

# **Urbanization and its Impact on Urban Fringe Land Use Change: in Labella Town, Amhara Regional State, Ethiopia**

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## **Abstract**

The main purpose of this study is to assess the impact of urban expansion on agricultural land in Lalibela, Amhara regional state, Ethiopia. The town covers an area of 92,166 kilometer square and it is one of the municipal woredas with a population of 51,328. It consists of six (6) woredas. To meet the general objective, two specific objectives were set: investigating the social and economic problems that faced on farming family after displaced from their agricultural land and identifying compensation problems through expropriation of agricultural land owners during urban expansion. In order to answer these specific objectives, the data were collected from affected households through questionnaires, focus group discussions and from the municipal and agricultural development office through interview. The collected data results showed that, there were rapid conversions of agricultural land for urban use. Huge amount of agricultural land is converted for cooperative housing, infrastructural development and social service provision. The conversion of this huge amount of agricultural land leads for the diminishing of agricultural land. This leads for food production decreasing, food in security, food production price rising, health problem and unemployment on the farming community. In addition to this, fragment of social lives such as, idir, ikub, tezikar and senbete. Finally, these problems can be managed by applying vertical urban expansion, compact development, zoning regulation, and the government should involve in the construction of condominiums on small plot area size.

**Key words:** urban expansion, agricultural land, compensation, expropriation.

## **1. Introduction**

Urban expansion is spontaneous phenomenon that leads to spontaneous growth by displacing rural and urban farming community and also decreasing the amount of land available for agricultural land (Tamirat, 2016) and result in loss of agricultural land, natural beauties, range lands, parks and sceneries (Teketel, Urban expansion and its Effect on peripheral farming community: The case of Hosanna town, 2015). Urban expansion is the result of population pressure in urban area through rural-to-urban migration and natural population increases (McGee, 1989).

The population of the world becomes more urbanized and cities grow from time to time. This happen because, urban areas have been playing a major role as the center of industry, information, communication, trade, education, skilled lab our, research, bank and finance (Afolabi, 2008).. Due to the presence of these conditions the population moves from rural to urban area and the urban population become increasing from time to time (McGee, 1989).

Ethiopia has a long history of urbanization that developed next to the ancient Egyptian civilization in East Africa like Axum, Lalibela, Gondar and Harar and then finally Addis Ababa become the capital city of the country (Teketel, Urban expansion and its Effect on peripheral farming community: The case of Hosanna town, 2015). The Ethiopian urban centers are expanding at an alarming rate (4.3 %) that resulting in losing of many very productive agricultural lands. This leads in sufficient of agricultural production (Alemu, 2015).

Lalibela is one of the towns that experience rapid urban expansion in north wollo zones due to rural urban migration and high birth rate. Urban expansion in Lalibela is along the main road of the two sides, one side is out ward to Simeno town and the other is out ward to Kurakur-Nakutolab kebele. Lalibela consists mainly of dispersed residential settlements that spring from a central node around the churches and spreads out into the surrounding agricultural land (UNESCO, 2010). According to Mr. Mulugeta G/Medin, Mayor of Lalibela (2019) report, there was no clear demarcation of the core and buffer zones of the town, as this was a work in progress awaiting finalization and passage into law.

The conversion of agricultural land in to urban use has negative consequence on the farming community which include food production in security (Meseleku, 2013). Even if the agricultural land enhances urban food security, poverty reduction, source of income and job opportunity for the urban farmers, the local town administration is not taken in to account the benefits of agricultural land. There are poor agricultural land management and uncontrolled urban expansion in the study area. In addition to this, the agricultural lands are

converted in to another urban use without considering the farming community socio-economic condition. These activities faced adverse negative impact on agricultural land and on the agricultural land owner's socio-economic development. Poor agricultural land management and uncontrolled urban expansion leads for many problems on the agricultural land and on the farming community. Some of the problems are fragmentation of urban and rural agricultural lands for residential, infrastructure & social service provision, displacement of farmers from their agricultural land, loss of productive agricultural land, food insufficiency, poverty, loss of job opportunity from agricultural sector, loss of social life's and land disputes are some of the problems that occurs in the study area.

