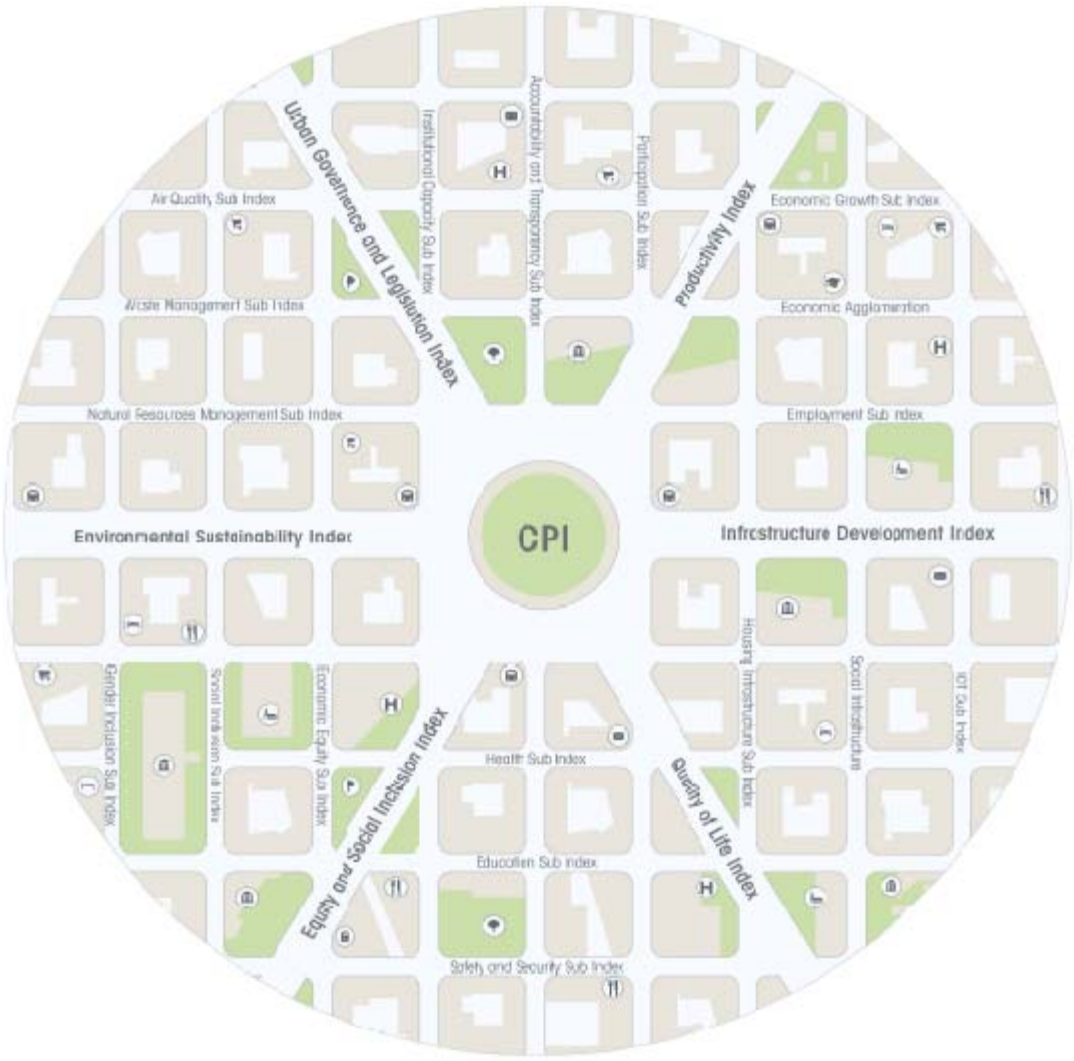


# CITY PROSPERITY INDEX

## Ethiopian City – Mekelle

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# Table of Content

## List of Abbreviations

| | |
|---|---|
| CPI | City Prosperity Index |
| CSA | Central Statistical Authority |
| MCI | Millennium Cities Initiatives |
| TAIDL | Tigray Agricultural and Industrial Development Limited |
| TPLF | Tigrean People Liberation Front |
| UNHCR | United Nations High Commissioner for Refugees |
| WMR | World Millennium Report |

## List of Tables



## List of Figures

## Background to Mekelle City

The sovereign rich history of Ethiopia has left its very diverse and fertile lands filled with historical and cultural treasures, extending from the ancient tombs, and obelisks of Axum to 17th century castles, to the far-fetched rock-hewn churches around Lalibela and this has rendered its own contribution to the very old tradition of urbanization and settlement (Cannon, 2009). In ancient times important and historical towns like Mereo, Axum, Adulis and Adafa or Roha (later renamed Lalibala) flourished in the Northern Ethiopia. The Northern part of Ethiopia has been the center of power for the Ethiopian empire and church for millennia, known to the ancient Greeks as the sanctuary of the gods and mentioned by both Homer and Herodotus.

The establishment of Mekelle started in the second half of the 14th century as a settlement at the Enda Meskel area around Mekelle and it became more and more popular until the early years of the reign of Emperor Yohannes IV (Reference). Mekelle, as part of the Northern Ethiopia, had its heyday during the late nineteenth century, after Yohannes IV was crowned as King of Kings of Ethiopia and chose Mekelle as the capital of his realm from other four competitor towns (Adwa, Axum, Kwiha and Chinni in Temben) at that time for economic and military strategic reasons (Reference). During his reign, Mekelle had become an important religious, political and commercial center.

In the early years of the 1870s Emperor Yohannes IV was interested and ordered the constructions of the Medhane Alem and Kidane Mihiret churches as monastery and nunnery respectively under the parish of Debere Genet Medhane Alem. The construction of the Royal Palace in Mekelle was also another contributing factor for the growth of Mekelle as urban center. The accomplishment of the palace was accompanied by two royal decrees allowing land holdings to everyone who wanted to live in the town and a decree circumscribing the boundaries of the town which comprised the Tikul Imni in the old town of Kwiha, May Mekden to Harena, Motog, Felegmayat, Tsahilo, Chinferes, Romanat, Qata, May Anbesa, Khokholo Yohannis, May Omaru, Tselamo (Debri), Dagiya, Metere, and Shibta.

Mekelle is currently one of the fastest growing cities in Northern Ethiopia and situated about 780 km north of the capital, Addis Ababa, near border of Ethiopia and Eritrea at 39°25'30"-39°38'33''E and 13°24'30''-13°36'52''N coordinates and the city lies in Ethiopia's temperate highlands with an elevation of over 2200[1] (Ali, 2013). The city is a regional capital city of Tigray state and the eastern side of the city is bounded by Enda-Eyesus ridges; a fault block mountain tiled river Ellala by north. The average annual temperature of the town is 14°C to 34°C and 575-650 cm rainfall (Ali, 2012).

## Evolution of Mekelle City

As history of the city witnesses, dominant religious, political and economic features were the forces behind the development of the city Mekelle. Before its establishment as an urban center, the area was dotted by settlement where the inhabitants predominantly practiced farming and religion. The city maintains a proud history of many religions, particularly Orthodox Christianity, dating back to the 4th century AD. The heart of a region that traces its origins back to the ancient Axum Empire that once controlled Red Sea trade (4th century BC – 10th century AD) (Reference). Mekelle was largely ignored in the latter half of the 20th century by Ethiopia's ruling feudal and socialist governments, but began to experience an economic and cultural rejuvenation with the election of a democratic government in Ethiopia in the early 1990s.

With a population of 215,546[2], Mekelle is the sixth largest city in Ethiopia and among the closest to the ports of Djibouti, which are used for nearly all of Ethiopia's import and export trade on the Red Sea. The city is located at the hub of a road system that connects all major cities in the region. The recently constructed Alula Aba Nega International Airport provides for cargo and passenger needs. In addition, road rehabilitation and development projects are creating additional links to nearby cities and agricultural areas. Mekelle was designated as Millennium City in 2008 by The Earth Institute in 2008 (Giorgi *et al.*, 2009)

[1] Government of the City of Mekelle, Urban Scope of Study: Mekelle Finance Planning and Management (Mekelle: Mekelle City Plan Preparation Project Office, 2006).
[2] Government of Ethiopia, Census 2007 (Addis Ababa: Central Statistical Agency, 2008)

## Current Demographic Structure and its transition

According to CSA (2007), the population of Mekelle city was of 215,546 comprising 104,758 males and 110,788 females residing in seven sub-cities, i.e. Hawelti, Ayder, Adi-haki, Semien, Hadnet, Kedamey and Quiha. The religion composition of the city stood 93% of the population is Christian and the rest 7% are Muslims and other faction of religion. The two largest ethnic groups reported in the city were the Tigray (96.2%), and Amhara (2.26%); all other ethnic groups made up 1.54% of the population. Tigrinya is spoken as a first language by 95.55%, and Amharic by 3.18%; the remaining 1.27% spoke all other primary languages reported.

In 2013 the population of Mekelle was projected to be around 300,000 assuming the 5.4% growth rate.

**Table 1: Mekelle Population growth rate and projection trend scenario**

| Growth rate level | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
|---|---|---|---|---|---|---|---|---|---|
| High growth rate (6.3%) | 215,546 | 229,562 | 244,490 | 250,388 | 277,321 | 295,354 | 314,560 | 335, 015 | 356,800 |
| Medium growth rate (5.4%) | 215,546 | 227,505 | 240,129 | 253,452 | 267,515 | 282,358 | 298,024 | 314,560 | 332,013 |
| Low growth rate (4.4%) | 215,546 | 225,242 | 235,374 | 245,961 | 257,025 | 268,587 | 280,669 | 293, 294 | 306,487 |

***Source***: Millennium Cities Initiative. The Earth Institute, Columbia University (2011), Draft of a Comprehensive City Development Strategy based on the Millennium Development Goals (MDG) for Mekelle, Ethiopia.

Research by Millennium Cities Initiative has shown that attention to gender equality has increased across all sectors of Mekelle society. Nevertheless, significant gaps still exist; violence against women is still a challenge. Given the costs of such violence to women's and girls' physical health as well as mental health, confidence and self-esteem, it is imperative that law enforcement becomes seriously engaged and that government, NGOs and the private sector launch public awareness campaigns. Women's physical health is equally critical to their own economic development and to that of the city as a whole. In 2005, the city's HIV-prevalence rate was estimated at 13.3 percent, higher than the national urban prevalence of 10.5 percent (FMOH and HAPCO, 2006). Gender parity has been achieved at the primary school level, and the number of girls attending secondary school (grades 9-12) has been increasing. However, the

number of girls in preparatory schools (grades 11-12) is consistently lower than the number of boys at this level. Women in Mekelle clearly face higher levels of unemployment compared to their male counterparts, suggesting possible hiring inequity between males and females in the workforce. However, this gap is not necessarily due to any violation of the labor law or discrimination; research data shows that women tend to engage in lower income occupations. Most females studied secretarial work and "information" and "purchasing" positions.

The 1994 population census stated about education in Mekelle, 51.75% of the population which is more than the Zone average of 15.71% were considered literate; 91.11% of children aged 7–12 were in primary school; 17.73% of the children aged 13–14 were in junior secondary school; and 52.13% of the inhabitants aged 15–18 were in senior secondary school. Concerning sanitary conditions, about 88% of the urban houses had access to safe drinking water at the time of the census, and about 51% had toilet facilities.

## Migration Pattern

According to World Migration Report 2011, around a billion people which is roughly one in seven of the world's population are migrants (WMR, 2011). Developing countries of Africa and Asia are under a serious influence on the economic stability due to return of large numbers of migrant workers. The major driving factors for Ethiopian migrants over the years were economic, political, and environmental that were all heavily interlinked and intertwined with regional issues. This mixture of causes, and the magnitude of the refugee crisis that it generated, is what makes the Horn of Africa, and Ethiopia in particular, such a complex case in terms of migration.

Ethiopia has experienced political instability, war, famine, and economic hardship over the course of the history. As a result, the country has known by many types of migration over the years from origin to destination places in the form of voluntary or involuntary migrants (Golini, *et al.*, 2001).

