

Chapter 2

Themes in Urban Infrastructure Research in Ethiopian Cities

Abstract Chapter examines foremost types of urban infrastructure which are popularly investigated together with the cities where these investigations are executed. Review attempts to synthesize the unique characteristics of Ethiopian cities in term of their infrastructure paucity or; abundance otherwise.

Keywords Road • Energy • Storm water drainage • Sewerage • Integration • ICT • Water supply • Green infrastructure • Sanitation • Solid waste management • Social infrastructure • Health • Education • Financing • Addis ababa • Dire dawa • Bahir dar • Mekelle • Jimma • Hawassa

2.1 Introduction

Wherever you go, in Ethiopian capital Addis Ababa, construction of a solid structure could be easily seen, this is what we say infrastructure boom (BBC [2014](#)) but the scenario is not the same across all Ethiopian cities, indeed; glitches even exists at the capital. A total of 189 different research topics concerned to urban infrastructure and services were reviewed in this study which is the subject matter of the first part of this chapter. Whilst the second part offers minutiae of 78 scrutinized Ethiopian cities, varying in size, population and location.

2.2 Major Infrastructures Themes Investigated by Researchers in Ethiopian Cities

A variety of urban infrastructure and services were considered by research investigators in Ethiopian cities; which includes specifically physical infrastructures—like road, energy, storm water drainage, water supply and sanitation, green infrastructure, solid waste management infrastructure, and ICT infrastructure and social infrastructure—mainly education and health. Apart from these; some

research investigations were focused on organizational and governance issues such as integration of infrastructures and services, government policies on infrastructure, their challenges and solution, infrastructure for tourism, financing of infrastructure, rural–urban linkages, and infrastructure in relation to urban sprawls.

2.2.1 Road Infrastructure

Roads has a key role to play in transporting people goods physically; scholars researched, cobblestone roads which are the one indigenous material based, labour intensive, environmentally sustainable and viable infrastructure, also one of the best practices in the country adopted as a preferable mode of infrastructure provision policy specially in the interiors of the Ethiopian cities. Challenges, opportunities, employability potentials of cobblestone roads and its role in poverty alleviation are largely analysed by the scholars (Ahmednur 2009; Shewarega 2009; Mola 2010; Solomon 2010; Yeshiwas 2010; Adem 2011a, b; Assefa 2011; Kalayu 2011; Wube 2011; Haileyessus 2011).

Additionally, provision and management of road Infrastructure, its integration with other infrastructures, role in city development, performance of Ethiopian road fund in road maintenance, community participation in planning, construction, maintenance, road safety, economic role of roads, are some other issues which are considered for research (Dereje 2009; Hassen 2009; Kokebe 2009; Zemedkun 2009; Hailemichael 2010; Lemessa 2010; Negede 2010; Mesfin 2010a, b, c; Fufi 2011; Abdissa 2011; Asnake 2011; Dinkayehu 2011; Mohammedyakob 2011; Nasra 2011; Niman 2011; Said 2011; Azmeraw 2011; Zeleke 2011).

Furthermore, road Infrastructure for visually handicapped and labour-based practices like natural soil stabilization technology was among other themes of study (Samuel 2011; Wubiye 2011).

2.2.2 Energy

Cities are doubtlessly, the larger consumer of energy while the developing countries like Ethiopia are still consuming a huge amount of bio-masses for cooking purposes hence researchers attempted to evaluated socio-economic and environmental impact of improved stoves (Ahmed 2008; Wodaje 2010; Wubishet 2010). Issues of electricity were also appeared pertinent for research (Alehegne 2011).

2.2.3 Infrastructure for Urban Storm Water Management

Ethiopia cities at large, are troubled with storm water leading into floods especially during the rainy season due to inadequate installation of desired infrastructure,

problem is more critical in cities of highland regions like Addis Ababa, Adigrat; though it exist in cities with plain geographies like Bahir Dar. Scholars attempted to examine the role of integration among road and drainage infrastructure in offering solution for urban floods, while the other associated themes were; impact of urban flood on urban infrastructure, PPP in the integration of road and drainage, and impact of delayed provision of such infrastructures (Gebremariam 2008; Moges 2008; Dagnachew 2009; Kassaye 2009; Tamirat 2010; Wendale 2010; Adnan 2011; Mustefa 2011; Beniyam 2011; Birhanu 2011; Dereje 2011; Beyene 2011; Girmay 2011; Mitiku 2011; Shanbel 2011; Siraj 2011; Workineh 2011; Zamil 2011).

