The livestock market is also left to continue at its site. A lot of options are proposed to accommodate commercial uses, such as shops, bars, restaurants, etc. in various parts of the town. Land for commercial uses can also be developed in areas proposed for mixed use activities.

#### 4.2.1.1.4. Services

About 122 ha (14.25 %) of the built able area of the town is reserved for services. The main services are described below.

#### **4.2.1.1.4.1. Education**

In addition to the existing ones, considering the fair distribution of educational services for every corner of the town this study reserved sites for: one university at Bahir Dar exit, one primary & junior secondary school in western & another junior secondary school in the northern part of the town, Bahunk primary & junior secondary school is recommended to grow to high school. This additional land adjacent to Bahunk School is added for future expansion, one primary school is also proposed as the western part (to Chagni exit) of the town and, kindergartens should be built in every neighborhood at a minimum of children walking distance during detail plan preparation.

But the University site called Awi University shows the map in the southwestern part of the town, but the text document shows north western part of the town, it implies there is no proper matches between graphic presentation and explanatory text, it creates conflict between the communities as well as implementation problems in the town.

#### **4.2.1.1.4.2. Health**

All the health institutions are left on their existing sites and a site is reserved for one additional health post at southeast and a health center in the western part of the town. With regard to health post, it is necessary to consider the population to be served while deciding the sites for this service during detail plan preparation.

#### **4.2.1.1.5. Municipal Services**

They include services such as abattoirs, solid waste disposal, municipal cemeteries, and public bath and toilet. The existing abattoir has been maintained at its location, separating it from residential neighborhoods by agricultural activities as a buffer to prevent its bad smell pollution. With regard to solid waste disposal a site is proposed at the southern end of the town boundary. The site for municipal cemetery is reserved adjacent to catholic cemetery; and the municipality has to build additional public baths and toilets at busy sites where many people gather and interact during detail plan preparation.

But, there are different activities like abattoir, waste disposal site, municipal cemetery, green areas and open spaces and the likes are not properly implemented based on the structural plan binding document.

#### **4.2.1.1.5.1. Social and Cultural Services**

According to the structural plan document worship places are enough to satisfy the future demand, but some of the respondent's responses indicate additional worship places are needed, especially in the northern part of the town/Bahir Dar exit. This is also true based on the structural document a new worship place is required to be at least 2 to 3 kilometers away from the existing similar one.

The existing cemetery sites for Orthodox churches are at their respective compounds and for Catholics the cemetery site is proposed in between the municipal and Muslim cemeteries in north of the Protestant cemetery.

Additional public library and youth center sites are recommended at the west and northeast of the town respectively as indicated in the proposed land use. Community centers such as children's playground and kindergarten should be proposed in detail plan preparation at each neighborhood in the expansion areas. A multipurpose recreation site that is recommended for car training, Epiphany ceremonial place, polo field, etc. is located at western part east of the new health center & south of gulit market as shown in the proposed land use.

According to the observation the above public library, youth center, playground were found simply for name but are not properly implemented.

#### **4.2.1.1.5.2. Utility Services**

All utilities, such as electric power, water supply and telephone lines are planned to be laid in a compact form under pedestrian walkways as shown on road parts that shall be laid in layers by separating concrete conduits during construction of roads.

Regarding to water supply in the town there is no sufficient water in the town. The town residences fetch water twice a week it is difficult to perform different activities and to live. This is because of improper implementation of utility services of water lines.

#### **4.2.1.1.6. Manufacturing and Storage**

The total land allocated for manufacturing and storage is 50.72 ha, which accounts for about 5.92 % of the total area to be built up in the planning period. Some small scale industrial activities like flour mills, small storages & garages, small wood & metal workshops, handicrafts and cottage industrial activities such as



weaving, etc. can be located mixed with residential and commercial zones along arterial and collector roads. With regard to medium and big pollutant manufacturing activities that emit a bad smell, smoke and noise, a site is assigned at the southern end of the town adjacent to municipal solid waste disposal site but it is not implemented.