UNHCR reports that there were 10,700 Eritrean refuges in Ethiopia in 2005, mostly located not far from the Ethiopian-Eritrean border. As a vast majority of them are originally from the province of Tigray and they are among the poorest of Africa's poor [11].

The growth of an urban center can take place by growth of the existing urban localities, classification of cities (from rural to urban areas) and annexations of new territory to existing cities and by demographic change, i.e. natural increase and migration effect. Many of the urban centers in Ethiopia have already faced one of these types of growth or a combination of them (Gebeyehu et al., 2001). Satisfaction

The town's socio-economic and political importance amplified through travelling of large number of traders, travelers, and officials to the town during the reign of Emperor Yohannis IV. Since the beginning, the economic base of the settlers of the area was agriculture, an economic sector that continued to serve as a base to the communities even as late as the Dergue period for most of the population of the city.

In addition to farming, however, as historically documented, the long distance salt trade had played crucial role in the economic, demographic and spatial growth of the city. Understanding the crucial role of the salt trade both Emperor Yohannis IV and Dejazmach Abraha Araya had redirected the salt trail route from Reged or Barahle to pass through the city of Mekelle. This diverted trade route eventually made the city as a transit to merchants from these areas. It also necessitated the establishment of markets in the town and women and Muslims as facilitators of the commercial activities. Commercial activities had revived during the 1920s and 1930s due to the relative peace and the intimate trade relations between Ras Gugsa and the Italian colony of Eritrea.

In the early years of the 1870s Emperor Yohannis IV ordered the constructions of the Medhane Alem and Kidane Mihiret churches as monastery and nunnery respectively under the parish of Debere Genet Medhane Alem which greatly contributed for urban settlement. The construction of the Royal Palace in Mekelle was also another contributing factor for the growth of Mekelle as urban centre. The accomplishment of the palace was accompanied by two royal decrees allowing land holdings to everyone who wanted to live in the town and a decree circumscribing the

boundaries of the town which comprised the Tikul Imni in the old town of Kwiha, May Mekden to Harena, Motog, Felegmayat, Tsahilo, Chinferes, Romanat, Qata, May Anbesa, Khokholo Yohannis, May Omaru, Tselamo (Debri), Dagiya, Metere, and Shibta.

The commercial sector was also highly intensified through establishment of new economic sectors and construction of commercial enterprises in the Mekelle city during the Italian occupation period both by Italians and other expatriates such as Armenians, Arabs and the Greece.

The arrival of the Italian forces in Mekelle had its great impact on different activities of the economy. The Italians built numerous shops, tearooms, tailor shops, bars and restaurants, cafés and hotels where the Arabs were the main participants and the Italians had also introduced services that had been nonexistent during the pre-1935 Mekelle. This helped Mekelle to start appearing and booming in the economic aspect.

Indigenous commercial activities also grew steadily during the Italian period. Cereals and Cattle of various kinds, honey, hides and skins were brought to Marcato Indigini [Market for the Indigenous People] from various parts of the region as far south as Seqota, Raya, Yejju and Temben, Raya lowlands, Qorbeta (now Mekoni), Yejju, Abergelle and from Afar lowlands. Furthermore various import goods such as cloth, perfume, and petroleum were imported while alcoholic and soft drinks of various kinds were either imported or distilled in the town.

Small scale business establishments began to emerge in Mekelle town during the Italian occupation when grain mills, hotels, restaurants and pensions were set up for the first time. Other business establishments were also introduced gradually and grew in number due to its strategic location of not only being at the center of the network of feeder roads, radiating to the adjacent districts, but also at the major highway to Asmara. As a result of the establishment of small and medium scale industries of TAIDL and the general increment in commercial activities in the city had attracted traders and employees from the different areas to the city and improved the livelihood of the residents and the city itself.

In the post-liberation period, the Yemenite Arabs and Eritreans remained in the town. Together with those Italian civilians who remained in the town, they played major role in the commercial activity of the town. The Armenians and Greeks, who had been active in the pre-1935 period, were surpassed by the new arrivals.

The other aspect of economic importance of the town particularly and to the region in general during the time was the repeated outbreak of drought, insect invasions, famine and epidemics. The districts of the northeastern Tigray were frequented by more than ten full or partial famines. The Zeben Tuq Tuqo (Summer 1945), Akahida (1947-1948), Botoqo (1950), the year of locust of 1958 and the most devastating 1984/85 drought were recorded in the minds of Tigreans. All these had led to devastation of economic wellbeing and immigration and subsequent settlement of rural people to the city.

During the military (Dergue) period, economic situation got worst. The city's economy was almost collapsed, rural-urban and urban-rural movement of people around the city became difficult due to the military barricades of the military junta completely paralyzing the exchange of goods and services between rural and urban and trade generally. This stagnated the economic situation of the city. The Military regime collapsed in Tigray in February 1989 and the TPLF occupied the abandoned capital of Mekele on 25 February. The retreating military forces still found time to remove cash from the banks and sabotage public facilities, they destroyed institutions and property.

On 26 February 1989, two army tanks shelled the electricity generating station, completely destroying five huge generators, each capable of producing one megawatt of power, affecting the city's electricity supply. Bedding and instruments from the hospitals were systematically looted by soldiers; this also affected the provision of health services.

Various government institutions, public and private business enterprises were established in Mekelle from 1993 onward. The Tigrean People Liberation front (TPLF) had established various enterprises under the Endowment Fund for the Rehabilitation of Tigray (EFFORT) in the city. Since 2003 onwards, private financial institutions such as the Dashen Bank had been inaugurated. In 1998 the government established four new universities in Ethiopia, one of them in Mekele by upgrading the Mekele Business College to a university college.

Over the past two decades, Mekelle has experienced rapid growth as the capital of the Regional State of Tigray. Due to long-term business development plans aimed at creating optimal market conditions, the city has become the home for many industries, agro-processing companies and educational centers. With an educated work force and a significant manufacturing base, the city is poised for sustainable economic growth. This working paper is meant to alert investors to Mekelle's potential and to provide an overview of the investment conditions the city offers (Cannon, 2009)

Agriculture is the backbone of the economy of Mekelle. Mekelle is home to over 800 grain mills, over 500 food shops, an extensive public transport network and an active urban—rural exchange of goods. Mekelle has about 30,000 micro and small enterprises. However, a significant number of them are in the informal sector, limiting the tax base. High levels of poverty, however this has been reduced significantly over the recent years and migration create further obstacles to providing effective public services in Mekelle.

Due to political divisions in Ethiopia, Tigray has been particularly neglected with respect to infrastructure improvement and government-led development projects. However, in the last two decades since the fall of the Military regime, infrastructure improvement has been a primary focus of the regional and federal governments. Water demand far outstrips the city's water supply. In 2008, the maximum demand for water was 23,000 $m^3$/day, whereas the supply was limited to only 11,000 $m^3$/day. The Mekelle Water Supply Office projects that by 2012 the city will need 38,000 $m^3$/ day. The city currently operates 12 bore holes at a depth of 120-240 meters each (Cannon, 2009). The city is planning to increase its water supply capacity by drilling 11 additional bore holes at a depth between 250 and 350 meters. With the recent addition of an internationally certified airport capable of servicing all passenger and cargo needs, Mekelle has added a vital element for international competitiveness. Emphasis has been placed on the need to upgrade the existing main road that connects Tigray with the port of Djibouti, Addis Ababa and other main regions.

In the Tigray region alone, there is a total of 5,900 km of roads; 1,419 km of which are administered by the Ethiopian Road Authority (ERA), and 1,131 km administered by the Tigray

Region Road Authority (TRRA). The remaining 3,349 km is dry weather community road. The road density of the region rests at 47.22 km per 1,000 square km of land. The city of Mekelle has 263 km of roadways, of which 40 km are asphalt roads, 63 km are gravel roads and the remaining 160 km are unclassified dirt roads. An additional 88 km of asphalt roads are being planned. Only 24 km of asphalt roads are rated in "good" condition by the Department of Roads, while the remaining 16 km are rated in "poor" condition and require maintenance. The Tigray region, for the most part, has reliable access to telecommunications (fax, internet, mobile, etc.). In addition, cooperation with Chinese technical assistance groups is improving saturation and service delivery. Internally, direct microwave telephone links are available in most regional cities; a number of smaller towns also have automatic telephone services. International communication is maintained through two satellite earth stations that provide telephone, telex, and television services. Digital telephone exchanges, mobile telephone and internet services have also been installed recently.

## Tourism and Opportunities to Mekelle

The northern tourist circuit, known as the "Historic Route," comprises the most important tourist sites in Ethiopia and is located almost entirely in Tigray and its border regions. The ancient city of Axum which is a UNESCO world heritage site, was once the center of a powerful empire and now the spiritual center of Orthodox Christianity in Ethiopia. An indicator of Ethiopia's rich diversity is that within this "Historic Route" lies the Al Negashi mosque at Wukro – the most important site for Islam in Africa and a reminder of Ethiopia's impressive religious tolerance.

The nearest tourist sites to Mekelle are the rock-hewn churches of Tigray (nearly all located within a 100 km radius from Mekelle), the Erte Ale volcano and the Danakil Depression of the Afar region. In many ways, Mekelle is an ideal place to link the historic and religious sites of the ancient Axumite kingdom, the rock-hewn churches and monasteries of Tigray, the Danakil Depression and Lalibela rock-hewn churches, the Gonder castles and the Semien Mountains National Park in the Amhara region. As the roads throughout the country continue to improve, it is likely that car-based tourism will become the predominant means of travel within the region. Previously, inadequate roads forced tourists to take airplanes to their destinations in the Tigray

region. However, as car and bus travel increase in popularity, Mekelle could become an ideal hub for the many tourist sites of northern Ethiopia.

The city cultural heritage, historical, religious and natural treasures make Mekelle one of the attracting places for tourism. Erte Ale, one of the world's few active volcanic lakes, lies east of Mekelle, while the city itself is surrounded by fantastic rock-hewn churches that rival the more well-known rock temples of Jordan's Petra. This area is also home to one of the most important Islamic holy sites outside of Mecca, located in the town of Negash (Cannon, 2009). The northern Ethiopian region offers tourists many cultural opportunities such as the Ashenda fesitivals. In addition to tourism operations, there is significant opportunity to develop hospitality facilities focused on hotels and restaurants, as Mekelle lacks facilities to meet expected future demand. Further opportunities abound for investments in cotton, textiles, floriculture, spices, and mining. As a result of these growth opportunities, Ethiopia is well poised to experience rapid economic growth.

There are numerous opportunities for growth in and around Mekelle. One area of particular interest is agriculture and agro-processing. The region is well known for its superior livestock and honey, and a wide variety of fruits and vegetables. Livestock-based agro-processing can provide a myriad of opportunities for investments especially in the dairy, meat and leather industries. This region is likewise ideal for harvesting high quality honey and producing wax. As the largest producer of both livestock and honey in Africa, Ethiopia has the experience and supply volume necessary to process goods for domestic and international markets and Mekelle is better placed to be the hub of local and international trade for Ethiopia.

## Introduction of the city prosperity initiative

UN-Habitat created a tool to measure the sustainability of cities in 2012. This tool is known as The City Prosperity Index and it was accompanied by a conceptual matrix, the Wheel of Urban Prosperity. In 2013, UN-Habitat received numerous requests from local authorities and central governments to estimate their respective prosperity indexes. Mayors and other decision-makers wanted to know how their cities feature in comparison with other cities locally, regionally and globally. This included knowledge on how to improve ratings and measurements of cities towards the prosperity path, including gaining critical insights in to which programmes and

policies work, and the possible impacts these actions may have. As a result of these demands, UN-Habitat transformed the City Prosperity Index into a global initiative known as the City Prosperity Initiative. This initiative is both a metric and a policy dialogue, which offers cities from developed and developing countries the possibility to create indicators and baseline information, often for the first time. It also serves to define targets and goals that can support the formulation of evidence-based policies, including the definition of city-visions and long-term plans that are both ambitious, and measurable. UN-Habitat's City Prosperity Initiative (CPI) not only provide indices and measurements relevant to cities; it also enables city authorities, as well as local and national stakeholders, to identify opportunities and potential areas of intervention for their cities to become more prosperous.

