Urban Sprawl and Its Implications on the Livelihoods of Agricultural Communities in the Vicinities of Dire Dawa City, Eastern Ethiopia

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Abstract

The study aimed at analysing the impacts of urban expansion on the livelihoods of farming communities adjoining Dire Dawa City, Ethiopia. Data were generated from key informants and heads of households that were dispossessed of their agricultural land and displaced due to urban expansion, 1985 to 2015. The findings revealed that built-up area of the city increased by 5.7-fold from 1985 to 2015, and much of that increase was induced by population growth and the associated proliferation of informal settlements. This resulted in reduction of size of per capita landholdings and livestock of agricultural households. The expansion led 92.8 per cent of the agricultural households to turn to non-farm activities, casual labour or joblessness. Drawing on the findings, the authors recommend the urgent need of regulating informal settlements and supporting affected residents to intensify and diversify agricultural pursuits.

Keywords: Urban sprawl, livelihoods, displaced/dispossessed persons, informal settlement, Ethiopia

1. Introduction

The population of the developing world is rapidly urbanizing. The continuing urbanization is projected to add 2.5 billion people to the urban population, thereby, increasing the proportion of the world population living in urban areas to reach 66 per cent by 2050, with Asia and Africa accounting for nearly 90 per cent of the increase (UN 2014). The fast rate of urbanization in the developing world is attributed to rural–urban migration, natural population increase in urban areas, economic growth, and technological change (Balchin *et al.* 2004; Marshall *et al*. 2009).

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Urban sprawl entails rapid expansion of built-up areas of a city to its outskirts in low-density rural land (Andrew 2007; Bhatta 2010) either in radial direction around the core of the city or linearly along the highways towards the countryside (Galster *et al*. 2001); and promotes conversion of surrounding rural land to urban land use (Mohan *et al.* 2011; Diriba *et al*. 2016). Angel *et al* (2005) reported that between 2000 and 2030, the built-up areas of cities of 100,000 people or more could increase by 175 per cent. Urban sprawl results from neglect of slums, services and transport; and inability to predict urban growth and failure to provide land for the urban poor who tend to move to the periphery of towns (UN-Habitat 2010). In addition, lower land price at the outskirts compared to developed areas of the towns, availability of uncultivated agricultural land, influence of speculators on the agricultural land owners for selling land to developers and failure to match demand of urban infrastructure and services are conditions favourable to urban sprawl (Rahman *et al*. 2008; Bhatta 2010). Through urban expansion, sites that are adjacent to urban areas are needed for social, economic, industry and communication, road construction and other infrastructure development and investment, which may in turn result in land dispossession and displacement of the vicinal agricultural households (Bhatta 2010; Diriba *et al.* 2016).

Urban sprawl, especially unguided urbanization, has been criticized for large-scale encroachment on fertile agricultural land, degradation of natural environments, and the challenges it presents to the livelihoods of the surrounding residents (Satterthwaite and Tacoli 2003; Rahman *et al*. 2008; UN Habitat 2010; Diriba *et al* 2016). Unplanned and uncontrolled urbanization makes provision of housing, roads, water supply, sewers and other public services too expensive. Such change is attributed to changes occurring in land use, water resources management, waste dumping and increasing competition between agricultural and residential use of natural resources (Bah *et al*. 2003). Although some groups of people benefit from new opportunities and develop strategies, emerging constraints can force vulnerable groups with limited assets to rely on precarious survival strategies (Tacoli 2001; Samat *et al.* 2014).

Urbanization in Ethiopia is accompanied by rapid urban sprawl, resulting in transformation of agricultural land into urban land (Fransen *et al*. 2008, Diriba *et al.* 2016). The average annual urban population growth rate in the country was 4.6 per cent in 2014 (CSA 2015). Urban expansion in Ethiopia has been described as unplanned horizontal expansion with impacts, which include loss of agricultural lands and conversion of croplands, forestlands, and grasslands into built-up areas (Fransen *et al.* 2008; Leulsegged *et al.* 2011; Haregeweyn *et al*. 2012; Zemenfes 2014; Ayele *et al.* 2017). Besides, many new cities are also emerging in different parts of the rural areas of the country (Haregeweyn *et al*. 2012). Hence, urban expansion is supposed to progress unabated in the near future (Adem 2010).

As is the case in many cities of Ethiopia, Dire Dawa City (DDC) is expanding year after year as a result of higher natural population growth and increased rural to urban migration. In addition, expansion of socioeconomic facilities and infrastructures resulted in conversion of land from rural to urban, causing change of livelihoods of surrounding residents. The total population of the city was 99,980 in 1984 (CSA 1984), 232,854 in 2007 (CSA 2007) and reached 277,000 in 2015 (CSA 2015). The increasing population intensified the demand for housing and other related facilities that in turn cause displacement and property dispossession of surrounding residents, affecting the sources of their livelihoods, livelihood strategies and outcomes. The Land Development and Administration Bureau of DDC in 2015 estimates that the area occupied by informal settlements constitutes close to 19 per cent of the total land use of the city; and the trend of informal settlement was on the increase.