## 2. Related Literature Review

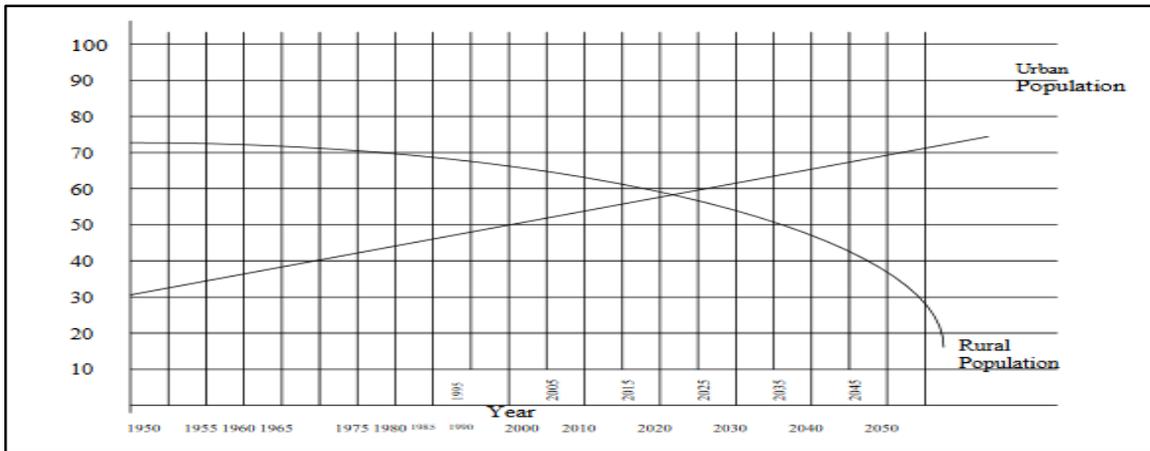
### 2.1 Theoretical frame work

#### 2.1.1 Urbanization and world population

The urban population is expected to continue to grow, so that in 2025, for the first time in history, the global urban population exceeded the global rural population. After in 2025 more people live in urban areas than in rural areas in the world. Approximately, 70 percent of this growth will take place in African cities and towns. By 2025, African society will become predominantly urban (UN, World Urbanization Prospects, 2012). Ethiopia has a long history of urbanization that developed next to ancient Egyptian civilization in East Africa: like; Axum, Gondar, Lalibela, Harar, etc. and then finally in the 1880s Addis Ababa has become the capital city of Ethiopia (Alemu, 2015). The Ethiopian urban centers are expanding at an alarming rate (4.3 %) (Alemu, 2015). This unexpected rate of urban expansion resulting to peasant displacement with concomitant loss of agricultural land and change of their livelihood (Tamirat, 2016).

Urbanization in Lalibela has long term experience and it was started in the 11<sup>th</sup> century, but the urban area are expanding un alarming rate after 2011. This expansion leads for loss of many agricultural land. After in 2011 the churches take a large area of urban land because the people that found around the church area are moved to the new expansion area called kurakur. Now a time the urban is expand out wards to Simeno town and kurakur-nakutolab sites (Lalibela Town Administration, 2019).

Figure 1: urban and rural population of the world from 1950-2050



Source: (UN, World Urbanization Prospects, 2014)

### 2.1.2 Cause of urban expansion on agricultural land

According to Firew (2010), two most important factors leading to urban expansion are in-migration (both rural-urban migration and urban-urban migration) and natural population increase. Migration mostly occurs by push and pull factors through varied in extent and motivational factors in developed and developing countries, but both having common destination target that it bringing people towards the urban areas (Muluwork.Z, An assessment of livelihood and food security of farmers displaced due to urban expansion , 2014)

The increasing of urban population causes increasing demand on urban use of agricultural land which can be unhealthy without reasonable urban planning. Some researchers employ the term urban sprawl to describe unhealthy urban expansion (Sisi.Z, 2016).

Urban expansion results from natural increase (the number of new born children are greater than the number of deaths) and high rural-urban migration (the increment of rural populations migrates in to the town). The combination natural increase and rural urban migration results high population pressure in the urban area. In order to satisfy this high population pressure needs and wants, the government expands investment, infrastructure and social services out ward to agricultural land and leads for loss of huge amount of prime agricultural land. In addition to this, weak institutional capacity related to in appropriate implementation of laws & regulations such as, lack of zoning regulation leads for expansion of urban area on agricultural land in Ethiopia (Shishay.M, The Impacts of Urban Built-Up Area Expansion on the Livelihood in the Peri-Urban Area, 2011).

### **2.1.3 Effects of Urban expansion**

Urban expansion appears to have direct effect on the available agricultural land in and around the urban area which in turn affects food supply of the city. Food security and increasing losses of agricultural lands have become an issue of global concern (Njungbwen.E, 2011). Urban areas of many developing countries, particularly in Africa, are expanding rapidly by incorporating the surrounding rural villages ( Tsega.G, 2014). Land for expansion is often taken from fertile agricultural lands, which are often located immediately surrounding cities; the extent of modern expansion has consumed a large amount of the most productive agricultural land, as well as forest and other wilderness areas (Shlomo.A, The dynamics of global urban expansion, 2005).