2.2.4 Water Supply

Importantly, water is an environmental or ecological resource and an economic good as well, despite of the fact of Ethiopia's being a water tower for African continent, because of nature's bounty in form of many lakes and rivers; sustainable urban water supply is still an issue of serious concern.

Themes, accentuated by the research investigators were: household accessibility of urban water supply, water infrastructure in new self-added residences, financing challenges and prospects of water and sanitation services, sustainability of water infrastructure, community participation, innovative options for water infrastructure strengthening, customer's satisfaction, supply and consumption, impact of urban expansion on water supply systems, factors affecting water demand and supply, operation and maintenance of water supply projects, non-revenue of water and challenges on cost recovery and water supply asset management (Meseret 2008; Ermias 2009; Tmuzghy 2009; Kinfe 2009; Teka 2010; Abdu 2010; Abera 2010; Ahmed 2010; Alemayehu 2010a, b; Desalegn 2010; Bedada 2010; Bekele 2010; Belay 2010; Berihun 2010; Birhanu 2010; Birishet 2010; Degenet 2010; Dereje 2010; Gelane 2010; Lulu 2010; Maru 2010; Mesfin 2010a, b, c; Mohammed 2010; Salim 2010; Selamawit 2010; Semeneh 2010; Tesema 2010; Abdisamad 2010; Kumulachew 2010; Aklilu 2010; Belete 2010; Tsegay 2010; Abdi 2011; Adem 2011a, b; Aden 2011; Alemu 2011; Amanuel 2011; Amsalu 2011a, b; Brhanu 2011; Getachew 2011a, b, c; Haftamu 2011; Hussien 2011; Mulugeta 2011; Mengistu 2011; Meskerem 2011; Mohammed 2011a, b; Negese 2011; Negussie 2011; Shimeri 2011; Shishay 2011; Taye 2011; Abraham 2011; Welancho 2011; Wesenseged 2011; Wointu 2011; Yesuf 2011).

2.2.5 Social Infrastructure

It was observed that the study of soft or social infrastructure in urban areas was not really popular among urban infrastructure scholars in general; though a few like

Kifle (2008) assessed the need of social infrastructure (health and education) in context of MDGs. Abiot (2009) assessed the provision, management and financing of healthcare services while the comparison between private and public provision of health amenities were also examined (Hailab 2009; Selamawit 2011; Amsalu 2011a, b; Hadra 2011; Mebruka 2011; Werede 2011; Haregua 2011; Dibera 2011; Kelifa 2011; Meseret 2011; Munir 2011; Tewfik 2011).

Financing of educational infrastructure (Tilahun 2010) assessment of educational infrastructure provision and community participation were additional issues under investigation (Abebe 2011; Adane 2011; Amine 2011; Asegedech 2011; Helen 2011; Leykun 2011; Measho 2011; Million 2011; Mulatu 2011; Rezene 2011; Seboka 2011; Teshome 2011). Role of BPR in educational infrastructure improvement was amongst the novel topic reconnoitred (Ayalneh 2011).

2.2.6 Urban Green Infrastructure

Urban green infrastructure was an emergent topic chosen by a limited number of research investigators (Senbeta 2009; Abdulahi 2010; Beyene 2010; Tiruset 2010; Alganesh 2011; Mechal 2011; Eyader 2011; Genet 2011; Nigussie 2011).

2.2.7 Rural–Urban Linkages

Sisay (2009) concentrated his study on infrastructure provision as a tool in rural–urban linkages (Sisay 2009).

2.2.8 Urban Infrastructure for Tourism

Additionally, a few researchers realized role of infrastructure and services in the promotion and development of tourism in Ethiopian cities (Yohannes 2009; Leul 2010; Fahmi 2010; Habtamu 2010; Mesfin 2010a, b, c; Shakir 2010; Agmas 2010; Abraha 2011; Merkebu 2011; Nestanet 2011).