Suburban farmers' fear of eviction from the lands they held, fear induced mainly by the prevailing rapid rate of urbanization, affects their production and productivity (Messay 2010). According to Rahman *et al*. (2008), encroachment of built-up areas on the agricultural land renders agricultural workers jobless or displaced, forcing them to move to other areas in search of different occupations. The displaced agricultural communities are less likely to compete for urban jobs due to low level of education and skills. As explained by Kaur (2008), residents of sprawls spend higher proportion of their income on transportation compared to residents living close to the city

centre. Urban sprawl could also lead to loss of open, pleasant, and beautiful green spaces, forests and environmental degradation.

On the other hand, well-planned and managed urban growth creates opportunities to non-farm employment (Alaci 2010). Urban expansion and proximity of market places to producers contributes to minimizing the risks of wasting perishable products as they promote timely delivery of the products to markets and access to affordable transportation. People who live near urban centres could have better access to social and infrastructural services such as health, education, trade, communication and transportation, as well as employment opportunities. The general objective of this research was, therefore, to analyse spatiotemporal urban expansion and its impacts on the livelihoods of surrounding residents of Dire Dawa City, east-central Ethiopia. The research contributes to designing sound strategy and policy that help to sustainably maintain the socio-economic and cultural wellbeing of the residents in the surroundings of Dire Dawa City.

Based on the lessons drawn from review of related literature, the researchers developed the following conceptual framework to guide their analysis. There are different factors responsible for urban sprawl (Figure 1). Population growth resulting from natural increase and in-migration, results in lack of affordable housing at the centre of the city and in growing demand for land. This, together with lack of land supply at individual unit in the city and lack of committed urban land use planners and administrators and poor implementation of the land use plan of the city, results in increased informal settlement and urban sprawl. Such uncontrolled urban expansion has implications on the livelihoods of the surrounding agricultural communities. Those implications include displacement, loss of farmland and grazing land, decrease in vegetation cover, loss of agricultural employment and resorting to non-agricultural pursuits and loss of income.

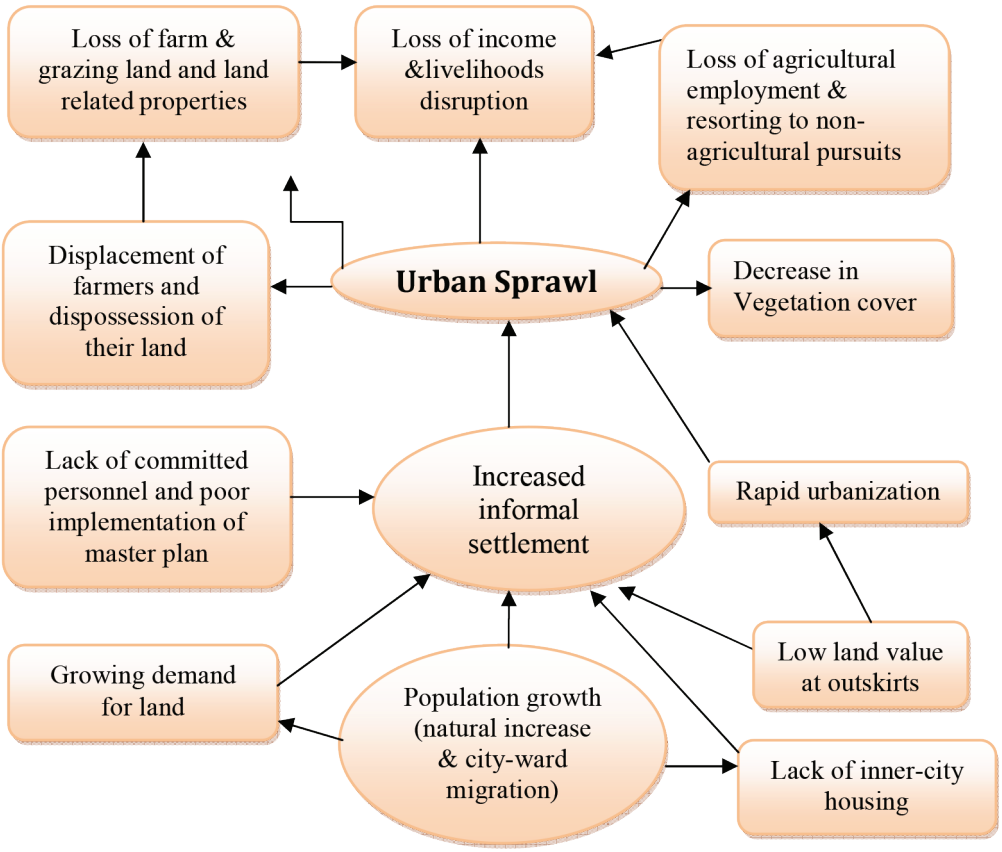

Figure 1. Conceptual Framework Showing Cause-effect Relationships of Urban Expansion