At the global level, many city mayors and leaders have called for the adaptation of the CPI to track the performance in their nations and cities. Ethiopia is among many countries (see figure below) where CPI has been implemented. In the last 2 years the implementation of CPI in two cities selected for the initial phase of the CPI roll-out in Ethiopia, namely Addis Ababa and Mekelle has been going on. This report provides summary findings on the implementation of CPI approach in these two cities of Ethiopia.

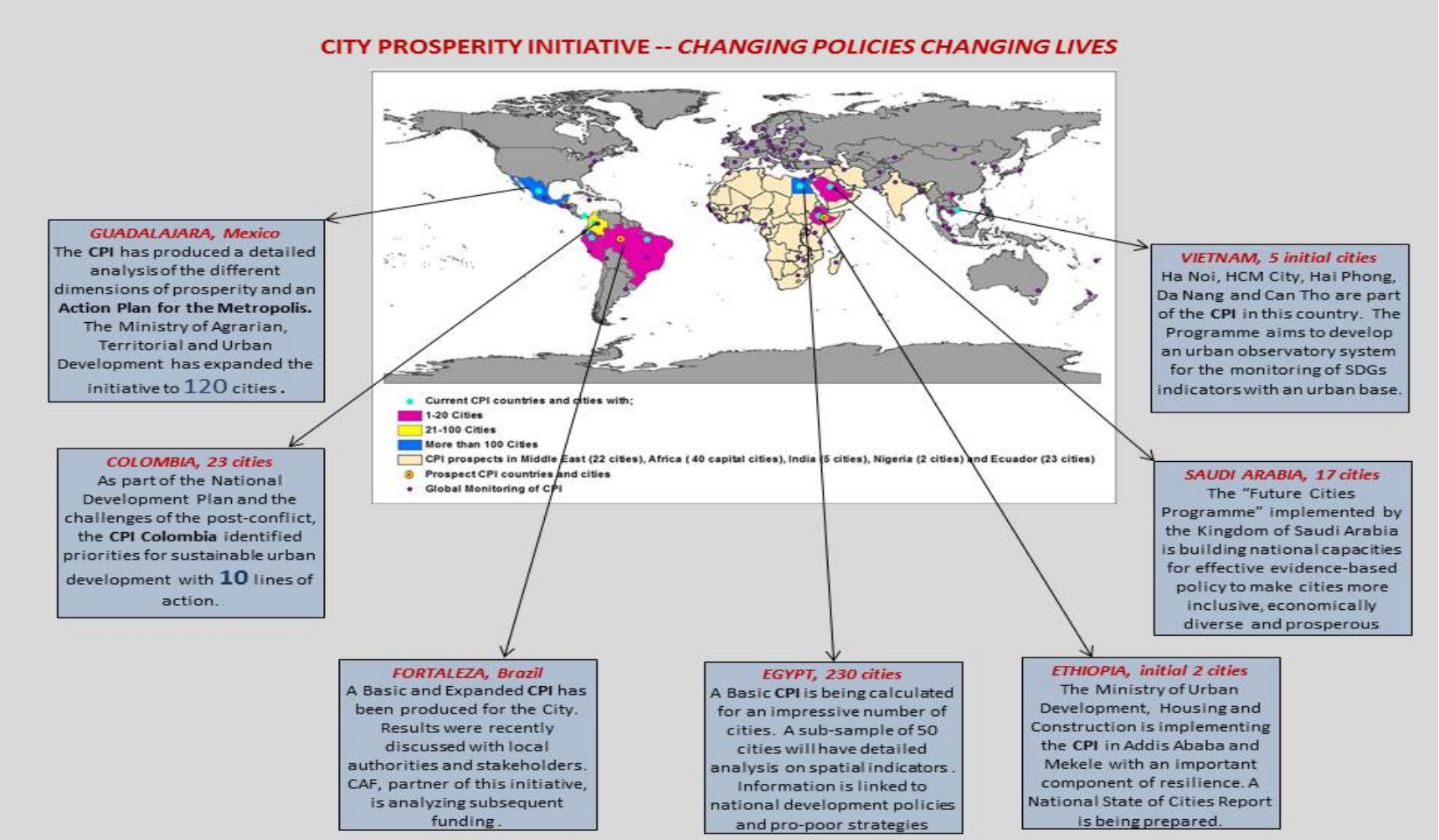



**Figure 1: City Prosperity Initiative summary**

## The City Prosperity Index (CPI)

The CPI developed by UN-Habitat provides a new approach to urban prosperity, which is holistic, integrated and essential for the promotion and measurement of social development, social inclusion and progressive realization of the urban-related human rights for all. This new approach redirects cities to function as the leaders of the world towards a path of an urban future that is economically, politically, socially and environmentally prosperous.

In order to measure the current and future progress of cities to the road to prosperity, UN- Habitat has introduced a monitoring framework -The Cities Prosperity Index which, along with a conceptual matrix, The Wheel of Urban Prosperity, is intended to help decision makers and partners to use existing evidence and formulate clear policy interventions for their cities. The UN- Habitat's Cities Prosperity Index (CPI) allows authorities and local groups to identify opportunities and potential areas for action or adjustments in order to make their cities more prosperous.

The Cities Prosperity Index (CPI) is a multidimensional measurement framework that integrates several dimensions and indicators that the CPI ensure that the prosperity of a city is explained by a group of factors or dimensions that are not only related, but have direct and indirect influence on each other on the path to prosperity.

Through analysis, UN-Habitat has identified a number of factors that may create a favorable environment for cities to thrive and prosper. These factors are mediated by the local context, and as such, their effects can vary across cities and regions. Based on surveys conducted in 2012 in 54 cities of the developing world, it was possible to identify the most six critical components of a prosperous city which are regarded as dimension of prosperity. The prosperity dimensions are mentioned below:

### Productivity

- a prosperous city contributes to economic growth and development, generating income, employment and equal opportunities that further provide adequate living standards for the entire population.

**Infrastructure Development**

– a prosperous city deploys the infrastructure, physical assets and amenities – adequate water, sanitation, power supply, road network, information and communications technology, etc. which are required to sustain both the population and the economy, and provide better quality of life.

**Quality of life**

- a prosperous cities provide amenities such as social services, education, health, recreation, safety and security required for improved living standards, enabling the population to maximize individual potential and to lead fulfilling lives.

**Equity and social inclusion**

– a city is only prosperous to the extent that poverty and inequalities are minimal. No city can claim to be prosperous when large segments of the population live in abject poverty and deprivation. This involves reducing the incidence of slums and new forms of poverty and marginalization.

**Environmental sustainability**

- the growth of cities and their economic development should not destroy or degrade the environment; instead, the city's natural assets are preserved for the sake of sustainable urbanization.

**Governance and legislation**

- Cities are best able to combine sustainability and shared prosperity through effective urban governance and transformational leadership, deploying appropriate and effective policies, laws and regulations, and creating adequate institutional frameworks with strong local institutions and sound institutional arrangements.

## Introduction to the Ethiopian-city prosperity index (E-CPI)

Ethiopia as a nation has the vision to attain the middle income status by 2025. To achieve this, the Government, among other things, has been investing heavily in economic and social infrastructure, streamlining public services, revamping the tax collection system, and supporting small and medium enterprises to add value on their products. These enhanced pro-poor investments and the resultant economic growth and prosperity are expected to have a direct impact on poverty and social well-being across the nation. However, with more people living in cities, much of these investments will impact the cities directly and the way of lives for city residents. Therefore, the Ethiopian Cities Prosperity Initiative has an important role as an overall measurement framework for tracking the achievements along the journey to middle income country in 2025.

Ethiopia ranked 126 out of 142 countries on a new prosperity index, and 137$^{th}$ in a sub-category that measures Entrepreneurship & opportunity. According to this index, Ethiopia was also ranked 132$^{nd}$ in education. The index was released by the London based, The Legatum Institute on 2$^{nd}$ November 2015. According to the institute, the index assesses how prosperous an economy is based on more than just macroeconomic factors – it also takes into account wellbeing. Using rigorous research and in-depth analysis, the Index ranks countries based on their performance in eight sub-indices—Economy, Entrepreneurship and Opportunity, Governance, Education, Personal Freedom, Health, Safety and Security and Social Capital.

The Basic CPI can be used to assess the situation or achievements of Ethiopian cities by comparing the performance of its cities with that of other cities in lower middle income economies like Hanoi in Vietnam. The CPI is also useful as a strategic policy tool where data and information that make the index is used to detect the progress of the dimensions of the prosperity and to understand the deficiencies.

Therefore, the CPI is gradually built, at a level favoring Basic comparison to regional or global level, and an extended level providing the ability to integrate local aspects of each city, including its comparative advantages as well as elements of policies and actions.

In its computation, the Ethiopia-CPI was tailored to be able to measure the achievements of Ethiopian cities especially the City of Addis Ababa towards attaining the status of a major city in a lower middle income economy, in which case some specific indicators were bench-marked using Hanoi – Vietnam. Vietnam is in the lower middle income category and has also a population more or less the same as Ethiopia. Hanoi is the capital city of Vietnam and has a population in the range of about three million just like Addis Ababa. Vietnam has been used in many Ethiopian economic development reports as a reference and bench mark towards attainment of lower middle income status.

## Scales of prosperity

CPI index provides an indication of the strength or weakness in the factors of prosperity as well as the level of achievement towards the overall prosperity goals (maximum/optimum bench marks). The resulting values of the index can be grouped into six different scales ranging from cities with very strong to those with very weak factors. The ranking of cities according to the six scales shows the following CPI characteristics.

**Table 2: Scale Prosperity**

| Scales | level |
|---|---|
| 80-100 | Very strong factors |
| 70-79 | Strong factors |
| 60-69 | Moderately strong factors |
| 50-59 | Moderately weak factors |
| 40-49 | Weak factors |
| 10-39 | Very weak factors |

**Source**:

CPI consists of six dimensions. Each dimension consists of a series of sub- indices or sub-dimensions, which in turn include many variables/indicators that contribute to the calculation of the specific index. In this regard, CPI produces six subscripts related to the six “Dimension” of prosperity: productivity, infrastructure, quality of life, equity and inclusion, environmental sustainability and urban governance and legislation. The aggregation of these six sub-indices generates a consolidated value representing the CPI. As mentioned, the CPI can be computed in its basic or extended level.

## Process of the CPI in Mekelle

The CPI for Mekelle followed the process laid down in the official CPI methodology developed and published by UN-Habitat. The main stages in the CPI development involved the identification of indicators and proxies where necessary in line with the set dimensions and sub-dimensions. After the identification of indicators then the standardization process which involves rescaling the various measurement scales of indicators into a range between 0 and 1 (0 and 100 expressed in percentage). This process also involves setting of goals and targets (bench marks) which are applied into the set formulas for standardization. The next stage is the construction which involves the aggregation or just adding together the standardized indicators to form one single value which denotes the level of prosperity on a scale of 0-1. In the construction process a weighting scheme is developed which depends on the number of indicators per sub-dimension or number of sub-dimensions per dimension.

## Indicator Selection

The following tables show the list of CPI indicators. Table1 shows the list of indicators according to the CPI Methodology guide without any amendments. An amendment to the list was done based on the availability of data where indicators with reliable data were used. Indicators which did not have any data at all were dropped from the list, indicators which were available but in different definitions or names but measured the same concept were replaced with what is available as proxies. Both the list of indicators for Basic CPI and Extended CPI were adjusted. The actual list of indicators used in computing Basic CPI and in Table 3 and the list of indicators used for computing Extended CPI are in Table 4. The variations between the three tables show the various adjustments done to the list of indicators.