2.2.9 Urban Infrastructure for Solid Waste Management and Sanitation

Current practices of solid waste management and sanitation in Ethiopian cities, impact of poor sanitation on human health and impact of urban growth on sanitation

were topics related to urban environmental infrastructure and services were also scanned (Herya 2010; Alazar 2011; Bedassa 2011; Merga 2011; Sisay 2011; Asnakech 2010; Fentahun 2010; Getnet 2010; Goitom 2010; Kinfe 2010; Tedelech 2010; Demelash 2010; Gebrehiwot 2010).

2.2.10 ICT Infrastructure

Issues associated with ICT infrastructure in Ethiopian cities includes: the role of ICT applications in urban local governance development, importance of mobile telephony in urban management, challenges of ICT accessibility in fostering urban socio-economic development, ICT for education infrastructure, benefits, challenges and prospects of ICT in city sector bureau and IT infrastructure provision and utilization for land administration and management (Gizaw 2010; Wogame 2010; Yimer 2011; Getacher 2011; Yeshiemebet 2011; Zena 2011).

2.2.11 Integrated Urban Infrastructure and Other Themes

Challenges and opportunities on integrated provision of urban infrastructure and services, their provision in new formal settlement and assessment of government policies were additional themes chosen by some research scholars (Michael 2009; Abiy 2010; Alemayehu 2010a, b; Asfaw 2010; Getachew 2011a, b, c; Gadet 2010; Hailekiros 2011; Moges 2011; Nigus 2011). Moreover, Maru (2011) has examined the effect of sprawling in the provision and management of urban infrastructure and services. Ethiopia is predominantly a country dependent upon agriculture and dairy-associated occupation, a researcher (Yalemzewd 2010) has attempted to examine the scenario aimed at improved infrastructure for livestock markets.

2.3 Reviewed Cities

Ethiopia is a multi-ethnic country administratively divided into two chartered city regions namely Addis Ababa (capital city of Ethiopia) and Dire Dawa and nine regional states including—Afar, Amhara, Benishangul Gumuz, Gambela, Harari, Oromia, Somali, Southern Nations Nationality People's and Tigray.

According to CSA (2007) Ethiopia has 972 urban centres though there are only 86 cities which have a population of more than twenty thousand; pace of urbanization is very fast in the country though country has a population of 73.8 million, out of which only 11.8 million are urban residents, which is merely 16 %.

This review includes 80 cities (see Table 2.1 and Fig. 2.1).

Table 2.1 Reviewed Ethiopian cities

Region/chartered city region	City
1. Addis Ababa chartered city region	Addis Ababa
2. Dire Dawa chartered city region	Dire Dawa
3. Afar region	Dubti
4. Amhara region	Arereti, Bahir Dar, Bati, Chagni, Dangila, Debark, Debre Birhan, Debre Markos, Debre Tabor, Dessie, Gondar, Injibera, Kamise, Motta, Sekota, Wereta, Woldia
5. Benishangul–Gumuz region	Assosa, Mandura
6. Gambela region	Gambela
7. Harari region	Harar
8. Oromia region	Adama, Aira, Ambo, Arsi Negelle, Bedessa, Bishoftu, Bule Hora, Burayu, Chiro, Dembi Dollo, Dhera, Gebreguracha, Gimbi, Goba, Harawacha, Holeta, Jimma, Modjo, Nedjo, Nekemte, Robe, Sebeta, Shashamane, Welenchiti, Wolliso, Yabello
9. Somali region	Jig-Jiga
10. Southern Nations Nationality People's Region-SNNPR	Aleta Wondo, Arba Minch, Bele, Bonga, Dilla, Durame, Halaba, Hawassa, Hossana, Jinka, Masha, Soyama, Tarcha, Wolaita Sodo, Wolkitte, Worabe
11. Tigray region	Abi-Adi, Adigrat, Adiremets, Alamata, Axum, Frewyne, Humera, Korem, Mekelle, Shire Endassilasie

2.3.1 Addis Ababa Chartered City Region

Addis Ababa (New flower in English) is the largest city, and one of the two chartered cities of Ethiopia which is also serving as the capital of the country. City was founded in 1886 by Emperor Menelik-II. The city is located at the elevation of 2355 m, having a population of 3.4 million (2008) and area of 527 km².