Source: Developed by authors

2. Description of the Study Area and Research Methods

2.1. Description of the Study Area

Dire Dawa City emerged as a settlement from a railway station in 1902. It is located between 9°34'30"N and 9°39'00"N latitudes and 41°35'45"E and 41°53'00"E longitudes about 515 kilometres east of Addis Ababa. (DDAIA 2005).

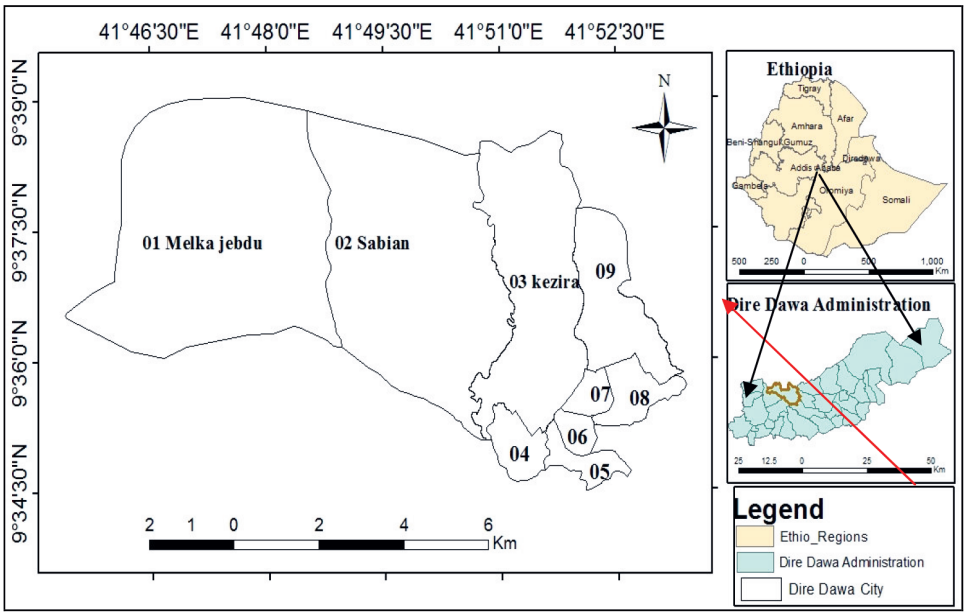

Figure 2. Location Map of Dire Dawa City and the Study Sites

Dire Dawa is situated in *Kola* (sub-tropical) agro-climatic zone where temperature is high throughout the year, with mean monthly temperature of about 25.6°C (DDAEPA 2010). May and June are the hottest months while January and December are the coldest. The average annual rainfall is about 647 mm, and the area receives maximum rainfall in autumn (September, October and November).

According to CSA (2015), the total population of Dire Dawa City was 277,000. Diverse ethnic groups reside in the City; the major ones are Oromo (45.9%), Somali (24.3%), Amhara (20.1%), Guraghe (4.5%) and others (5%). Two religious groups, Islam and Christianity, are followed by dominant proportion of the population in the Administration. Amharic is the working language in Dire Dawa City Administration (CSA 2007). Trade and services account for 43 per cent of the total urban economic engagements. Owing to its strategic location and relatively better transport network, agricultural products such as coffee, livestock, fruits, vegetables and chat that are grown in the eastern part of the country, are exported to Djibouti, Somalia and the Middle East through the Dire Dawa City. Industrial establishments account for 19 per cent of the total created

economic engagements. Subsistence agriculture is the main economic activity adjoining the city which contributes 53.7 per cent of the total household income followed by firewood and charcoal sale, and fruits and vegetables production and marketing.

2.2. Research Methods

2.2.1. Research design and approach

This study principally employed mixed research approach involving cross-sectional survey design. Questionnaire survey was employed to collect information concerning urban expansion, its causes and impacts on livelihoods, such as sources and amount of annual income, and types of occupation of household heads before and after displacement, and household asset base and survival strategies after displacement and dispossession. Key informant interviews were held with well-experienced and informed individuals to get in-depth information on the socioeconomic and physical data. As a result, formal semi-structured and informal interviews were carried out with displaced and dispossessed respondents. Moreover, semi-structured interview was held with experts in the Department of Urban Planning at Land Development and Management Bureau. In order to have an insight into the physical setting of the study area, continuous observation on size of farmland per household, land use condition and household assets, was made with the help of checklist. The observation was also meant to confirm issues that were raised in the household survey and interview. For the land use change analysis Landsat images of three observation years (1985, 2005, and 2015), acquired in dry season, were used.