## Table 3: Complete List of Indicators in the CPI Guide

| ETHIOPIAN ECONOMIC PILLARS | DIMENSION | SUB-DIMENSION | INDICATOR | UNITS | TYPE OF INDICATOR |
|---|---|---|---|---|---|
| **Pillar 0: QUALITY OF LIFE** | Quality Of Life Index (QoL) | Education (E) | QoL_E_1_LiteracyRate | % | Basic |
| | | | QoL_E_2_MeanYearsOfSchooling | Years | Basic |
| | | | QoL_E_3_Net Enrolment Rate-Kindergarten(under six) | % | Extended |
| | | | QoL_E_4_NetEnrollmentRateInSecondary(9-10) | % | Extended |
| | | | QoL_E_4_NetEnrollmentRateInHigherEducation | % | Extended |
| | | Health (H) | QoL_H_1_LifeExpectancyAtBirth | Years | Basic |
| | | | QoL_H_2_Under-FiveMortalityRate (Reversed) | #/1.000 live births | Basic |
| | | | QoL_H_3_VaccinationCoverage | % | Extended |
| | | | QoL_H_4_MaternalMortality (Reversed) | #/100.000 live births | Extended |
| | | Safety and Security | QoL_SS_1_Homicide Rate | #/100,000 inhab. | Extended |
| | | | QoL_SS_2_Theft Rate | #/100,000 inhab. | Extended |
| **Pillar 2 - MSE DEVELOPMENT & URBAN PRODUCTIVITY** | Productivity Index (P) | Employment (E) | P_E_1_UnemploymentRate (Reversed) | % | Basic |
| | | | P_E_2_EmploymentToPopulationRatio | % | Extended |
| | | | P_E_3_InformalEmployment (Proxy: share of informal sector in employment) | % | Extended |
| | | Economic Agglomeration (EA) | P_EA_1_EconomicDensity | US$ (PPP)/Km^2 | Basic |
| | | | P_EA_2_EconomicSpecialization of MSE (Proxy: SMEs concentration rate) | #SMEs / KM2 | Extended |
| | | Economic Growth (EG) | P_EG_1_CityProductPerCapita | US$ per capita (PPP) | Basic |
| | | | P_EG_2_OldAgeDependencyRatio (Reversed) | % | Basic |
| **Pillar 3 - URBAN GOOD GOVERNANCE** | Urban Governance and Legislation Index (UGL) | Institutional Capacity (IC) | UGL_IC_1_OwnRevenueCollection | % | Basic |
| | | | UGL_IC_1_RecurentExpenditure Performance | % | Extended |
| | | | UGL_IC_1_Capita Expenditure Performance | % | Extended |
| | | | UGL_IC_2_InvestmentCapacity | % | Extended |
| | | Participation (P) | UGL_P_1_VoterTurnout | % | Basic |
| | | | UGL_P_2_CivicParticipation | % | Extended |
| **Pillar 4 - INFRASTRUCTURE & SERVICES** | Infrastructure Development Index (ID) | Social Infrastructure (SI) | ID_SI_1_PhysiciansDensity | #/1.000 People | Basic |
| | | Social Infrastructure (SI) | ID_SI_2_NumberOfPublicLibraries | #/1.000 People | Extended |
| | | ICT (ICT) | ID_ICT_1_CoverageInternet services | #/1.000 People | Basic |
| | | | ID_ICT_Coverage of FixedTelephone | #/1.000 People | Extended |
| | | | ID_ICT_Coverage of MobilePhone | #/1.000 People | Extended |
| | | Urban Mobility (UM) | ID_UM_1_LenghtofMassTrasport | Km/1.000.000 people | Extended |
| | | | ID_UM_2_Use of Public Transport | % | Basic |

| | | | | | |
|---|---|---|---|---|---|
| | | | ID_UM_3_TrafficFatalities (Reversed) | #/100.000 people | Extended |
| | | | ID_UM_4_Average Daily Travel Time | Minutes | Basic |
| | | | ID_UM_5_AffordabilityOfTransport (Reversed) | % | Extended |
| **Pillar 5 & 6 - HOUSING DEVELOPMENT & CONSTRUCTION** | Infrastructure Development Index (ID) | Housing Infrastructure (HI) | ID_HI_1_ImprovedShelter | % | Basic |
| | | | ID_HI_2_AccessToImprovedWater | % | Basic |
| | | | ID_HI_3_AccessToImprovedSanitation | % | Extended |
| | | | ID_HI_4_AccessToElectricity | % | Extended |
| | | | ID_HI_5_SufficientLivingArea | % | Extended |
| | | Housing Sector Development (HSD) | ID_HSD_HousingConstructed | #/1,000 People | Extended |
| | | | ID_HSD_Housing demand | #/1,000 People | Extended |
| **Pillar 7- URBAN PLANNING & LAND MANAGEMENT** | Infrastructure Development Index (ID) | Street Connectivity (SC) | ID_SC_1_StreetIntersectionDensity | #/Km^2 | Basic |
| | | | ID_SC_2_StreetDensity | Km/Km^2 | Basic |
| | | | ID_SC_3_LandAllocatedToStreets | % | Basic |
| **Pillar 8 - ENVIRONMENTAL SUSTAINABILITY** | Quality Of Life Index (QoL) | Public Space (PS) | QoL_PS_1_GreenAreaPerCapita | m^2 / inhabitant | Basic |
| | | | QoL_PS_2_AccessibilityToOpenPublicArea | % | Extended |
| | Environmental Sustainability Index (ES) | Water and Energy (WE) | ES_WE_2_ShareOfRenewableEnergyConsumption | % | Basic |
| | | Waste Management (WM) | ES_WM_1_SolidWasteCollection /Disposal | % | Basic |
| | | | ES_WM_2_LiquidWasteCollection/disposal-vacume tracks no sewerage system | % | Basic |
| | | | ES_WM_3_SolidWasteRecyclingShare | % | Extended |
| | Equity And Social Inclusion Index (ESI) | Economic Equity (EE) | ESI_EE_1_GiniCoefficient (Reversed) | Value between 0 and 1 | Basic |
| | | | ESI_EE_2_PovertyRate (Reversed) | % | Basic |
| | | Gender Inclusion (GI) | ESI_GI_1_EquitableSecondarySchoolEnrollment | Value between 0 and Infinito | Basic |
| | | | ESI_GI_2_WomenInTheLocalGovernment | % | Extended |
| | | | ESI_GI_3_ WomenInTheWorkforce (% of economicaly active women) | % | Extended |
| | | Social Inclusion (SI) | ESI_SI_1_SlumHouseholds (Reversed) | % | Basic |
| | | | ESI_SI_2_YouthUnemployment (Reversed) | % | Basic |

## Table 4: List of Indicators used to compute the Basic CPI

| Pillar | Dimension | Sub-Dimension | Indicator | Last Yr | Level |
|---|---|---|---|---|---|
| Pillar 0: Quality Of Life | Quality Of Life Index (Qol) | Education (E) | Qol_E_1_Literacyrate | 2014 | Region |
| | | | Qol_E_2_Meanyearsofschooling | 2010 | City |
| | | | Qol_E_4_Netenrollmentrateinsecondary(9-10) | 2013 | Region |
| | | Health (H) | Qol_H_1_Lifeexpectancyatbirth | 2013 | City |

| | | | | | |
|---|---|---|---|---|---|
| | | | Qol_H_2_Under-Fivemortalityrate (Reversed) | 2011 | City |
| | | Safety And Security | Qol_Ss_1_Homicide Rate | 2015 | City |
| | | Employment (E) | P_E_1_Unemploymentrate (Reversed) | 2013 | City |
| Pillar 2 - Mse Development & Urban Productivity | Productivity Index (P) | Economic Agglomeration (Ea) | P_Ea_2_Economicspecialization Of Mse (Proxy: Smes Concentration Rate) | 2013 | City |
| | | Economic Growth (Eg) | P_Eg_1_Cityproductpercapita | 2013 | City |
| | | | P_Eg_2_Oldagedependencyratio (Reversed) | 2007 | City |
| Pillar 3 - Urban Good Governance | Urban Governance And Legislation Index (Ugl) | Institutional Capacity (Ic) | Ugl_Ic_1_Ownrevenuecollection | 2014 | City |
| | | Participation (P) | Ugl_P_1_Voterturnout | 2005 | City |
| Pillar 4 - Infrastructure & Services | | Social Infrastructure (Si) | Id_Si_1_Physiciansdensity | 2013 | City |
| | | Ict (Ict) | Id_Ict_1_Coverageinternet Services | 2012 | City |
| | | | Id_Ict_Coverage Of Mobilephone | 2011 | City |
| Pillar 5 & 6 - Housing Development & Construction | Infrastructure Development Index (Id) | Housing Infrastructure (Hi) | Id_Hi_1_Improvedshelter | 2011 | City |
| | | | Id_Hi_2_Accesstoimprovedwater | 2011 | City |
| Pillar 7- Urban Planning & Land Management | | Street Connectivity (Sc) | Id_Sc_1_Streetintersectiondensity | 2013 | City |
| | | | Id_Sc_2_Streetdensity | 2013 | City |
| | | | Id_Sc_3_Landallocatedtostreets | 2014 | City |
| Pillar 8 - Environmental Sustainability | Environmental Sustainability Index (Es) | Water And Energy (We) | Es_We_2_Shareofrenewableenergyconsumption | 2011 | City |
| | | Waste Management (Wm) | Es_Wm_1_Solidwastecollection /Disposal | 2014 | City |
| | Equity And Social Inclusion Index (Esi) | Economic Equity (Ee) | Esi_Ee_2_Povertyrate (Reversed) | 2013 | City |
| | | Gender Inclusion (Gi) | Esi_Gi_1_Equitablesecondaryschoolenrollment (Gender Parity Index) | 2013 | Region |
| | | Social Inclusion (Si) | Esi_Si_1_Slumhouseholds (Reversed) | 2012 | City |
| | | | Esi_Si_2_Youthunemployment (Reversed) | 2013 | City |

## Table 5: List of Indicators added to compute the Extended CPI

| Pillar | DIMENSION | SUB-DIMENSION | INDICATOR | LAST YR | Level |
|---|---|---|---|---|---|
| Pillar 0: Quality Of Life | Quality Of Life Index (QoL) | Education (E) | QoL_E_3_Net Enrolment Rate-Kindergarten(under six) | 2014 | City |
| | | | QoL_E_4_NetEnrollmentRateInHigherEducation | 2014 | City |
| | | Health (H) | QoL_H_3_VaccinationCoverage | 2014 | City |
| | | | QoL_H_4_MaternalMortality (Reversed) | 2014 | City |
| | | Safety and Security | QoL_SS_2_Theft Rate | 2015 | City |
| Pillar 2 - Mse Development & Urban Productivity | Productivity Index (P) | Employment (E) | P_E_2_EmploymentToPopulationRatio | 2013 | City |
| | | | P_E_3_InformalEmployment | 2013 | City |
| Pillar 3 - Urban Good Governance | Urban Governance and Legislation Index (UGL) | Institutional Capacity (IC) | UGL_IC_1_RecurentExpenditure Performance | 2014 | City |
| | | | UGL_IC_1_Capita Expenditure Performance | 2014 | City |
| | | | UGL_IC_2_InvestmentCapacity | 2013 | City |
| | | Participation (P) | UGL_P_2_CivicParticipation | 2014 | City |
| Pillar 4 - Infrastructure & | Infrastructure Development | Social Infrastructure (SI) | ID_SI_2_NumberOfPublicLibraries | 2015 | City |

| | | | | | |
|---|---|---|---|---|---|
| Services | Index (ID) | ICT (ICT) | ID_ICT_Coverage of FixedTelephone | 2014 | City |
| | | Urban Mobility (UM) | ID_UM_3_TrafficFatalities (Reversed) | 2013 | City |
| Pillar 5 & 6 - Housing Development & Construction | | Housing Infrastructure (HI) | ID_HI_3_AccessToImprovedSanitation | 2011 | City |
| | | | ID_HI_4_AccessToElectricity | 2011 | City |
| | | | ID_HI_5_SufficientLivingArea | 2011 | City |
| Pillar 8 - Environmental Sustainability | Environmental Sustainability Index (ES) | Waste Management (WM) | ES_WM_2_LiquidWasteCollection/disposal-vacuum tracks no sewerage system | 2013 | City |
| | Equity And Social Inclusion Index (ESI) | Gender Inclusion (GI) | ESI_GI_2_WomenInTheLocalGovernment | 2010 | City |
| | | | ESI_GI_3_ WomenInTheWorkforce (% of economically active women) | 2007 | City |