Urban expansion has resulted in significant changes in agricultural land. It consumed a huge amount of prime farm lands, the land with the best soil and climate for growing crops ( Budd.L and Gottdiener.M, 2005).Urban expansion creates high pressure on agricultural land, and subsequently, brings negative impacts on the socio-economic conditions of communities and the environment such as, food insecurity, poverty and reduction of food production (Jianga et al, 2013) and also pushed peoples out of farm landand reduce the amount of agricultural production, causes for enormous conflict with land acquisition (Shishay.M, The Impacts of Urban Built-Up Area Expansion on the Livelihood in the Peri-Urban Area, 2011).

### **2.1.4 Expropriation of farmland for urban use**

In Ethiopia, both in urban and rural areas, social and economic infrastructures are not yet developed. The need of suitable property unit formation, the question of housing and other real estate construction for high rate of population growth due to natural and rural-urban migration in the urban areas of the country, the need to solve development and investment questions and other public interest requires the application of expropriations as meaningful and useful management tool (Belachew, 2013). Expropriation is an important tool in most countries for land acquisition for public purposes although it can often be arranged through other means (Belachew, 2013). According to the constitution of Ethiopia Art 40(8), the government has the power to expropriate private property for public use and proclamation No.455/2005 Art 3(1) states that, A woreda or an urban administration shall, have the power to expropriate rural or

urban landholdings for public purpose where it believes that it should be used for a better development of the society.

### **2.1.5 Compensation for Expropriation**

According to **expropriation Proclamation No. 455/2005**, Compensation is the payment to be made in cash or in kind or in both to a person for his property situated on his expropriated landholding (FDRE, Expropriation of land holdings for public purpose and payment of compensation proclamation No.455/2005, 2005). According to the law, people who are displaced due to expropriation in rural areas have the right to be compensated for loss of income from the land if they do not receive replacement land. The compensation is defined as 10 times the yearly income from the land, based on the average income from the last 5 years (article 8(1)). The value of the land in itself is not compensated. This is due to the fact that all land in Ethiopia is government owned, thus there is no private ownership of the land and no landowner who is eligible to compensation.

## **3 Research Methodology**

The objective of this research paper is to study the impact of urban expansion on agricultural land in Lalibela town, Amhara regional state, Ethiopia. In order to address the research objectives and questions, descriptive research design was applied. Both qualitative and quantitative research approaches were used to study this research. The data sources for this study were primary and secondary data sources. The data for this research was obtained from primary and secondary data sources. The researcher gathered information from the sample by using questionnaire, focus group discussion, observation and interview. This study was used both probability (simple random) and non-probability (purposive) sampling. This research design was generalized based on sample size. In order to succeed the objective of the study, the researcher prepared questionnaire for the respondents. Based on the general objective of the study, the populations who lost their agricultural land due to urban expansion from 2011 to 2019 were 1158 farmers. From these who lost their agricultural land, 113 populations were representative sample of the whole that lost their agricultural land during urban expansion. In addition to this, the researcher took Governmental officials such as Municipal experts, agricultural development experts to get enough

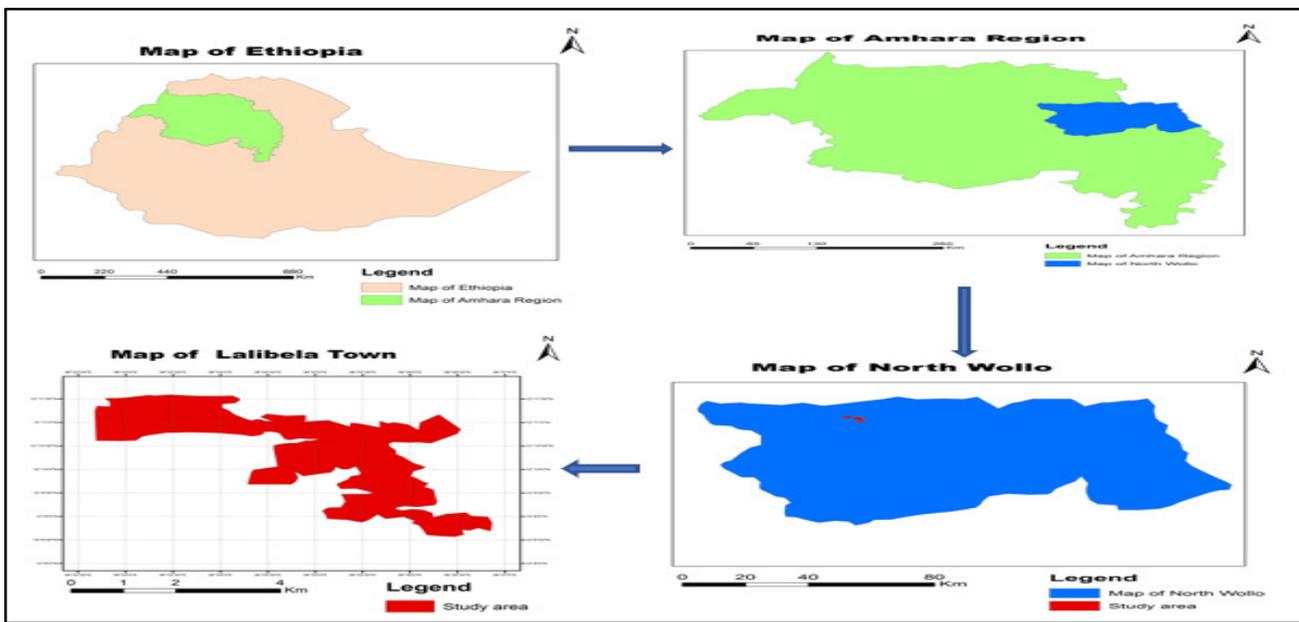
information for the research problems and objectives. Scope of the study was impact of urban expansion on agricultural land in Lalibela town from 2011 to 2020.