2.2.2. Sampling techniques and sample size determination

DDC is divided into nine *kebeles*. Due to geographical limitations and occupation of large area of land at the centre by different organizations (military camps, stores, railway station, airport and others), the city is expanding towards Melka Jebdu. The researchers followed two-stage sampling design. In the first stage, Sabian *kebele* was purposively selected where more urban sprawl is observable and also considered as an area of future urban expansion due to industrial site in the direction, new railway station under construction and proliferation of informal settlement as

confirmed by Department of Urban Planning (DUP). From Sabian *kebele*, three sites (Bergele, Boren and Goro), that were accessible and where more urban sprawl is observed, were selected purposively. Then, a list of displaced and dispossessed agricultural households that lived in each area was generated from the *kebele* roosters to form the sampling frame. After the sample size was determined, the respondent households were selected for the survey using systematic sampling.

In addition, qualitative data was collected by conducting six (two from each site) key informant interviews with purposively selected participants who were engaged in farming in the study sites for a long period and who were well known in the community. Furthermore, two experts from the Department of Urban Planning, Land Development and Management Bureau, were purposively selected for the interview based on their relevant expertise to the specific issue under consideration.

The total number of displaced household heads registered at Sabian *kebele* in the three study sites was 800. A survey sample containing 194 households was statistically determined using the formula ($n=\frac{z^2*p*q*N}{E^2*(N-1)+z^2*p*q}$) at 95 per cent confidence level. That sample size was then proportionally distributed to the three study sites.

2.2.3. Methods of data analysis

Considering the built-up area as a potential and accurate parameter of urban sprawl, built-up area was taken as an important indicator of measuring urban sprawl (Sudhira *et al*. 2004). Pearson's correlation model was applied to verify whether there was relationship between the number of city population and urban area (in hectares) for the years 1985, 2005 and 2015. The population statistics for the years 1985, 2005 and 2015 was obtained from Central Statistical Agency.

To examine the impact of urban sprawl on the livelihoods of surrounding residents, the variables considered were: landholding size (in ha) per household, amount of income in ETB (Ethiopian currency) per household, number of livestock per household, number of permanent tree plants

(including permanent fruit trees and eucalyptus trees) per household and occupation of the household head before and after displacement from and dispossession of their land.

Both descriptive and inferential statistics were used to analyse the impact of urban sprawl on the livelihoods of the displaced households. Pearson's correlation coefficient was used to detect the level and direction of association between amount of income (in ETB) per household and landholding in hectare per household after displacement from and dispossession of their land and land-related property. Paired t-test was used to look into the difference in mean income values and average landholding sizes of the household heads before and after displacement from their farmlands and dispossession of land and land-related property. The researchers also made use of descriptive measures, such as percentages, frequency, mean and tables and graphs to present different variables.

The qualitative data was analysed following a detailed description according to the patterns and themes that emerged during interviews and observations. Additionally, key qualitative information was directly quoted and followed by appropriate descriptions of the ideas and views of the respondents.

3. Results and Discussion

3.1. Socio-demographic features of sampled household heads

Age and sex are important demographic attributes that impact livelihood activities and options. In the study area, 74.7 per cent of the total respondents were males. This may be attributed to the fact that the respondents were household heads, most of who are men. Majority of the households belong to the age group of 39 to 57 years. The majority of the residents lived in the area for more than 25 years. More specifically, 56.7 per cent of the household heads lived in the area for more than 31 years while 28.9 per cent lived in the area for 26–30 years. This means, 85.6 per cent of the respondents lived in the area for more than 25 years. Only 3 per cent lived in the area for 10–15 years. This could imply that most of the respondents were quite familiar with the study areas and were also able to witness the changes in the socioeconomic dynamics, including urbanization and its expansion and the impacts thereof.

Average family size of households was 5.6. This was above the average family size of 4.4 estimated for DDC (CSA, 2015). Therefore, other things remaining constant, a given household's expenditure is determined by the family size; and farmers surrounding the city, who were displaced due to urban expansion and thus were left with constrained income sources, could have burden of a large family size.

Data on educational background of the respondents indicated that 52.6 per cent of them could not read and write— a typical feature of the majority Ethiopian farmers. Even the figure for those who were literate tended to decline vertically from those who attained grade 1–4 (27.8%) to those who attained grade 10 (4.1%). This implied that most of the residents surrounding the city whose land had been expropriated due to urban expansion had limited educational qualifications. The limited educational qualification rendered them less able to secure viable alternative livelihoods after agriculture.