The original list of indicators for the Ethiopian CPI in August had a total of 57 indicators (Basic 28 and Extended 30) for data collection, after replacements and adjustments the database for Mekelle had a total of 51 indicators (89.47%). Some of the indicators were simply not available because they are not collected as defined, some were dropped off the list for the same reason, there were some which could easily be calculated from the available data collected regularly by the bureaus. Some indicators were not available as defined in the CPI methodology but had directly related indicators which were useable as proxies based on the assumption that they principally measure the same factors. The following list shows how the indicators were managed:

1. NER In Secondary – **changed** to NER in lower public secondary school (9-10)
2. NER In Higher Education – **changed** to NER in Technical, Vocational Education and Training (TVET)
3. Informal Employment – **replaced** with a Proxy: share of informal sector in employment
4. Recurrent Expenditure Performance – available but was dropped from the list for lack of complete data
5. Capital Expenditure Performance – available – but was dropped for lack of complete data to calculate
6. Coverage Internet services –recommended unit is % - but available in #/1000 – revision of bench marks
7. Coverage of Fixed Telephone –recommended unit is % - but available in #/1000– revision of bench marks
8. Coverage of Mobile Phone–recommended unit is % - but available in #/1000– revision of bench marks
9. Average Daily Travel Time – round trip was used.
10. Housing Constructed – available but still largely inaccurate/representative, also needs bench marking
11. Housing demand -– available but still largely inaccurate/representative, also needs bench marking
12. Street Intersection Density – not collected by the cities – can be computed
13. Street Density – data available mainly cover roads 20m and above.
14. Land Allocated To Streets – not available but can easily be computed
15. Green Area Per Capita – not available due to differences in technical definitions
16. Accessibility To Open Public Area– not available due to differences in technical definitions
17. Share Of Renewable Energy Consumption– not available – dropped off the list
18. Solid Waste Collection – renamed - for safe Disposal
19. Solid Waste Recycling Share – no data available - for future use only
20. Gini Coefficient (Reversed) – not available at city level – can be computed for future use.
21. Equitable Secondary School Enrollment – not calculated – gender parity can be used as proxy.
22. Youth Unemployment – used age (15-29 yrs) excluding 30 yrs.

**Data Management Challenges**

The main data challenges in Mekelle in regard to CPI are similar to those faced in Addis Ababa; most indicators in the CPI do not share the same definitions as used by the local bureaus, including indicators for extended CPI which should reflect the local situation. Since the CSA prepares data on behalf of all regions and cities most bureaus do not have data, data collected by the bureaus are not available central in a central place. The best solution is to mainstream CPI indicators into the available data collection systems used by the local city bureaus and national agencies and the level of computations of indicators to include cities disaggregated by rural and urban – where applicable.

1. Some indicators are regularly computed at sub-city level only.
2. Data collection and management has not been standardized – every bureau collects and stores data for their own use and the data is not accessible to other bureaus or agencies – similar indicators may have different definitions.

## Findings and analysis of the CPI for Mekelle

This section provides the findings and detailed situational analysis highlighting areas of strength and weakness and attempt to identify opportunities for growth in the city of Mekelle. This will enable the government and Mekelle city administration to allocate resources appropriately with the aim of achieving prosperity for the benefit of the people of Mekelle.

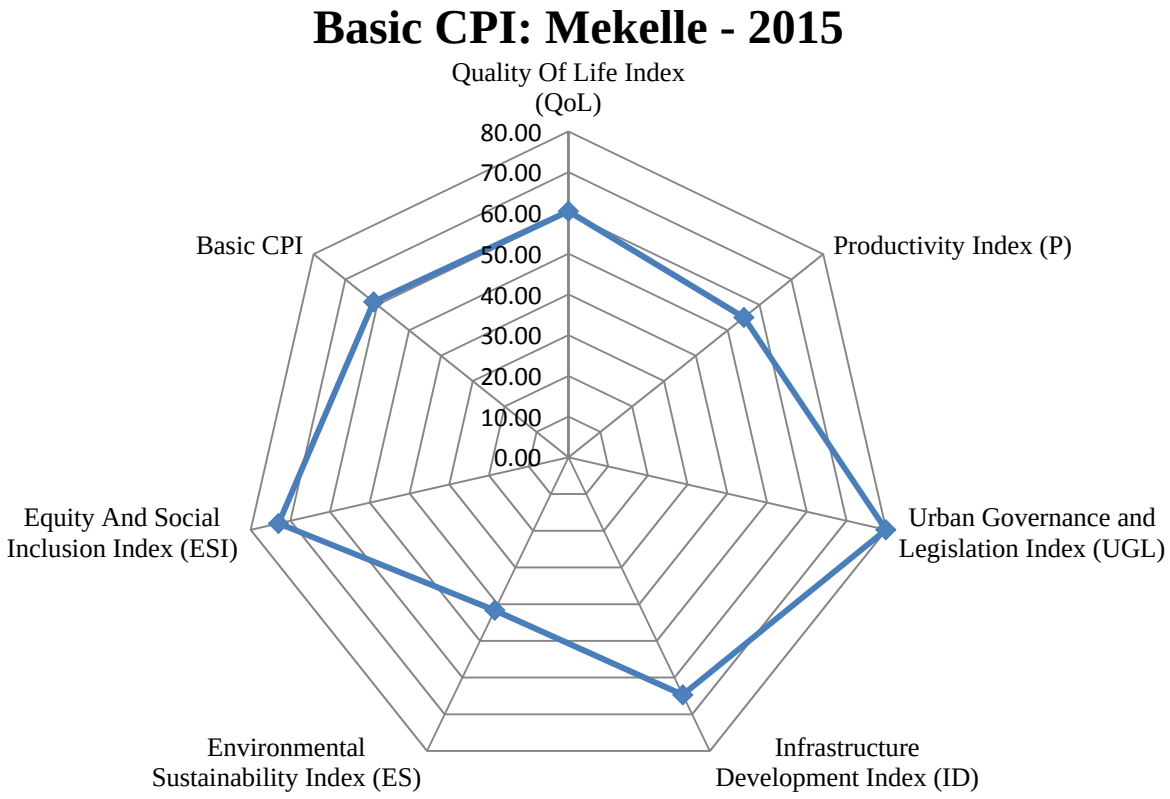
## Analysis of the CPI for Mekelle

The table below shows the overall CPI aggregate for the City of Mekelle, it indicates that the Basic CPI Index value for in 2015 is 61.15 while the extended CPI for the same year is 62.30.

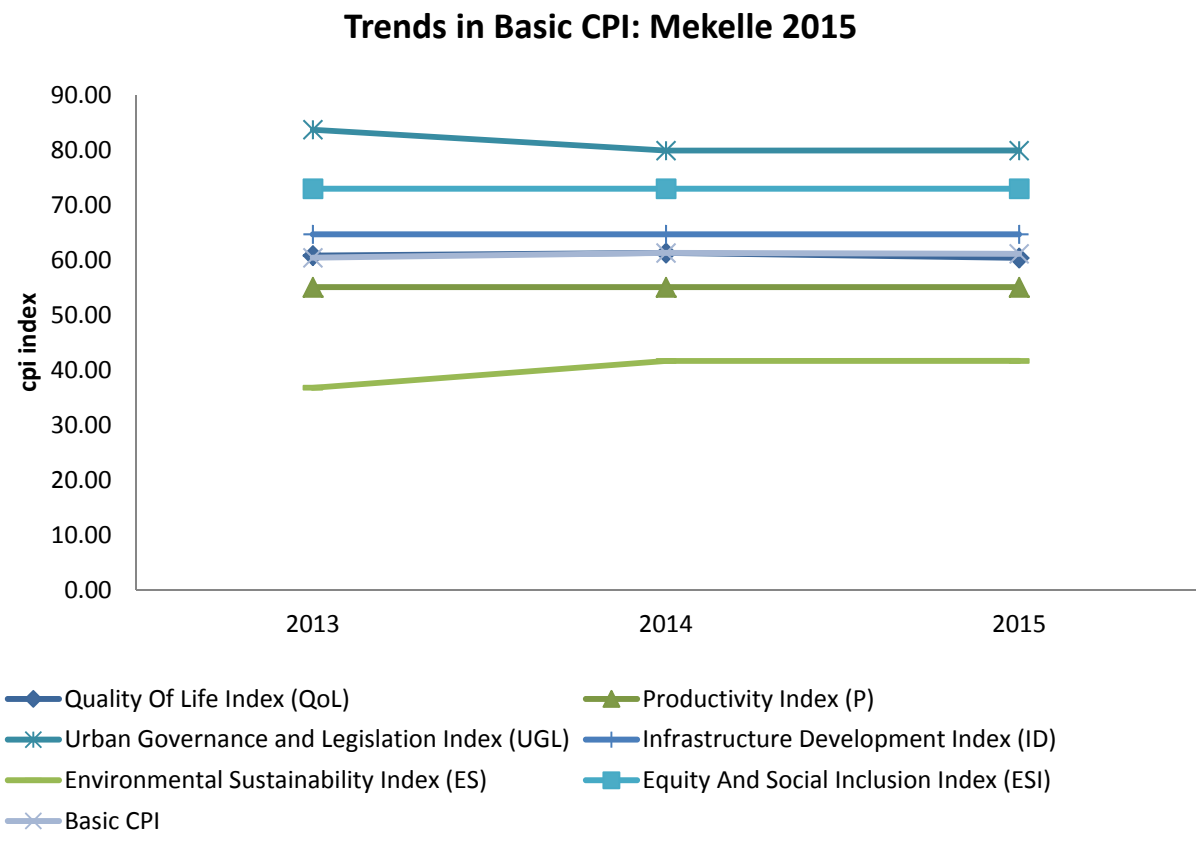
| Sub-Indices | 2013 | 2014 | 2015 | Indicator Type | Comments |
|---|---|---|---|---|---|
| Quality Of Life Index (QoL) | 60.82 | 61.30 | 60.40 | Basic | M. Strong |
| Quality Of Life Index (QoL) | 60.15 | 60.42 | 59.96 | Extended | M. Weak |
| Productivity Index (P) | 55.08 | 55.08 | 55.08 | Basic | M. Weak |
| Productivity Index (P) | 56.29 | 56.29 | 56.29 | Extended | M. Weak |
| Urban Governance and Legislation Index (UGL) | 83.72 | 79.92 | 79.92 | Basic | Strong |
| Urban Governance and Legislation Index (UGL) | 80.61 | 72.23 | 72.23 | Extended | Strong |
| Infrastructure Development Index (ID) | 64.69 | 64.69 | 64.69 | Basic | M. Strong |
| Infrastructure Development Index (ID) | 57.56 | 57.56 | 57.56 | Extended | M. Weak |

| | | | | | |
|---|---|---|---|---|---|
| Environmental Sustainability Index (ES) | 36.79 | 41.66 | 41.66 | Basic | Weak |
| Environmental Sustainability Index (ES) | 51.13 | 56.00 | 56.00 | Extended | M. Weak |
| Equity And Social Inclusion Index (ESI) | 72.98 | 72.98 | 72.98 | Basic | Strong |
| Equity And Social Inclusion Index (ESI) | 74.41 | 74.41 | 74.41 | Extended | Strong |
| **Basic CPI** | **60.43** | **61.30** | **61.15** | **Basic** | **M. Strong** |
| **Extended CPI** | **62.53** | **62.38** | **62.30** | **Extended** | **M. Strong** |

Both the Basic CPI and Extended CPI indicate that Mekelle generally has moderately strong factors of prosperity. It's interesting to note that Mekelle has more or less the same scores as Addis Ababa especially the basic CPI where Addis Ababa has a score of 60.97, this means that Mekelle is a small city but has strong factors to enable it prosper. The quality of life in Mekelle (60.4) is much higher than the quality of life in Addis Ababa (38.75), this alone pulled down the CPI for Addis Ababa by big percentage points, the urban governance indicators for Mekelle are also slightly better that Addis especially on the localized indicators. In terms of productivity Addis Ababa is doing much better than Mekelle, the infrastructure in Mekelle is also relatively good. Although E-CPI is currently designed to measure achievements but not the potential for prosperity, with these strong basic factors, Mekelle generally can be said to have the potential to become a prosperous city in Ethiopia. Apart from quality of life Mekelle has many areas of strength to build on to become more prosperous; its urban governance system is very good, infrastructure development in Mekele is also good, equity and social inclusion is good as well. The productivity dimension is just moderately weak meaning it require some little more attention to make it a strong factor.