2.3.2 Dire Dawa Chartered City Region

Dire Dawa is the second chartered city region, located at the eastern part (9.6°N, 41.9°E) of the country on the bank of Dechatu River. City lies on the elevation of 1276 m; it has a population of 607,000 (2008), with a geographical spread of, 1.2 km².

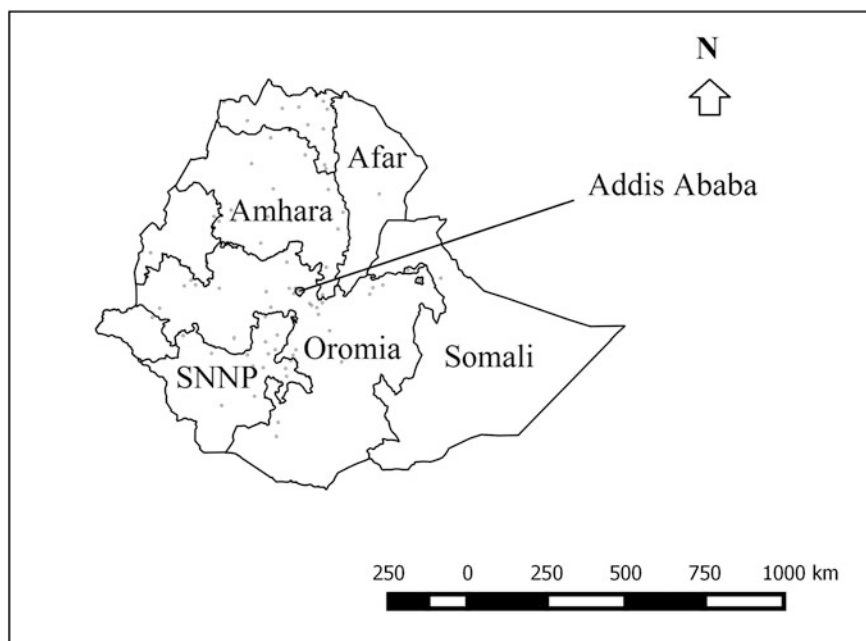


Fig. 2.1 Reviewed Ethiopian cities

2.3.3 Afar Region

Afar region is one of the emerging regions in Ethiopia and also the homeland of Afar people. Although the capital of Afar region is Samera, the town reviewed in the region is Dubti.

Dubti

Dubti is a town situated in north-eastern part of Ethiopia (11.7°N, 41.1°E) near to Awash River and Addis Ababa-Djibouti highway. The city has a total population of 16,346 (2007). The town is a level plain.

2.3.4 Amhara Region

Amhara region is home to Amhara ethnic group; it has its capital in Bahir Dar. A total of 19 towns are reviewed from this region.

Arerti

Arerti is a small town in north Shoa administrative zone, located at highland (8.9°N, 39.4°E coordinates) with a distance of 135 km east of national capital Addis Ababa and 705 km south of regional capital Bahir Dar.

Bahir Dar

Bahir Dar is the capital of Amhara region, located at 11.6°N 37.9°E coordinates. It has a population of 318,000 (2007) and an area of approximately 26 km². City is also known for Lake Tana (originating source of River Nile). City is a level plain with an average elevation of 1800 m.

Bati

Bati is an important market town (11.2°N and 40.1°E) in the Oromia zone of Amhara region of north-central Ethiopia. Town has an elevation of 1502 m, population of 24,000 (2007).

Chagni

Chagni is a town situated at north- western part of Ethiopia (10.9°N and 36.6°E) in Amhara region. It has an average elevation of 1583 m; and population of 30,000 (2005). The town serves as administrative capital of Guangua woreda.

Dangila

Dangila town is located at 11.2°N latitude and 36.8°E longitudes. Town has a population of 36,000 (2007). The town is surrounded by Amen and Fincha rivers, with an average elevation of 2120 m.

Debark

Debarq is the closest town of Semien Mountains National Park, located at Gondar-Axum highway (13.1°N and 37.9°E) in northern Ethiopia. It falls in Semien Gondar zone of Amhara region on the elevation of 2850 m. It has population of 21,000 (2007).