3.2. Causes of urban expansion of Dire Dawa city

The expansion of urban areas is determined by the interaction of the three broad types of phenomena. These are physical or geographic factors, high demand for land by the households or firms which inhabit the city, and policy constraints that govern land use and spatial interactions in the city (Seto *et al.* 2003). Extent and direction of Dire Dawa City expansion was analysed by delineating its administrative boundary for the years 1985, 2005 and 2015 using Landsat image of these years (Table 1). Reconnaissance survey and ground verification were also made in the classification of land use/land cover.

Table 1. Population growth and urban built-up area growth trend, 1985–2015

Years	Total population	Population change 1985–2005	Population change 2005–2015	Population change 1985–2015	Urban built-up area (ha)
1985	103,789	124,683			517
2005	228, 472		48,528		2585
2015	277,000			173,211	2976

It is obvious that population growth has a direct impact on urban expansion. In this case, results of the data presented in Table 1 show that the built-up area increased with increasing population of DDC. As a result of the urban expansion, vicinal farmland decreased from 967 ha in 1985 to 478 ha in 2015; vegetation cover decreased from 1183 ha in 1985 to 1038 ha in 2015. Barren land decreased from 4195 ha in 1985 to 2370 ha in 2015, with annual decrease of 60.8 ha per year. For the overall study period (1985–2015), population increased 2.7-fold while urban built- up area increased by almost six-fold (5.8), at an average growth rate of about 15.8 per cent (82 ha per year).

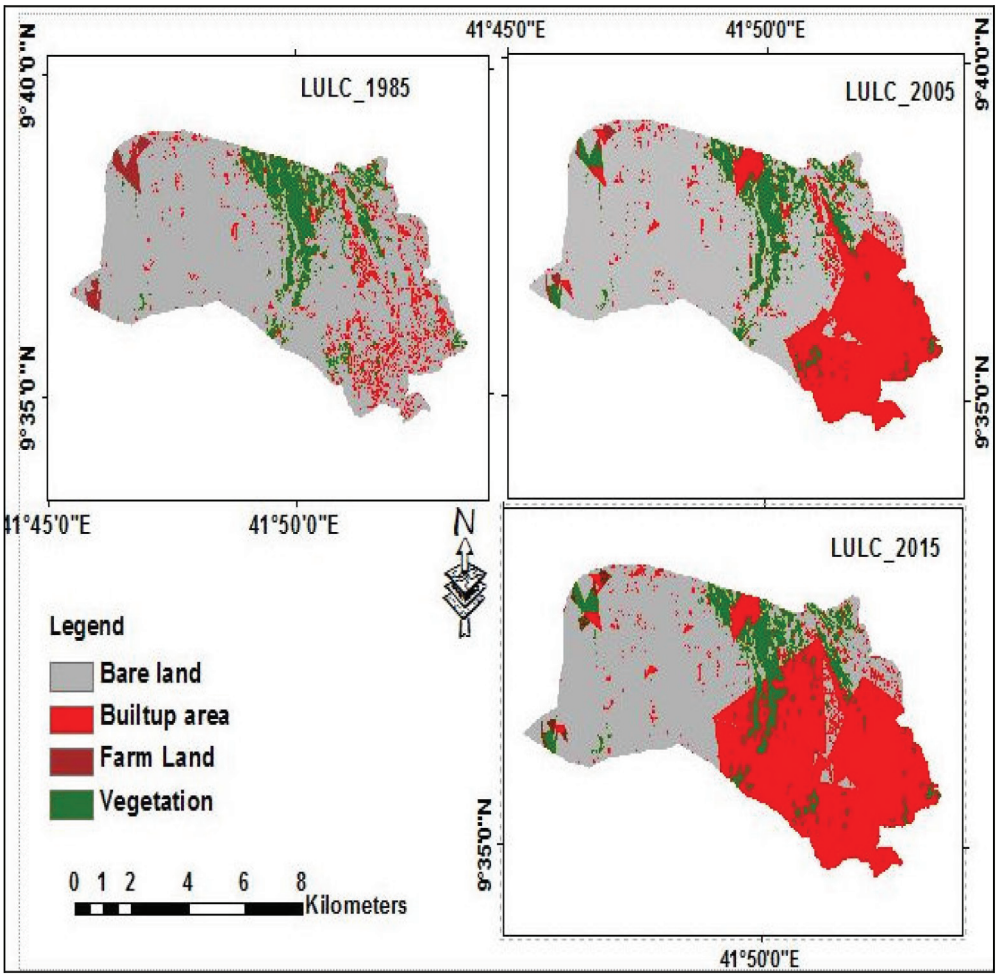

Figure 3: Land Use Land Cover Map of Dire Dawa City in 1985, 2005 and 2015

Results of the Pearson correlation test for urban built up area (in ha) and total population indicated the existence of strong positive association between population growth and urban built up area during the period 1985 to 2015 (R=0.992). The analysis is significant at 0.05 level of significance (1- tailed=0.04) as summarized in Table 2.