#### **4.2.1.1.7. Transport and Proposed Road Network**

##### **4.2.1.1.7.1. Transport**

Transport facilities include public transport, freight terminals and parking areas. The existing public transport /bus terminal is left at its site by adding the land from north of it, up to Chagni road to serve for the planning period. But as the researcher observes crowdedness it needs expansion because the town is found in the cross section of Addis Ababa main road and intersection of chagni and different vehicles from Sudan and Renaissance dam Abay means there is high movement of people. This will increase accessibility of the town and enables to build a strong economic base.

##### **4.2.1.1.7.2. Road**

The development of the proper road network is necessary for good spatial growth of urban areas. The total area occupied by road network is about 123.87 hectares, i.e., about 15% of the total area to be built up in the planning period. This is found to be in the range of the international standard, i.e., 15 – 25% and in addition to this it is assumed to increase during detail plan preparation.

In order to have good circulation in between the existing and the expansion area of the town, this study has proposed three hierarchies of varied widths of roads: arterial (major & minor) roads, collector (major & minor) roads, and local streets.

**Arterial Roads:** Arterial roads are the wider road network system and are sub grouped into major and minor arterials. The major arterial road is the one that connects the town with Addis Ababa – Bahir Dar while the minor arterial connects with Chagni. The right-of-way width of major arterials is 40 meter while that of minor arterials is 30 meter.

**Collector Roads:** This type of road has a width of 16, 20 and 30 meters. They are used to share the traffic congestion from arterial roads and provide access to

commercial & residential areas. The right of way width of major collectors is 30 meters, whereas the minor collectors are 16 and 20 meters.

**Local Roads:** This category includes roads with right of way width of 8, 10 and 12 meters which are used to serve as an access road to connect the residential areas with collector and arterial roads. The following detailed recommendations are forwarded for solving the identified problems in the existing road network: Widen existing roads by clearing encroachments along their right-of-ways, according to the previous plan road network and develop new roads in expansion areas as soon as possible to regulate housing and other developments.

##### **4.2.1.1.8. Recreation**

Regarding recreational facility, the study has maintained the existing stadium at its present site as a play field for youths. In addition to the existing open spaces, many other sites are reserved at various neighborhoods as a children's playground and green area. Besides this, other residential neighborhood open spaces are recommended to be reserved during detail plan preparation and implementation by the municipality. The researcher recommends development of recreation incorporating lodges, parks, resort hotels, etc. mainly to promote economic development of the town through exploiting its natural setting. This will help the town to promote tourism and also maintain the environmental protection as well.

##### **4.2.1.1.9. Urban Agriculture**

Urban agriculture plays an important role in augmenting nutritional requirements of residents, increase household income, drains flood prone areas, and has a positive impact in greening and protecting the ecology. Therefore, urban agriculture like horticulture, animal husbandry, fattening and other farming activities is recommended to be developed along the river and flood prone areas as shown in the proposed land use. The total area to be used for agricultural function is about 87.94 hectares that are 7.37 % of the total area of the town.

##### **4.2.1.1.10. Forest & Informal Green**

It is logical to maintain the ecological balance and to protect the land degradation from prevailing erosion during the rainy season, by re- afforesting the existing vegetation area and also planting trees along the buffer

zones left in rivers, gullies and mountainous areas of the town. Injibara town is surrounded by chains of mountains which are covered with natural forest. Therefore, maintaining the existing forest and planting trees on bare lands and along rivers is good for the town in particular and for the country in general.

#### 4.2.1.1.11. *Special Function*

This category of land encompasses reserved lands for accommodating unforeseen demands those may arise during the planning period in the future, those areas not suitable for construction purpose, such as marshy land, water body, gully, etc. Such land uses sums up 30.69 ha of the total area in the town.

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How to cite this article:

Zewditu Mulugeta. (2017). Assessment of the Existing Structural Plan Implementation Situation in Injibara Town, Amhara Regional State, Ethiopia. Int. J. Adv. Multidiscip. Res. 4(4): 12-22.  
DOI: <http://dx.doi.org/10.22192/ijamr.2017.04.04.003>