#### 4. Interpretation and discussion

##### 4.1 Socio-economic condition of the study area

Lalibela town is located in Amhara national regional state of North wollo zone at a distance of about 701 kms from Addis Ababa, and 300kms from Bahirdar the regional capital and 180 kms from Woldiya. The town covers an area of 92,166 kilometer square and it is one the municipal woreda that found in North wollo. The town is located at latitudinal and longitudinal extensions of 12°01’5” N 39°02’28’’ E respectively. The relative location of Lalibela town is surrounded by lasta woreda. In Lalibela town, residential land use is the dominant land use which accounts more than 1543 hectares (Lalibela town administration, 2020).

Fig.2: Map of the study area



Source: GIS

The life of the community in Lalibela town is depends on agriculture, trade and tourism. In Lalibela there is one general market, which stands once a week, every Saturday. In this day a lot of people came from different directions and the major commercial activity takes place on Saturdays and on the rest day of the week (from Monday to Friday) minimum number of people exchange their goods and service (Own observation, 2020). According to Lalibela town administration (2020), in Lalibela town, there is one Hospital, one Health center

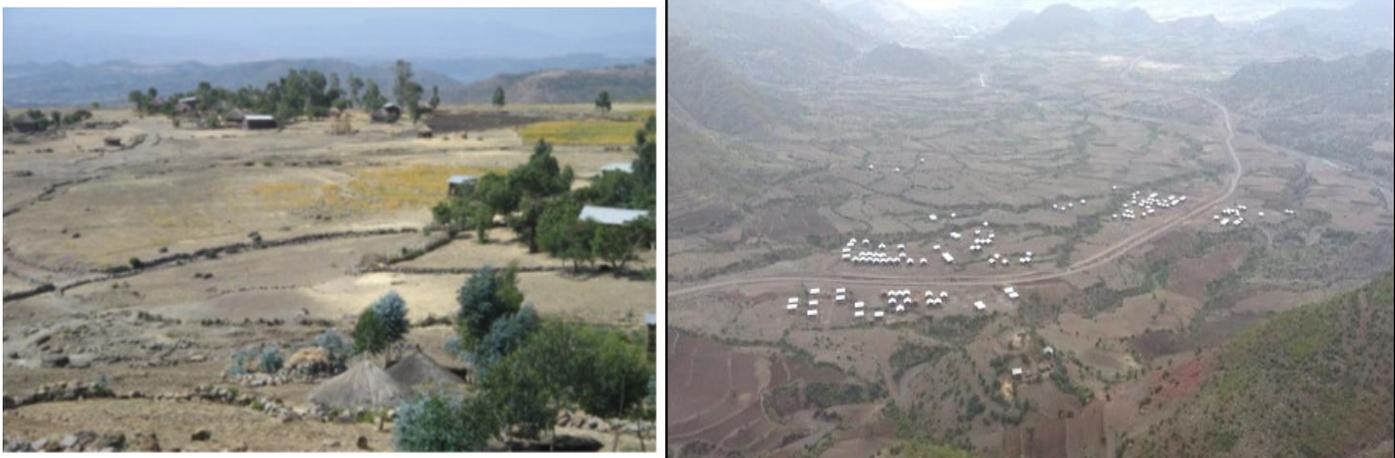
and six clinics of different levels were found in the town. Regarding to water resource, the majority of the water sources are ground, and to some extent surface water. Shemshiha is the source of ground water, which is currently used for drinking purpose for Lalibela residents. In addition to this some rivers that found in the periphery are also used for drinking purpose, cloth washing and in small amount for irrigation purpose. Regarding to education, in Lalibela, there are 4 primary school (1-8), 1 secondary school (9-10) and 1 preparatory school. Lalibela town has gotten some of the indispensable facilities such as airport, banking, health service, hospital, telephone service, electricity and water supplies are prior to the town (Lalibela town administration, 2020).

#### **4.2 Effects of urban expansion on agricultural land and on the farming community**

According to the interview of the municipal experts 2020, urban expansion has negative effects on agricultural land. Because, when urban expands outward, the amount of agricultural land become diminishing from time to time.