Table 2. Pearson Correlation Test for urban built up area in ha and total population

		Total population	Urban built up area (ha)
T_pop	Pearson Correlation	1	0.992*
	Sig. (1-tailed)		0.040
	N	3	3
U_bui	Pearson Correlation	0.992*	1
	Sig. (1-tailed)	0.040	
	N	3	3

*Correlation is significant at the 0.05 level (1-tailed).
Source: Own computation based on CSA data (2015) and Landsat data of 1985, 2005 and 2015 March–April 2016)

Table 3. Respondents response to causes of urban expansion

Causes of urban expansion	Number of respondents
Population growth	174
Lack of affordable houses at the centre	87
Poor implementation of master plan	125
Cheap land value in the peripheral area	117
Land unaffordability at individual level	165

According to the data presented on Table 3, in an attempt to identify the causes of urban sprawl, an overwhelming majority of the respondents (89.7%) were of the opinion that the cause of urban expansion was population growth. Another large majority of the respondents (85%) pointed out land unaffordability at individual level and the quest for informal land at the city outskirts as a prominent cause of urban expansion. Other causes of horizontal urban expansion indicated by the respondents included proliferation of informal settlements because of lack of strict manoeuvring, availability of cheaper land in the periphery, and lack of affordable housing at the centre. The results from the key informant interviews confirmed a similar situation. City expansion was attributed to several factors including investments on productive and service sectors. Likewise, farmers preferred

to sell their land informally for individual developers rather than opting for taking the very low compensation from government, where the maximum land lease price was 3.45 ETB/m² and the minimum 0.96ETB/m² while the average was 2.21 ETB/m² for expansion zones, which often was not provided to the displaced on time.

Data from the DDC Department of Urban Planning indicated that the number of informal housing units in 1985 was 12,631 and covered over 1,705 square kilometres. After formalization of informal housing in 2001/2, even the number of new informal housing units was 6,200, which was close to 22 per cent of the housing stocks in the town in 2005 and 80 per cent of it was formalized in 2011. At the end of 2015, the number of new informal housing units was 13,434 covering over 2,055 square kilometres and inhabitants in the informal settlement were estimated to be 47,114.

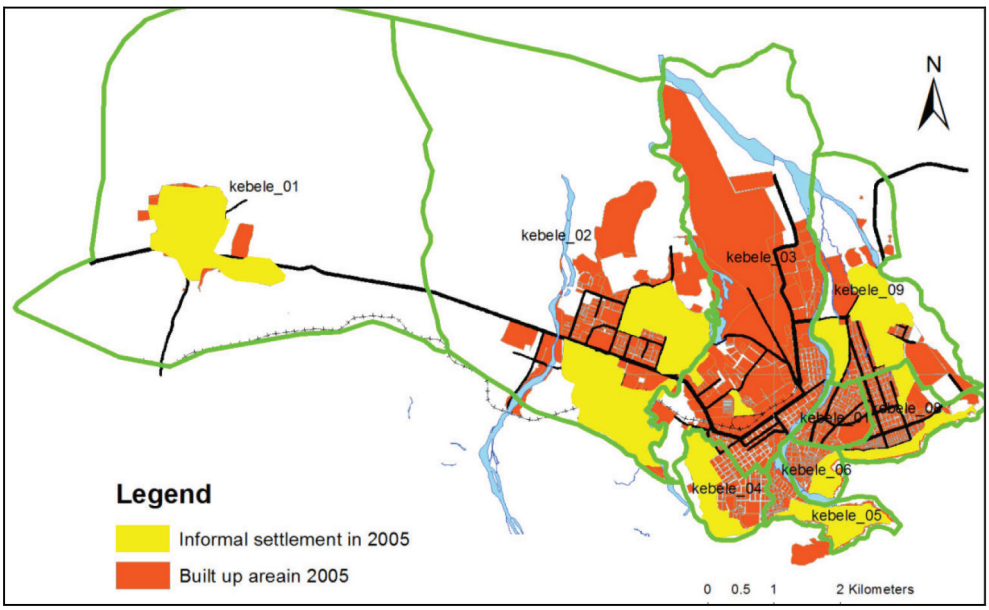

Figure 4: Location of Informal Settlement in 2005
Source: DDAIA (2005).