Debre Birhan

The town is located at north-eastern part of Ethiopia (9.6°N and 39.5°E), and serves as capital of North Showa zone of Amhara region. It has elevation of 2750 m and population of 95,000 (2009). The town believed to be in existence for more than six centuries.

Debre Markos

Debre Markos is situated in north-central part of Ethiopia (10.3°N and 37.7°E), in Amhara region, it comes into Gojjam zone. Town has an average elevation of 2446 m, with a population of 71,000 (2007).

Debre Tabor

Deber Tabor is found at Debub Gondar Zone, north-central Ethiopia (11.8°N and 38.1°E) in Amhara region. Town has an average altitude of 2705 m, population of 39,000 (2008) and geographical area of 6 km².

Dessie

Dessie is situated in north-central part of Ethiopia (11.2°N and 39.6°E), in Amhara region, it comes into Debub Wollo Zone. Town has an average elevation of 2470 m, with a population of 279,000 (2012).

Gondar

Gondar is the capital of Semien Gondar zone, north-scentral Ethiopia (12.6°N and 37.4°E) in Amhara region. Town has an average altitude of 2133 m, population of 358,000 (2008). It had privilege of being ancient Ethiopian capital.

Injibera

Injibera is a town in north-central Ethiopia, which serves as capital of Agew Awi Zone in Amhara Region. Town has a mountainous topography and average elevation of 2560 m. Population of the town was 21,000 in 2007 census.

Kamise

The town is located at north-eastern part of Ethiopia (10.5°N and 40.3°E), and serves as capital of Oromia zone of Amhara region. It has elevation of 1424 m and population of 19,000 (2007).

Motta

Motta is a town in north-central Ethiopia (11.1°N and 37.9°E), falls into Misraq Gojjam zone in Amhara Region. Town has an average elevation of 2266 m. Population of the town was 39,000 in 2007 census, spread over a geographical area of 8 km².

Sekota

Sekota town is located at north-eastern part of Ethiopia (12.6°N and 38.9°E), and lies at Wag Hemrazone zone of Amhara region. It has elevation of 1424 m and population of 22,000 (2007).

Wereta

Wereta is a north Ethiopian town (11.9°N and 37.7°E), located at Debub Gondar Zone of Amhara Region. It has an elevation of 1828 m and population of 13,000 in 2010.

Woldia

Woldia is a hilly market town of northern Ethiopia (11.8°N and 39.5°E), comes into Semien Wollo zone of Amhara region. It has an average altitude of 2112 m with a population of 46,000 (2007).

2.3.5 Benishangul–Gumuz Region

Benishangul–Gumuz, region is home of Berta or Benishangul and Gumuz ethnic groups; spread over western part of the country. Capital of the region is Assosa. A total of 2 towns were reviewed in the study including the regional capital Assosa and Mandura.

Assosa

Asosa is the capital of Benishangul–Gumuz, region located at western part of Ethiopia (10°N and 34.4°E). The town has an elevation of 1570 m with a flatland topographical features. The population of the city was 22,000 in 2007.

Mandura

Mandura is a west Ethiopian town (11°N and 36°E), lies into Metekel zone of the Benishangul–Gumuz region. It has an elevation of 2331 m and population of 7000 (2009).

2.3.6 Gambela Region

Gambela region is home of Gambela ethnic group and situated in the western part of Ethiopia amid Baro and Akobo Rivers. Gambela is the only town reviewed from the region.

Gambela

Gambela town serves as regional capital of Gambela. The city has its location at 8.5°N and 34.6°E coordinates. It comprises flatland topography with an average altitude of 526 m; the city population was 39,000 in 2007.

2.3.7 Harari Region

Harari region is motherland of Harari ethnic group; it is the smallest region of the country located at western part. Harar is the capital of the region and also the only town included in the current review.

Harar

The town of Harar serves as the capital of Harari region; it has a hilltop positioned on the eastern arm of Ethiopian highlands. It is a fortified town, accredited by UNESCO as world heritage site. The city is located at 89.5°N and 41.9°E coordinates. It has an average altitude of 1885 m and population estimated 152,000 (2012).

2.3.8 Oromia Region

Oromia is the largest region of Ethiopia in term of geographical area; it is a highland and native place of Oromo ethnic group. At present its functional capital is in Addis Ababa. Total 26 towns are considered for review from this region.