Based on own observation (2020), large amount of agricultural land is converted for different urban use and results reduction of urban and rural agricultural lands, displacement of farmers from their agricultural land, food insufficiency, poverty, loss of job opportunity from agricultural sector, loss of social life's and land disputes are some of the problems that occurs in the study area.

Fig 3: Urban expansion on agricultural land



Source: Field survey, 2020

According to table.1, majority of the respondents (92or, 81.42%) agreed that urban expansion on agricultural land has negative effects on the farming community because agricultural land is the only means of source of food production, income and job opportunity for the farming community and 21(18.58%) of the respondents agreed that urban expansion has no effect on agricultural land owners.

Table 1: Effects of urban expansion on agricultural land owners.

Agricultural land owners		Frequency	Percent
Negative Effect of urban expansion on agricultural land owners	Yes	92	81.42
	No	21	18.58
	Total	113	100.0

Source: Field survey, 2020

The focus group discussion pointed out that, small in number agricultural land owners are participated in trade, bought minibus cars, and built houses for rent by the compensation birr to improve their way of life.

Fig.4: Focus group discussion



Source: Field survey, 2020

The Ethiopian and abroad scholars show that, urban expansion has many positive and negative effects on farmers in the peri-urban areas. A positive effect of urban expansion includes center of market area, center of production and distribution of goods and services. The negative consequences of urban expansion are loss of large amount of agricultural land, displacement of agricultural land owners, land degradation, diminishing of rural agricultural land, over use of resources and conflict (Shishay.M, The Impacts of Urban Built-Up Area Expansion on the Livelihood in the Peri-Urban Area, 2011).

Generally, urban expansion is one of the major problems that losses agricultural land. Expropriation of agricultural land due tourban expansion has negative and positive impacts on the farming community. According to the interview of the municipal experts, field survey as well as focus group discusion, in lalibela town expansion, even if some of the agricultural land owners were benefited from urban

expansion on their agricultural land. But, on the majority of the agricultural land owners, there were negative effects on the farming community after losses of their agricultural land due to urban expansion.

### **4.3 Expropriation of agricultural land owners due to urban expansion**

According to the interview of the municipal experts 2020, from 2011 to 2020 the number of farming community who lost their agricultural lands due to urban expansion was increasing from time to time. The majority of the agricultural land owners expropriated from their agricultural land were in 2016.

Based on own observation 2020, agricultural land is expropriated for the expansion of social services, road and cooperative housing.

Fig. 5: Agricultural land converted for cooperative housing, road and social service



Source: Field survey, 2020

According to the focus group discussion 2020, the agricultural land owners expropriated from their agricultural land were increasing from 2011 to 2020. Even if the farming community were displaced from their agricultural land, majority of the agricultural lands are still present as it is without giving any purpose.

According to the constitution of Ethiopia Art 40(8), the government has the power to expropriate private property for public use and proclamation No.455/2005 Art 3(1) states that, A woreda or an urban administration shall, have the power to expropriate rural or urban landholdings for public purpose where it believes that it should be used for a better development of the society.

To conclude, the numbers of agricultural land owners displaced from their agricultural land were increasing from year to year until 2019. The majority of agricultural land owner displaced from their agricultural land were in 2016. Even if the constitution of Ethiopia Art 40(8) and proclamation No. 455/2005 Art 3(1), the government has the power to expropriate private property for public use, but it is not still properly applied. Because the agricultural lands expropriated for social service such as bus station and colleges that are indicate on structural plan are still not fully functional for the community. The expropriated agricultural lands that are devoted for bus station and colleges are still vacant land. Because these are difficult to apply in a year (takes more time) and they need huge amount of capital (Birr) in order to build.