During the preparation of the Integrated Development Plan of DDC in 2005, proposals and strategies related to housing indicated the need to address the existing (29,000) and future (25,000) demand for housing units. However, at the end of IDP in 2015, the city was able to address only 11 per cent of the

demands for 54,000 housing units while provision of plots on individual basis was banned since 2006. In-depth interviewees pinpointed that migration of people from rural areas to the city was increasing from time-to-time to seek new opportunities and attempting to escape from rural poverty, landlessness, reduced agricultural productivity and other rural push factors although the situation in the city was precarious. They further indicated that the city was a melting pot for in-migrants from almost all parts of the country, including from other urban centres. Most of them were usually engaged in the informal sector, and lived in the low-density surrounding areas of the city as a result of low income; that, in turn, contributed to the expansion of the city.

From the points mentioned hitherto, it could be understood that population growth through both natural increase and migration processes, informal settlement resulting from banning of land delivery on individual bases, and lack of housing at the centre of the city accompanied by cheap land value in the surrounding area appeared to be the major causes of urban expansion in the DDC.

3.3. Impacts of urban expansion on livelihoods of adjoining agricultural communities

3.3.1. Urban expansion impacts on residents' asset possession

To measure urban expansion effects on the livelihoods of surrounding residents, asset possession and landholding (farmland, forestland, and grazing land) before expansion over their vicinity as compared to their current possession status was considered. Attempt was made to identify the proportion of land households were dispossessed due to urban expansion. Moreover, total numbers of their livestock, which include oxen, cows, sheep, goats, donkeys and camels before and after dispossession and displacement, were compared (see Table 4). Additionally, their total number of permanent tree and fruit trees before and after displacement and dispossession was compared.

Table 4. Test of variation in amount of land holding of respondents before and after urban expansion

	Paired differences					t	Df	Sig. (2-tailed)
	Mean	*SD*	*SD Error Mean*	*95% confidence interval*				
				Lower	*Upper*			
Paired differences of land holdings before & after dispossession	0.874	1.332	0.096	0.684	1.064	9.09	191	0.000

Based on the given sample data, total amount of land holding per HH in hectares after dispossession and displacement was significantly lower than total amount of landholding per HH in ha before displacement ($P < 0.5$) (Table 4). The total amount of landholding per HH of the residents under the study sites was reduced due to urban expansion on their farmland.

Table 5. Comparison of land holding and livestock per household before and after displacement

Total landholding possession per HH	**N**	**Sum**	**Mean**
Before displacement/dispossession (ha)	194	198.57	1.023
After displacement/dispossession (ha)	194	30.68	0.158
Total number of livestock per ***HH***			
Before displacement	194	7561.00	38.97
After displacement	194	915.00	4.72

The data presented in Table 5 shows that 194 residents in the study sites had a total landholding of 198.57 hectares (mean farmland holding of 1.023 hectares per household) before encroachment of urban expansion, which was reduced to 30.68 ha (0.158 hectares per household) due to urban expansion into their farmlands. Hence, the average land holding size of the residents shrank by about 85 percent. The key informants also indicated that loss of land was aggravated since 2010 in Goro and Bergale sites, and it has become more common in Boren site since 2013. As a result, agriculture (crop production and livestock rearing) was becoming very difficult in the study sites with average land holdings of 0.158 ha per household even

though agriculture was identified as it contributed 53.7 per cent to rural household income in DDA (DDAIA 2005).

Similarly, a further analysis of the data presented in Table 5 shows that the total number of livestock owned by the residents in the study area was reduced by 88 per cent after urban expansion took place. The overall decrease in livestock population size was attributed to the feed shortage resulting from shrinkage of the land holding size following urban expansion. From this, it can be deduced that urban expansion has increasingly reduced the significance of the livestock sub-sector to the livelihoods of agricultural communities in the study areas.

In addition, urban sprawl led to 82 per cent reduction in the total number of permanent tree plants (including fruit trees) that had been owned by the residents in the study area before displacement from and dispossession of their farmland. This would imply that the income residents got by selling fruit, firewood and charcoal would also decrease.

3.3.2. Impacts of urban expansion on farmers' financial capital

Measuring the sample household's financial capital before and after urban expansion is pivotal to understanding the livelihood changes of the surrounding farming residents. As such, the average annual income households earn from major livelihood components, such as the sale of crop products, livestock products, charcoal and firewood has decreased following urban expansion (see Table 6).

Table 6. Test of variation in amount of household income before and after urban expansion-induced displacement and dispossession

Total annual income in ETB	**Paired Differences**					**t**	***df***	**Sig. (2-tailed)**
	Mean	***SD***	***Std. Error Mean***	***95% confidence interval***				
				Lower	*Upper*			
Paired differences for the before and after displacement	8525	46144	3330	1956	15093	2.6	191	0.011

The average annual income (in ETB) for farming households before they were incorporated as part of the urban area was significantly different ($p < 0.5$) from their average annual income (in ETB) after displacement and dispossession form their agricultural land because of urban expansion (Table 6). Three-fourths of the agricultural household heads experienced loss in their annual income due to the effects of urban expansion. Corroborating this finding, key informants revealed loss of income after urban expansion into their area. However, there were also few cases where incomes of households increased owing to supplementary income obtained from selling ground water to the informal settlers who lacked provision of clean water, driving horse carts, or renting houses as the area was closer to the city centre.