The findings in the figure above shows that the key factors contributing to prosperity for Makelle city are its strength in good governance and legislation combined with good social cohesion, goo infrastructure, and the quality of life the people of Mekelle enjoys. These areas of strength provide Mekelle with great opportunities to make it prosperous




The chart shows the trends of the CPI and its dimensions over the last three years. The chart shows that the basic CPI and most of its dimensions has maintained relatively constant except urban governance and environmental sustainability which shows some gentle decline and gentle increase respectively. Urban governance being one of the strong pillars of prosperity in Mekelle, the decline should be investigated and corrected to avoid loss of gains made so far.

## Strengths and Weaknesses Analysis Based of E-CPI Sub-Dimensions

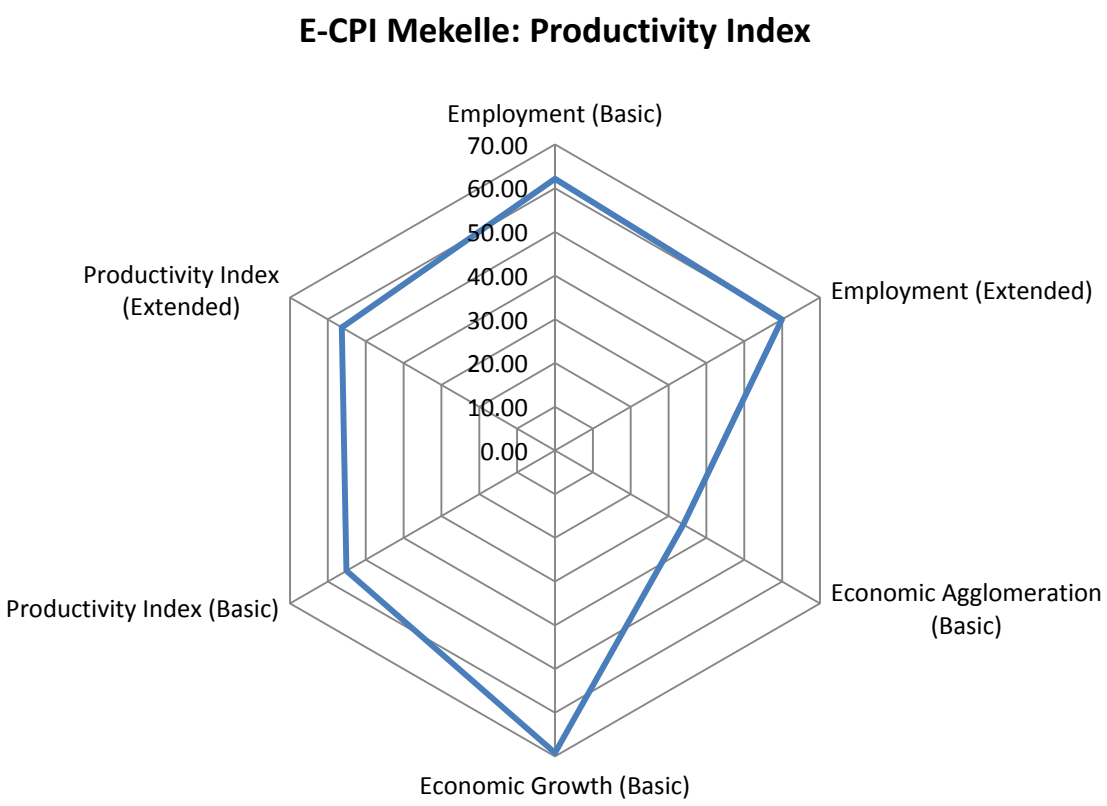
### 1. Analysis of the Strengths and weaknesses in Productivity - Mekelle City - Ethiopia

A prosperous city contributes to economic growth and development, generating income, employment and equal opportunities that further provide adequate living standards for the entire population. The following table breaks down the productivity dimension into its sub-dimensions and highlights areas of strength and weaknesses. Addis Ababa by 2015 had a basic productivity index score of 55.08; this according to the CPI scale is moderately weak, for Mekelle it's a big area of opportunity since it's just a few percentage point less to make it a moderately strong factor; with little more effort and investments productivity can be one of Mekelle's strong pillars of prosperity. To achieve this, Mekelle may copy Addis Ababa in handling of the economic agglomeration factor with a focus on MSEs or put more efforts and investments to make the SMEs programs work better. Its economic growth indicators and employment are good and needs to be made stronger.

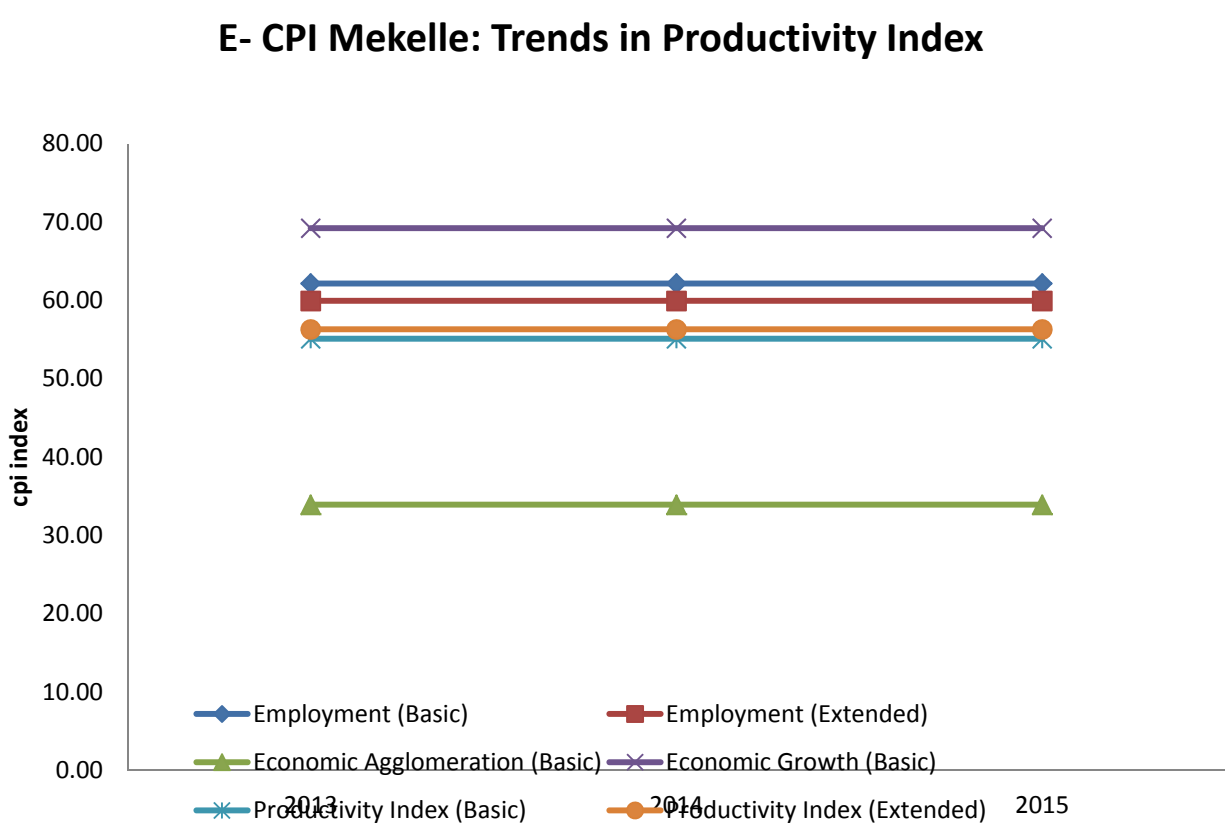
**E-CPI Mekelle: Productivity Index**

| Sub-Indices | 2013 | 2014 | 2015 | Indicator Type | Comments |
|---|---|---|---|---|---|
| Employment (E) | 62.14 | 62.14 | 62.14 | Basic | M. Strong |
| Employment (E) | 59.92 | 59.92 | 59.92 | Extended | M. Weak |
| Economic Agglomeration (EA) | 33.91 | 33.91 | 33.91 | Basic | V. Weak |
| Economic Growth (EG) | 69.19 | 69.19 | 69.19 | Basic | M. Strong |
| **Productivity Index (P)** | **55.08** | **55.08** | **55.08** | **Basic** | **M. Weak** |
| **Productivity Index (P)** | **56.29** | **56.29** | **56.29** | **Extended** | **M. Weak** |

The chart below clearly shows that economic growth and employment indicators are key areas that determines the prosperity of Mekelle city while economic agglomoration is its weakest area which needs urgent attention. The economic aglomoration sub index mainly captured the SMEs sector can be a good oportuinity and a source of strength to the conomy of the city – it requires further investigation




The trend analysis chart below shows no change in all the indicators. This is just due to lack of enough historical data for the indicator to enable better analysis of trends.




## 2. Analysis of the Infrastructure Dimension of the CPI for Mekelle City

A prosperous city deploys the infrastructure, physical assets and amenities – adequate water, sanitation, power supply, road network, information and communications technology, etc. – required to sustain both the population and the economy, and provide better quality of life.