Adama

Adama (Nazareth) is the former capital of the Oromia region located at central part of Ethiopia (8.54°N 39.27°E). City has an average elevation of 1712 m and population of 300,000. Close to the national capital, Adama is a busy transport town.

Aira

Aira (Ayira) is a central Ethiopian town (9.1°N and 35.3°E), lies into western wollega zone of the Oromia region. It has an elevation of 1600 m and population of 20,000 (2010).

Ambo

Ambo is a central Ethiopian town (11.98.9°N and 38.2°E), located at west shewa zone of Oromia Region. It has an elevation of 2101 m and population of 94,000 in 2012.

Arsi Negelle

Arsi Negelle town is located at south-eastern part of Ethiopia (7.2°N and 38.9°E), and lies at mirab arsi zone of Oromia region. It has an elevation of 2043 m and population of 62,000 (2010).

Bedessa

Bedessa is an eastern Ethiopian town (8.9°N and 40.6°E), lies into western hararghe zone of the Oromia region. It has an elevation of 1761 m and population of 18,000 (2007).

Bishoftu

Bishoftu (Debrazait) is a tourist attraction close to Addis Ababa, located at central part of Ethiopia (8.7°N and 38.9°E) in Misraq Shewa zone of Oromia region. It has an elevation of 1920 m and population of 171,000 (2012).

Bule Hora

Bule Hora is a southern Ethiopian town (5.6°N and 38.2°E), lies into borena zone of the Oromia region. It has an elevation of 1825 m and population of 39,000 (2010).

Burayu

Burayu is a town adjacent to Addis Ababa, located at central part of Ethiopia (9°N and 38.69°E) in Oromia special zone of Oromia region. It has an elevation of 1920 m and population of 171,000 (2012).

Chiro

Chiro is an eastern Ethiopian town (9°N and 40.9°E), serves as capital of West hararghe zone of the Oromia region. It has an elevation of 1826 m and population of 57,000 (2014).

Dembi Dollo

Dembi dollo is a prominent market town of southwestern Ethiopia (8.5°N and 34.7°E). It serves as the capital of Kelem Welega Zone of the Oromia Region. This town has an elevation of 1701 m and holds a population of 29,000 (2007).

Dhera

Dhera is a south-eastern Ethiopian town (8.3°N and 39.3°E) found in the Arsi Zone of the Oromia Region. It has an average altitude of 1700 m and comprises 9000 people in 2007.

Gebreguracha

Gebreguracha is a central Ethiopian town (9.7°N and 38.5°E). It is located in north shewa zone of the Oromia Region. This town has an elevation of 2545 m and holds a population of 23,000 (2007).

Gimbi

Gimbi is a town in western Ethiopia (9.2°N and 35.8°E) found in the west welega zone of the Oromia Region. It has an average altitude of 1845 m and comprises 31,000 people in 2007.

Goba

Goba is a south-central Ethiopian town (7°N and 39.9°E). It is located in bale zone of the Oromia Region. This town has an elevation of 2743 m and holds a population of 33,000 (2007).

Harawacha

Harawacha is a town in eastern Ethiopia (9.4°N and 42.9°E) found in the west hararghe zone of the Oromia Region. It has an average altitude of 1900 m and comprises 21,000 people in 2007.

Holeta

Holeta is a town close to Addis Ababa, located at central part of Ethiopia (9°N and 38.5°E) in Oromia special zone of Oromia region. It has an elevation of 2391 m and population of 25,000 (2007).

Jimma

Jimma is a south-western Ethiopian town (7.8°N and 36.9°E). It is located in jimma special zone of the Oromia Region. This town has an elevation of 1780 m and holds a population of 207,000 (2012).

Modjo

Modjo is a town in central Ethiopia (8.7°N and 39.1°E) found in misraq shewa zone of the Oromia Region on the bank of Modjo River. It has an average altitude of 1788 m and comprises 49,000 people in 2008.

Nedjo

Nedjo is a western Ethiopian town (9.5°N and 35.5°E). It is located in west wollega zone of the Oromia Region. This town has an elevation of 1821 m and holds a population of 25,000 (2012).