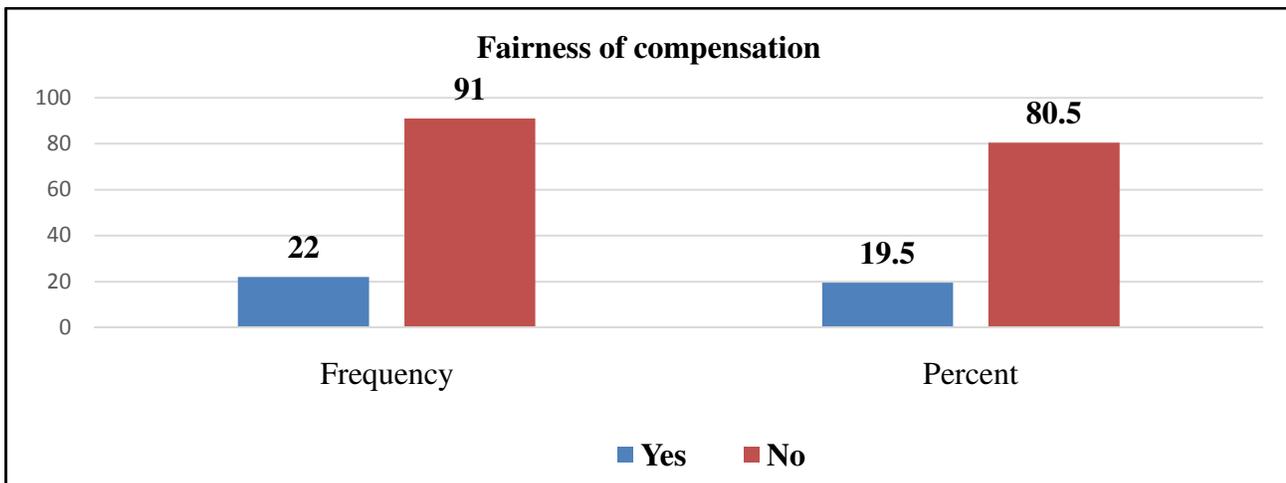
#### **4.4 Compensationfor expropriation**

According to the focus group discussion 2020, the compensation paid for agricultural land may not satisfy and cannot sustain the farming community life and the compensation does not consider the plots of agricultural land.

According to the interview of municipal experts 2020, the compensation paid for the expropriated was not balance to the property. In addition to this, the duplication rates to valuation for compensation are very low and it does not consider the family size and the property.

According to Fig. 6, out of the total respondent (113), majority of the respondents (91, or 80.5%) respond that the compensation paid for expropriated agricultural land owners were not fair, but the rest (22, or 19.5) of the respondents respond that the compensation paid for displaced agricultural land owners were fair for expropriated agricultural land.

Fig.6: Fairness of compensation



Source: Field survey, 2020

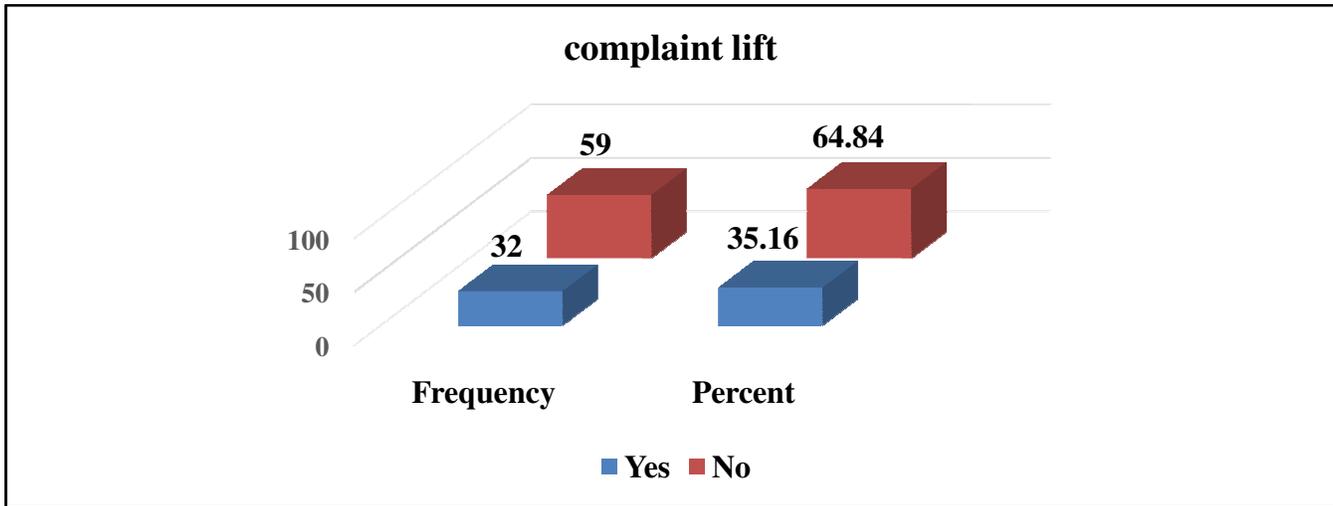
According to the focus group discussion 2020, majority of the farming community gain unfair compensation for expropriated agricultural land and the duplication rates of valuation for compensation are very low. In addition to this, the government cannot consider the current situation of crop production market value and sometimes paid compensation based on negotiation with the farming community.

To conclude, majority of the agricultural land owner were paid unfair compensation for expropriated agricultural land. Proclamation No. 455/2005 Article, 3 (1), says payment will be paid in Advance compensation, commensurate to the value of property expropriated. Even if the proclamation says, this is not always true in Lalibela town even sometimes they pay compensation by negotiation. In addition to this the duplication rate for valuation of compensation are not comfort for agricultural land owners.