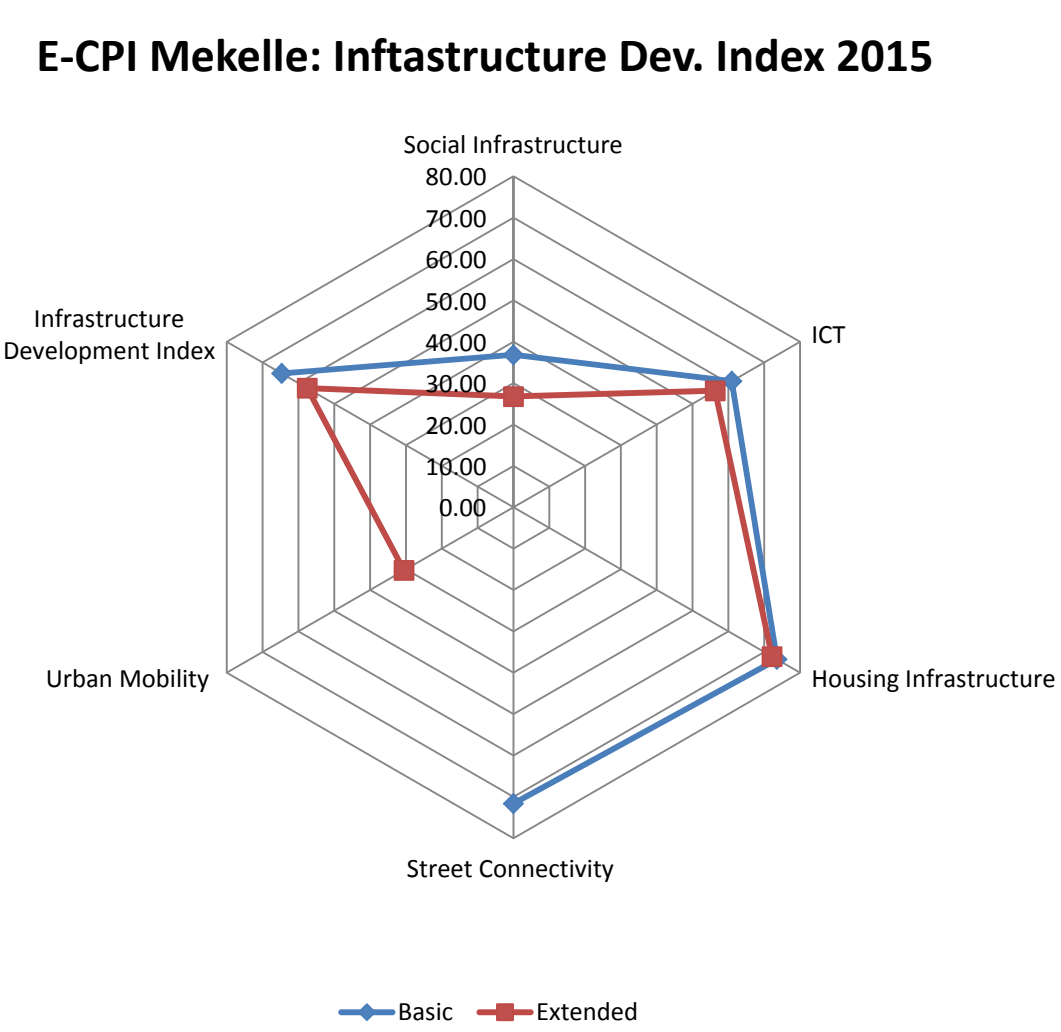
The table shows that Mekelle in 2015 had a basic infrastructure development index score of 64.69; this according to the CPI scale is moderately strong, infrastructure being one of the most important factors of growth, there is an opportunity to make it better to propel growth in other sectors and secure prosperity for the city Mekelle, strength in infrastructure development is also a good indicator of potential for prosperity The housing infrastructure and road connectivity are the areas of strength in this important dimension.

The ICT sub dimension is also strong and this is attributed to the coverage of mobile telephone in Mekelle, this also a big area of opportunity for growth of the city which should be harnessed. Urban

mobility is one of the weakest areas and this is attributed to the relatively higher rate of accident fatalities. Another weak area which needs urgent attention is social infrastructure; Mekelle still has very low number of physicians and public libraries relative to its population.

**E-CPI Mekelle: Infrastructure Development Index**

| Sub-Indices | 2013 | 2014 | 2015 | Indicator Type | Comments |
|---|---|---|---|---|---|
| Social Infrastructure (SI) | 36.85 | 36.85 | 36.85 | Basic | V. Weak |
| Social Infrastructure (SI) | 26.76 | 26.76 | 26.76 | Extended | V. Weak |
| ICT (ICT) | 56.29 | 56.29 | 56.29 | Extended | M. Weak |
| ICT (ICT) | 60.93 | 60.93 | 60.93 | Basic | M. Strong |
| Urban Mobility (UM) | 30.53 | 30.53 | 30.53 | Extended | V. Weak |
| Housing Infrastructure (HI) | 73.55 | 73.55 | 73.55 | Basic | Strong |
| Housing Infrastructure (HI) | 72.16 | 72.16 | 72.16 | Extended | Strong |
| Street Connectivity (SC) | 71.63 | 71.63 | 71.63 | Basic | Strong |
| **Infrastructure Development Index (IDI)** | **64.69** | **64.69** | **64.69** | **Basic** | **M. Strong** |
| **Infrastructure Development Index (IDI)** | **57.56** | **57.56** | **57.56** | **Extended** | **M. Weak** |




From the chart its observable that there was not basic urban mobility indicators and extended street connectivity indicators. The chart shows that all basic indicators of infrastructure development are stronger that localized indicators except in housing infrastructure where they are more or less the same. This means that Mekelle should identify the basic indicators and make them stronger and at the same time improve the localized indicators to improve the CPI scores for better prosperity.

**Analysis of Trends in Infrastructure Development index**

The table above shows no change in all the indicators. This is just due to lack of enough historical data for the indicator to enable better analysis of trends.

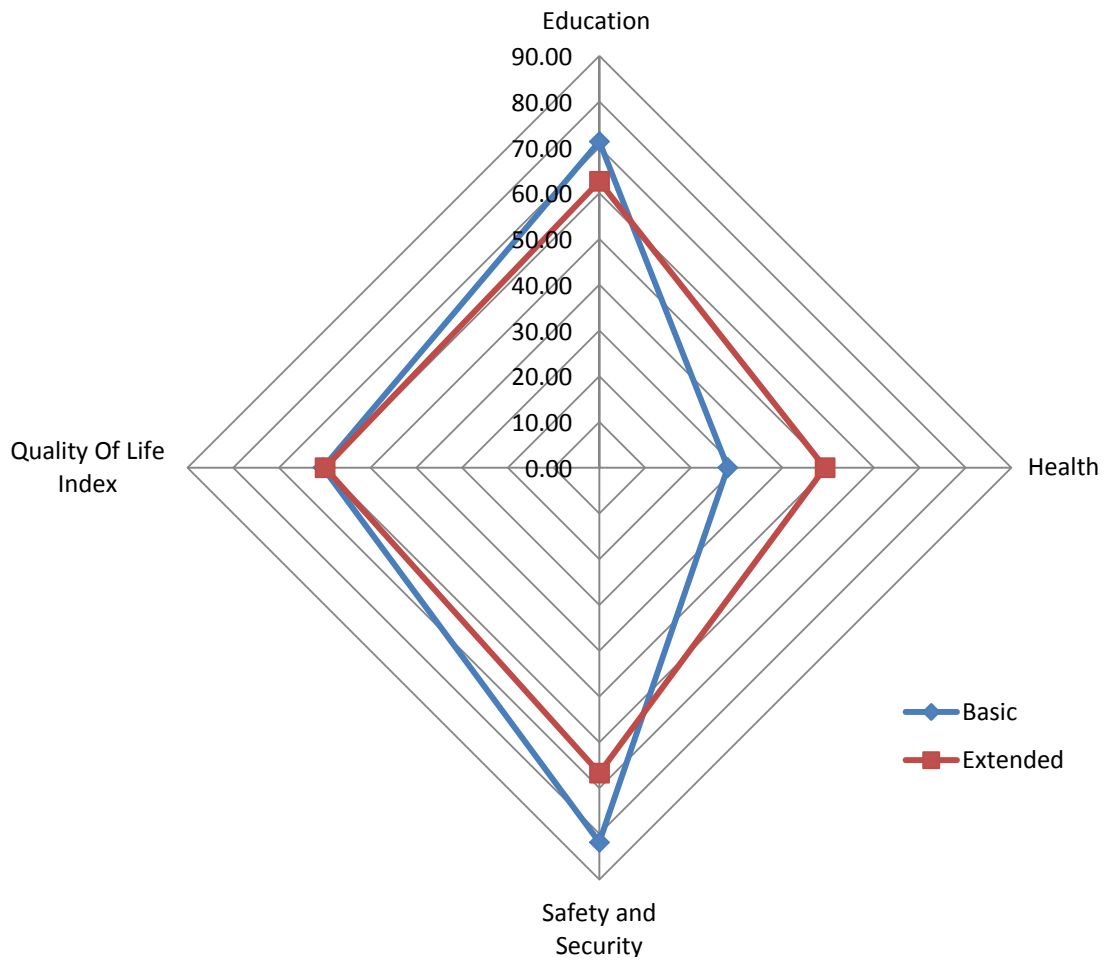
## 3. Analysis of the Quality of Life dimension of the CPI for Mekelle City

Prosperous cities provide amenities such as social services, education, health, recreation, safety and security required for improved living standards, enabling the population to maximize individual potential and to lead fulfilling lives.

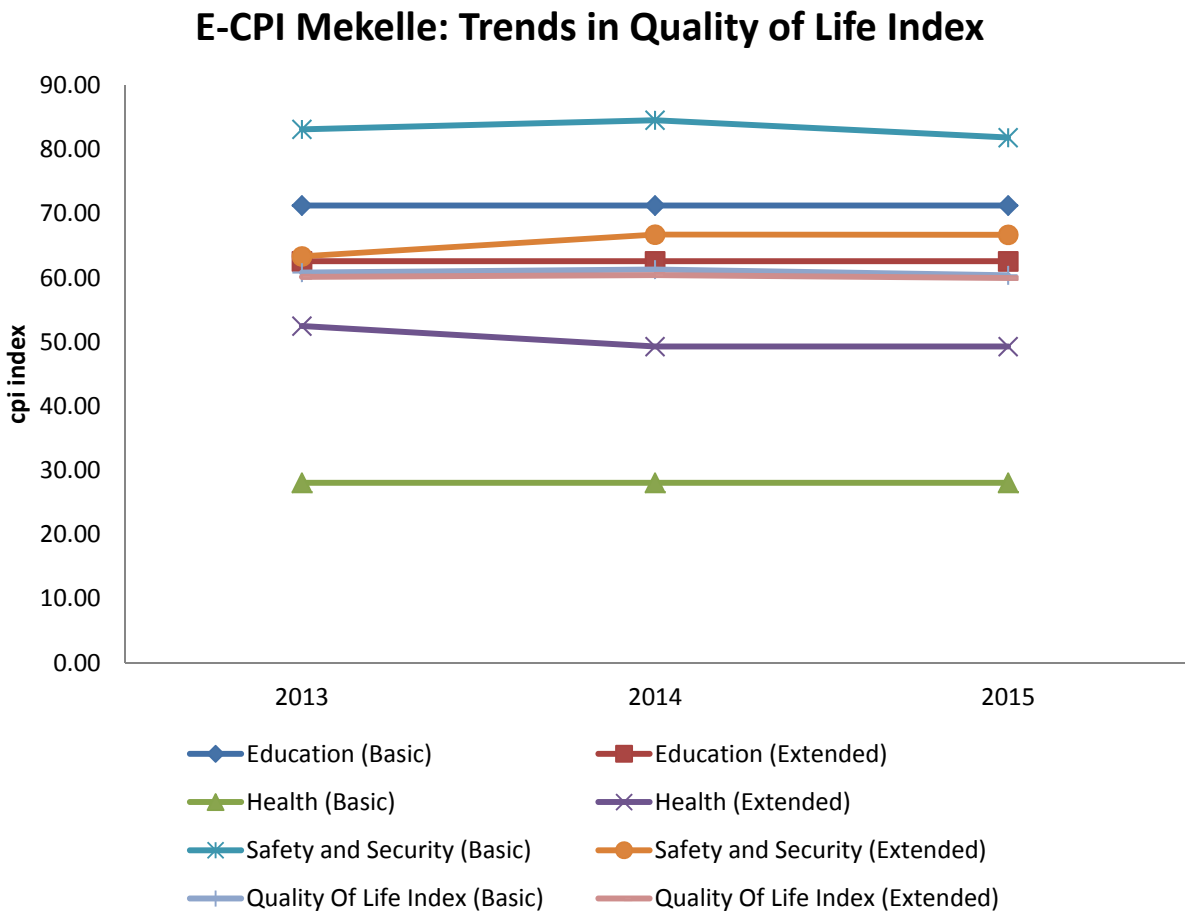
The table below breaks down the quality of life dimension and highlights the areas of strength and weaknesses of the city of Mekelle. The table shows that in 2015 the basic quality of life index for Mekelle is at 60.4, this implies that quality of life in Mekelle is generally good; in fact it is better than Addis Ababa. The extended indicator of quality of life is slightly weaker since most localized indicators of quality of life are weaker that basic indicators. If not for the health sub dimension, the quality of life in Mekele would be above 70%, the weakness observed in the health sub dimension is attributed to the relatively low life expectancy and under-five mortality which has reduce significantly over the years but still needs to be reduce further. Health is one of the basic ingredients of prosperity; city can only prosper when its inhabitants enjoy a long healthy life, right from birth.