Nekemte

Nekemte is a town in western Ethiopia (9.1°N and 36.5°E) found in east welega zone of the Oromia Region. It has an average altitude of 2088 m and comprises 111,000 people in 2012.

Robe

Robe or Bale-Robe is a southern-central Ethiopian town (7.1°N and 40°E). It is located in bale zone of the Oromia Region. This town has an elevation of 2492 m and holds a population of 44,000 (2007).

Sebeta

Sebeta is a town in central Ethiopia (8.9°N and 38.6°E) found in Oromia special zone of the Oromia Region. It has an average altitude of 2356 m and comprises 49,000 people in 2007.

Shashamane

Shashamane is a southern-central Ethiopian town (7.2°N and 38.6°E). It is located in west-arsi zone of the Oromia Region. This town has an elevation of 1933 m and holds a population of 122,000 (2012).

Welenchiti

Welenchiti is a town in east-central Ethiopia (8.8°N and 39.5°E) found in misraq (east) shewa zone of the Oromia Region. It has an average altitude of 1436 m and comprises 15,000 people in 2007.

Wolliso

Wolliso is a southern-western Ethiopian town (8.5°N and 37.9°E). It is located in debub mirab shewa zone of the Oromia Region. This town has an elevation of 2063 m and holds a population of 38,000 (2007).

Yabello

Yabello is a town in southern Ethiopia (4.9°N and 38.9°E) found in borena zone of the Oromia Region. It has an average altitude of 1857 m and comprises 18,000 people in 2007.

2.3.9 Somali Region

Somali region is one of the emergent regions of Ethiopia, expanded along with eastern boundary of the country. It is homeland of Somali tribe. Jig-Jiga is the capital and only reviewed city from the region.

Jig-Jiga

Jig-Jiga is a town in western Ethiopia (9.3°N and 42.8°E), also serves as the capital of Somali region and found in Jig-Jiga zone. It has an average altitude of 1609 m and comprises 2,000,000 people in 2012.

2.3.10 SNNP Region

Southern Nations, Nationalities, and Peoples' region or SNNP region is located at the southern part of country having low elevation and full of green and most fertile

areas. A total of 16 towns were reviewed from this region. Region has its capital in Hawassa.

Aleta Wondo

Aleta Wondo is a town in southern Ethiopia (6.6°N and 38.40°E) found in sidama zone of the SNNP region. It has an average altitude of 2037 m and comprises 23,000 people in 2007.

Arba Minch

Arba Minch is a southern Ethiopian town (8.5°N and 37.9°E). It is located in gamo gofa zone of the SNNP region. This town has an elevation of 1285 m and holds a population of 95,000 (2012).

Bele

Bele is a town in southern Ethiopia (7°N and 37°E) found in wolaita zone of the SNNP region. It has an average altitude of 1500 m and comprises 7000 people in 2007.

Bonga

Bonga is a southern Ethiopian town (7.3°N and 36.3°E). It is located in keffa zone of the SNNP region. This town has an elevation of 1714 m and holds a population of 21,000 (2007).

Dilla

Dilla is a town in southern Ethiopia (6.4°N and 38.3°E) found in gedee zone of the SNNP region. It has an average altitude of 1570 m and comprises 80,000 people in 2012.

Durame

Durame is a southern Ethiopian town (7.25°N and 37.9°E). It is located in kembata tembaro zone of the SNNP region. This town has an elevation of 2101 m and holds a population of 25,000 (2007).

Halaba

Halaba or Alaba Kulito is a town in southern Ethiopia (7.3°N and 38.1°E) found in kembata tembaro zone of the SNNP region. It has an average altitude of 1726 m and comprises 27,000 people in 2007.

Hawassa

Hawassa is a southern Ethiopian town (7°N and 38.5°E). It serves as the capital of SNNP region; and falls in Hawassa special zone of the SNNP region. This town has an elevation of 1708 m and holds a population of 165,000 (2012).

Hossana

Hosanna is a town in southern Ethiopia (7.5°N and 37.9°E) and capital of hadiya zone of the SNNP region. It has an average altitude of 2177 m and comprises 76,000 people in 2012.

Jinka

Jinka is a southern Ethiopian town (5.8°N and 36.5°E). It is located in debub omo zone of the SNNP region. This town has an elevation of 1490 m and holds a population of 32,000 (2007).