#### 4.5 Complaint lifts for unfair compensation

Fig.7: shows that, majority of the respondents (91 or 80.5%) were paid unfair compensation for expropriated agricultural land. Following this, 32 (35.16%) of the respondents rise complain for the local town administration, but the rest of the respondents (64.84%) were not rise complain even if the compensation were not fair.

Fig.7: Complaint lifts for unfair compensation



Source: Field survey, 2020

According to the focus group discussion 2020, majority of the farming community were not rise complain for the respective actors. This is because majority of the farming community are very old and cannot easily move from place to place and some of the farming community frustrates to rise complain for the local town administration.

Generally, even if the compensation were not fair, majority of the respondents (59, or 64.84%) were not rise complain because the agricultural land owners are very old due to this can't travel from one actors to another and the presence of frustration on the agricultural land owners.

#### 4.6 Compensation valuation method from municipal official view

According to the interview of the municipal experts, the local governments paid compensation for expropriated agricultural land based on proclamation No. 455/2005, but for indigenous trees, such as, dodooha, busha and mentese tress were not paid compensation. Because it grows in nature, their numbers are very much and these trees are covert (not long tree) and the valuation committees were qualified and have enough knowledge regard to valuation. In addition to this the local government uses properly Proclamation No. 455/2007 Article 10 sub article (2) and states that where the land to be expropriated is located in an urban center, the property valuation committee should have relevant qualification.

Based on the analysis of the compensation document 2020, the local government paid compensation for improvements on agricultural land such as, small irrigations, some trees, but not including some indigenous trees such as, dodooha, busha and mentese.

Fig.8: compensation for expropriation document

The image shows a handwritten document with two tables. The top table has columns for land identification, compensation amounts, and other details. The bottom table is smaller and contains fewer columns. The document is written in Amharic script and includes some official stamps and signatures.

Source: Lalibela town compensation document,2020

Based on this research, valuation for expropriation includes total taking of agricultural land for urban expansion. According to the proclamation No 455/2005 Art 7(2), the amount of compensation for expropriated land may be determined based on replacement cost of valuation method. In addition to this proclamation, the civil code Art 1474(1) states that, the amount of compensation given to the land owners may be replacing the expropriated land. This means, the amount of compensation is equal to the actual damage.

To conclude,even if the proclamation No. 455/2055 says that, compensation for expropriated land is determined based on replacement cost, this is not always true in some parts of the regional states of Ethiopia (Daniel, 2013). This was also applied in lalibela town. In lalibela town, sometimes the local town administration paid compensation based on negotiation and the local town administration didn't pay compensation for some ingenious tress.

#### **4.7 Socio- economic problems on the farming households**

According to the interview of the municipal and agricultural development experts 2020, urban expansion on agricultural land has many adverse negative impacts on the farming household. Urban expansion diminishing the amount of agricultural land and it is highly affecting socio-economic activities of the farming house hold.

According to the focus group discussion 2020,the allocation of agricultural land for residential development, for infrastructural development and for social service provision has resulted loss of huge amount of agricultural land. The loss of agricultural land leads for many social problems on the farming household. Such as,displaced of social life's (idir, ikub, tezikar and senbete), tied relationship during hardship become fragmented, crossing of neighborhood linkage and self-helping on the farming household and there are also many economic problems on the farming household. Such as, the financial capital that put in the bank is low after they lost their agricultural land, loss of job opportunity from agricultural sectors, food production decreasing, food in security, food production price rising and health problem due to loss of agricultural land.

According to Barbara (2016),losses of agricultural land due to urban expansion have many negative effects which include food shortage, reduced agricultural exports, and loss of job opportunities in agricultural sector.

To conclude, urban expansion is one of the major problems that losses agricultural land. The losses of agricultural land leads for many problems, such as food production decreasing, reduced agricultural product exports, food in security, Food production price rising, Health problem, un employment and fragment of social life's,fragmentation of neighborhood linkage and self-helping on the farming household.

### **5. Results/ findings and recommendation**

Based on the above discussion, the main findings of this research were

- Majority of the respondents (92 or, 81.42%) agreed that urban expansion on agricultural land has negative effects on the farming community.

- The numbers of agricultural land owners displaced from their agricultural land were increasing from year to year until 2016. The majority of agricultural land owner displaced from their agricultural land were in 2016.
- The agricultural land owners were got unfair compensation for expropriated agricultural land.
- The compensation duplication rate for the expropriated farming community is very low. As a result, the farming community cannot sustain their life by the compensation birr.
- The losses of agricultural land leads for many socio-economic problems, such as food production decreasing, reduced agricultural product exports, food in security, food production price rising, Health problem, un employment and fragmentation of social life's on the farming community.