3.4. Survival strategies of the farming households affected by urban expansion

Urban expansion tends to compel the surrounding agricultural population to change their survival strategies as landholdings and livestock resources dwindle. As shown in Table 7, before displacement from and dispossession of their land due to urban expansion, almost all the respondents were engaged in entirely, or at least partly, agricultural activities. Whereas, after the urban expansion, an overwhelming majority of the household heads (92.8%) were engaged in non-agricultural activities due to the displacement from and dispossession of their agricultural land due to urban expansion; while 4.6 per cent of the households were engaged in agricultural activities and 2.6 per cent were jobless.

Results from the key informant interviews clearly indicated that displaced and dispossessed residents were engaged in more than one activity to cover their household needs but they did not hide that heavy daily labour, particularly rock breaking activities, led to severe health problems as they got older.

Table 7. Livelihood strategies of agricultural household heads before and after urban encroachment

Occupation of household heads before displacement/dispossession	**Frequency**	**Per cent**
Farming own land	48	24.7
Raising cattle	13	6.7
Farming and raising cattle	88	45.4
Farming and firewood selling	7	3.6
Farming, raising cattle and fire wood selling	18	9.3
Firewood selling and raising cattle	20	10.3
Total	**194**	**100**
Occupation of household heads after displacement/dispossession		
Raising own business	50	25.8
Employed in organization	30	15.5
Daily labourer	73	37.6
House renting	58	29.9
*Total respondents engaged in the **above** non-farm activities*	***211***	***92.8***
Agriculture/farming	9	4.6
Jobless	5	2.6
Total	**225**	

Regarding the impacts of dispossession, a 48 years old interviewee from Bergele site said:

> I never forget the memories of my golden life that I had experienced before most of my farmland was dispossessed owing to urban expansion. At that time, I had sufficient farmland and over fifteen heads of livestock, of which five were cows giving milk, and thus, I did not have to engage in daily labour work for our survival. My wife used to go daily to the city to sell milk and buy our daily requirements. My children used to have what they wanted…but look at what happened to us now with the expansion of the city to my farmland. I have lost everything. I sold my land for very small money and was left only with less than 0.025 ha of land on which my house was built. I did not have the entrepreneurial skills to begin business activity even with the small money I had got to secure sustainable livelihoods. Now I am engaged in splitting rock for sell that is the basic income-generating activity in Bergele. Everything in our life is based on this activity. I have nothing to buy clothes for my children, as before, for holidays, and I even struggle to buy them uniform and school materials.

4. Conclusion

Even though urbanization in Ethiopia is at its infant stage, Dire Dawa City is in a state of rapid growth and horizontal expansion. The built-up area increased almost 5.7 fold from 517 ha in 1985 to 2976 ha in 2015, at an average annual growth rate of about 15.8 per cent (82 ha per year). The built-up area expansion took place in all directions; but, it was more pronounced into the west low-lying flat land along the main road towards Melka Jebdu, to the south-west towards Genderige and to the north-west towards the recently established industrial park and Dire Dawa University.

The main causes of urban expansion were population growth mainly due to natural increase and in migration, which spurred increase in informal settlement as there was limited provision of land for individual builders, cheap land value at the peripheral area and lack of affordable housing at the centre. The farming households adjoining the city have gradually lost their agricultural land, and the number of permanent trees and livestock they possessed declined. Most of the farming households (75.3%) experienced income loss due to urban expansion; 52.1 per cent have become casual daily labourers, and others have become jobless. The farming households were compelled to supplement household income from non-farm endeavours such as daily labour, water vending, and renting their houses.

Urban expansion cannot be halted, but, with proper management and planning, its expansion could be geared in a desirable and sustainable way, protecting the fertile vicinal agricultural land. To that end, formulation of regulations that deal with the preparation and implementation of plans for the city under the framework of the Urban Planning Preparation, Implementation and Development Proclamation is vital. In order to reduce the informal settlement, the municipality has to ensure timely revision of the way it provides land for house builders, provide condominium houses at affordable prices and enforce strict measures to prevent future expansion of informal settlements. Future land use plans prepared by the municipality should consider the livelihoods of the affected residents and economic contribution of agriculture from the surrounding area. Displaced and dispossessed residents need to be provided skill training opportunities, as

well as training on financial and business operation and management to sustain their livelihoods.

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