Masha

Masha is a town in southern Ethiopia (7.7°N and 35.5°E) and capital of keficho shekicho zone of the SNNP region. It has an average altitude of 2223 m and comprises 14,000 people in 2007.

Soyama

Soyama is a southern Ethiopian town (5.8°N and 36.5°E). It is the capital of burji special woreda of the SNNP region. This town has an elevation of 1660 m and holds a population of 10,000 (2007).

Tarcha

Tarcha is a town in southern Ethiopia (7.1°N and 37.1°E) and capital of dawuro zone of the SNNP region. It has an average altitude of 1710 m and comprises 25,000 people in 2007.

Wolaita Sodo

Wolaita Sodo is a southern Ethiopian town (6.9°N and 37.8°E). It is the capital of sodo zone of the SNNP region. This town has an elevation of 1600 m and holds a population of 86,000 (2012).

Wolkite

Wolkite is a town in southern Ethiopia (8.3°N and 37.8°E) and capital of gurage zone of the SNNP region. It has an average altitude of 1910 m and comprises 29,000 people in 2007.

Worabe

Worabe is a southern Ethiopian town (6.9°N and 37.8°E). It falls in gurage zone of the SNNP region. This town has an elevation of 2113 m and holds a population of 19,000 (2010).

2.3.11 Tigray Region

Tigray Region is located at the northern border of Ethiopia. It is the native place of Tigray ethnic group. The region has its capital in Mekelle. A total of 10 towns are reviewed from the region.

Abi-Adi

Abi-Adi is a northern Ethiopian town (13.6°N and 39°E). It is found in me-hakelegdaw zone of the Tigray region. This town has an elevation of 2275 m and holds a population of 16,000 (2007).

Adigrat

Adigrat is a town in northern part of Ethiopia (14.3°N and 39.5°E) and found in the misraqawi zone of the Tigray region. It has an average altitude of 2457 m and comprises 76,000 people in 2013.

Adiremets

Adiremets or Addi Remets is a northern Ethiopian town (13.8°N and 37.3°E). It is found in miirabawi (western) zone of the Tigray region. This town has an elevation of 1870 m and holds a population of 5000 (2007).

Alamata

Alamata is a town in northern part of Ethiopia (12.4°N and 39.5°E) and found in the debubawi (southern) zone of the Tigray region. It has an average altitude of 1520 m and comprises 33,000 people in 2007.

Axum

Axum is a northern Ethiopian town (12.4°N and 39.5°E) having a greater importance because of its rich heritage and tourist attraction. It is found in debubawi (southern) zone of the Tigray region. This town has an elevation of 1520 m and holds a population of 33,000 (2007).

Freweyne

Freweyne is a town in northern part of Ethiopia (14.5°N and 39.5°E) and found in the misraqawi zone of the Tigray region. It has an average altitude of 2480 m and comprises 11,000 people in 2010.

Humera

Humera is a northern Ethiopian town (14.3°N and 36.6°E) of strategic significance. It is found in miirabawi (western) zone of the Tigray region. This town has an elevation of 602 m and holds a population of 22,000 (2007).

Korem

Korem is a town in northern part of Ethiopia (12.5°N and 39.5°E) and found in the debubawi (southern) zone of the Tigray region. It has an average altitude of 2539 m and comprises 19,000 people in 2007.

Mekelle

Mekelle is a northern Ethiopian town (13.5°N and 39.5°E). It serves as the capital of Tigray region and lies in debubawi (Southern) zone. This town has an elevation of 2084 m and holds a population of 220,000 (2012).

Shire Endassilasie

Shire Endassilasie is a town in northern part of Ethiopia (14.1°N and 38.3°E) and found in the semien miirabawi (north-western) zone of the Tigray region. It has an average altitude of 1953 m and comprises 47,000 people in 2007.

2.4 Conclusion

Ethiopia is a developing country actively combating with the challenges on urban infrastructure and service provision. It was observed, that scholars found a number of topics appealing and research worthy from water supply to ICT infrastructure. Additionally, the ethnic diversity and variation on geographies probably makes above challenges more multifaceted which calls for specific solutions for each urban settlement indeed.

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