Based on these findings, the local government must be applied the following recommendations. These are; The local government must be expanding urban areas vertically. Even if vertical development is not accepted in the town, there is a chance to build up to G+4 buildings. It may be solving the problem of urban expansion on agricultural land; the local government should take into account of the agricultural land. Because agricultural land is the only means of source income and food production for the farming community of the area, applying zoning regulation for managing agricultural land. It used to manage effectively the agricultural land, the town administration must be developing policies that will bring compact urban development with including basic facilities in order to minimize the loss of agricultural land, the government should build social services such as school, court, health center at kebele level to minimize rural-urban migration, the government should revise the compensation duplication rate, Before the implementation of expropriation process, the agricultural land owners should be informed about the rules and regulation of expropriation and the government should develop a mechanism to rehabilitate the evicted citizen and how to manage the money they received.

## **6. Conclusion**

There were rapid conversions of agricultural land for urban use. The conversion of huge amount of agricultural land due to population increment in the study area leads for food production decreasing, food in security, food production price rising, health problem, unemployment and fragmentation of social life's of the farming community.

There are different mechanisms to reduce losses of agricultural land due to urban expansion. Such as, vertical urban development, compact settlement, applying zoning regulation of the town, building social

service at kebele level to minimize rural-urban migration, use properly family planning method, building condominium, the expansion of the town must consider agricultural land and the local government must take in to account the agricultural land to protect from urban expansion.

## References

- Afolabi, 2008. *Improving urban land use planing and managment*. Akura, Nigeriya: Adekunle Ajasan University.
- Alemu.A, 2015. Urban expansion and farmers perception in Axum town, Ethiopia. *Jornal of Sociology*, 3(9), pp. 2-3.
- Barbara, 2016. *Evaluation of urban expansion and its implication on land use*. Kiambu Count: Kenyata University.
- Belachew, 2013. *Expropriation, Valuation and Compensation in Ethiopia*. Sweden: Royal Institute of Technology.
- Budd.L and Gottdiener.M, 2005. *Key concepts in urban studies*. 2 nd ed. Los Angeles: London EC1Y 1SP.
- FDRE, 1995. *The constitution of the federal democratic republic of Ethiopia prclamation No.1/1995*. Addis Ababa: Birhanu Selam Printing Press Negarit gazeta.
- FDRE, 2005. *Expropriation of land holdings for public purpose and payment of compensation proclamation No.455/2005*. Addis Ababa: Birhanu Selam Printing press, Negarit Gazeta.
- FDRE, 2005. *Expropriation of land holdings for public purpose and payment of compensation proclamation No.455/2005*, Addis Ababa: Birhanu Selam Printing press, Negarit Gazeta.
- Firew, 2010. *The impact of horizontal urban expansion on sub-urban agricultural community livelihood*. Addis Ababa, Ethiopia: Addis Ababa University.
- Jianga et al, 2013. The impact of urban expansion on agricultural. *Jornal of land use policy*, 35(10), pp. 33-39.
- Lalibela Town Administration, 2019. *Anual report*, Lalibela: Lalibela Town Administration.
- Lalibela town administration, 2020. *Anual report*, Lalibela: Lalibela town administration.
- McGee, 1989. *Urbanization in Asia:spatial dimension and policy issues*. Honalulu: Hawaii university.
- Muluwork.Z, 2014. *An assessment of livelihood and food security of farmers displaced due to urban expansion*. Kombolcha, Ethiopia: Mekelle unversity.

- Museleku, 2013. *AGRICULTURAL LAND USE CONVERSIONS IN THE*. Nairobi, Kenya: Nairobi University.
- Njungbwen.E, 2011. Urban expansion and loss of agricultural land in UYO urban area. *Ethiopian Journal of Environmental Studies and Management*, 4(4), pp. 74-83.
- Shishay.M, 2011. *The Impacts of Urban Built-Up Area Expansion on the Livelihood in the Peri-Urban Areas*. Addis Ababa,Ethiopia: Addis Ababa University.
- Shlomo.A, 2005. *The daynamics of global urban expansion*. Washington D.C: The World Bank.
- Sisi.Z, 2016. *Evaluating Urban Expansion Using Integrated Remote Sensing and GIS technique*. Saskatoon,China: University of Saskatchewan.
- Tamirat, 2016. Horizontal urban Expansion and livelihood adjustment problem among Ex-farmers. *European Scientific*, 12(14), pp. 308-310.
- Teketel, 2015. *Urban Expansion and Its Effects on Peripheral Farming Communities: The case of Hosana town*. Haramaya,Ethiopa: Haramaya University.
- Tsega.G, 2014. *Welfare impacts of urban expansion:micro perspective from peri-urban Northern Ethiopia*. Mekelle, Ethiopia, Mekele university.
- UN, 2012. *World Urbanization Prospects*. New York: Department of economic and social affairs.
- UN, 2014. *World Urbanization Prospects*, New york: UN.
- UNESCO, 2010. *Earth architecture on the lalibela world Heritage site*, Lalibela: UNESCO.