**E-CPI Mekelle: Quality of Life Index**

| Sub-Indices | 2013 | 2014 | 2015 | Indicator Type | Comments |
|---|---|---|---|---|---|
| Education (E) | 71.28 | 71.28 | 71.28 | Basic | Strong |
| Education (E) | 62.58 | 62.58 | 62.58 | Extended | M. Strong |
| Health (H) | 28.06 | 28.06 | 28.06 | Basic | V. Weak |
| Health (H) | 52.48 | 49.29 | 49.29 | Extended | Weak |
| Safety and Security | 83.14 | 84.56 | 81.85 | Basic | V. Strong |
| Safety and Security | 63.36 | 66.75 | 66.71 | Extended | M. Strong |
| **Quality Of Life Index (QoL)** | **60.82** | **61.30** | **60.40** | **Basic** | **M. Strong** |
| **Quality Of Life Index (QoL)** | **60.15** | **60.42** | **59.96** | **Extended** | **M. Weak** |




The city of Mekelle is doing relatively well in providing good quality of life to its inhabitants, the city's main strength is in the education provision and safety and security, security in Mekelle is very good, and this is very big advantage for attracting investments. The health services in the city needs to be improved, especially by reducing further the rate of under–five mortality.




The graph shows that safety and security is at the top but there is some decline setting in, the same applies to localized health indicators. Safety and security is improving while most of the other indicators are constant. In general the quality of life in Mekelle is still stable.

## 4. Analysis of the Equity and Social Inclusion Dimension of the CPI for Mekelle City

A city is only prosperous to the extent that poverty and inequalities are minimal. No city can claim to be prosperous when large segments of the population live in abject poverty and deprivation. This involves reducing the incidence of slums and new forms of poverty and marginalization. The table

below shows a breakdown of the equity and social inclusion dimension in to its sub dimensions and highlights areas of strength and weaknesses. The findings in the table shows that equity and social inclusion index for Mekelle is 72.98 for basic and 74.41 for extended, this means that equity and social inclusion is a strong factor of prosperity for Mekelle, it also shows that the city has stronger localized indicators of equity and social inclusion. The strongest equity and social inclusion factors for the city are economic equity and gender inclusion, these are mainly is attributed to the reduced level of poverty in the city.

**E-CPI Mekelle: Equity and Social Inclusion Index 2015**

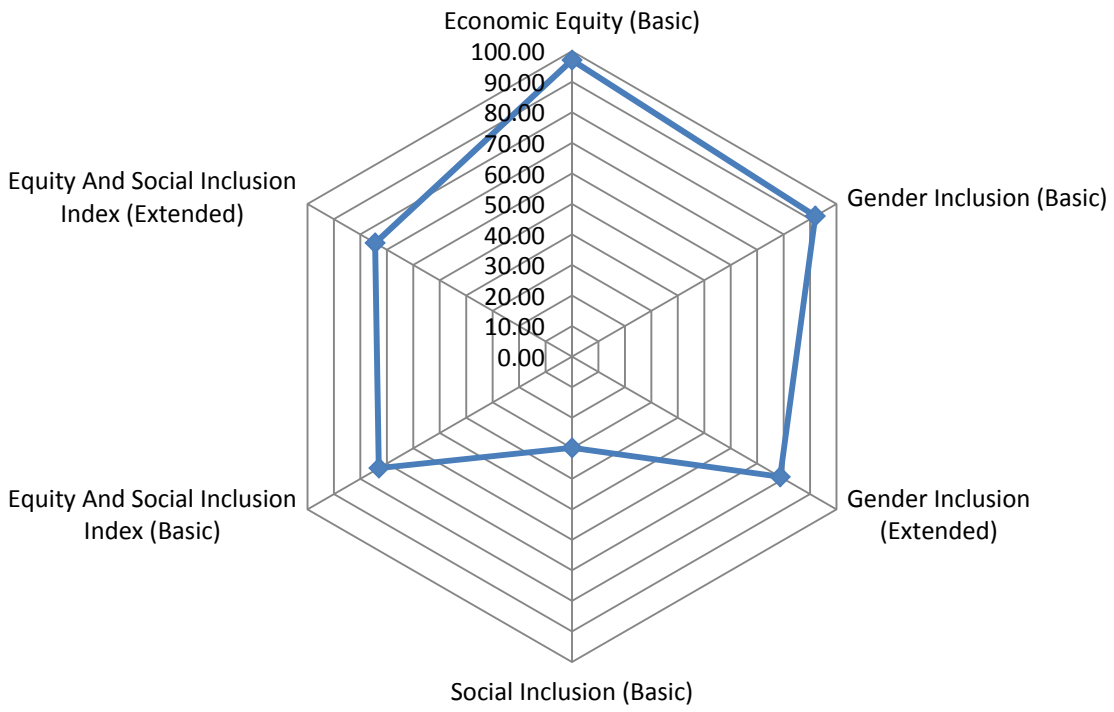
| Sub-Indices | 2013 | 2014 | 2015 | Indicator Type | Comments |
|---|---|---|---|---|---|
| Economic Equity (EE) | 97.07 | 97.07 | 97.07 | Basic | V. Strong |
| Gender Inclusion (GI) | 92.00 | 92.00 | 92.00 | Basic | V. Strong |
| Gender Inclusion (GI) | 78.72 | 78.72 | 78.72 | Extended | Strong |
| Social Inclusion (SI) | 29.87 | 29.87 | 29.87 | Basic | V. Weak |
| **Equity And Social Inclusion Index (ESI)** | **72.98** | **72.98** | **72.98** | **Basic** | **Strong** |
| **Equity And Social Inclusion Index (ESI)** | **74.41** | **74.41** | **74.41** | **Extended** | **Strong** |

Gender inclusion is also one area of strength, mainly attributed to equitable secondary education and the high proportion of women in the workforce.

Girls dancing and celebrating during Ashenda Festival – Mekelle. (Picture by Mingala J. Obure)

The period of data collection coincided with the annual cultural celebration in Tigray region called Asheda Festival – a week of celebration divorced to girls and young women; through observation it was evident that Mekelle has a unique predisposition for gender empowerment emanating from the culture of the local community. This cultural advantage inherent in the Tigrean people can be harnessed to ensure gender mainstreaming in all sectors, this can go a long way in strengthening the gender factor and promote equal distribution of the benefits of prosperity in Mekelle.

## E-CPI Mekelle: Basic Equity & Social Inclusion Index 2015




According to the chart above, Economic equity is the strongest factor followed by basic indicators of gender inclusion and then localized indicators. Social inclusion is still very weak in Mekelle and this is attributed to the relative high youth unemployment rate.

**Analysis of Trends in Equity and Social Inclusion index**

The table above shows no change in all the indicators. This is just due to lack of enough historical data for the indicator to enable better analysis of trends.

### 5. Analysis of the Environmental Sustainability Dimension of the CPI for Mekelle City

The growth of cities and their economic development should not destroy or degrade the environment; instead, the city's natural assets are preserved for the sake of sustainable urbanization.

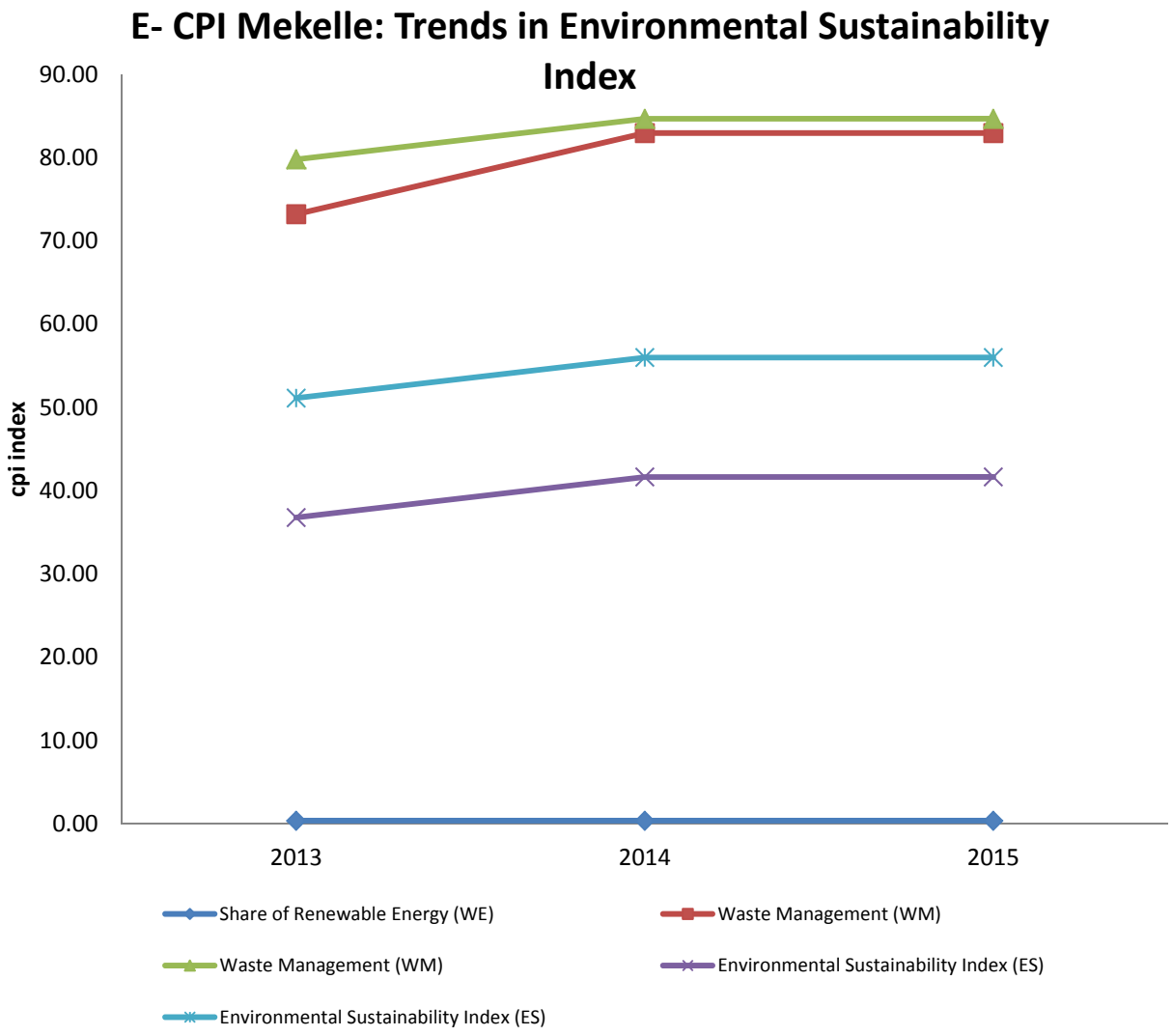
The environmental sustainability index for Mekelle is 41.66 for basic indicators and 56 for extended indicators; this implies that environmental sustainability is a weak factor.

The city of Mekele has very negligible share of renewable energy making its environmental index very low, however, it has very good solid and liquid waste management system. A high proportion of solid waste generated in the city is collected and safely disposed. It is very interesting to note that the city of Mekelle has no sewerage system for waste water collection, however, the administration has managed to properly coordinate privately and public owned vacuum tanker tracks which collects high proportion of liquid waste generated in the city for safe disposal. The city has also stopped the recycling of waste for use in farms due high concentration of harmful chemicals like heady metals. Without the water and energy (share of renewable energy) sub dimension the environmental index for Mekelle would be above 80% meaning is still a very strong factor of prosperity for Mekelle city.

**E-CPI Mekelle: Environmental Sustainability Index**

| **Sub-Indices** | **2013** | **2014** | **2015** | **Indicator Type** | **Comments** |
|---|---|---|---|---|---|
| Share of Renewable Energy (SRE) | 0.37 | 0.37 | 0.37 | Basic | V. Weak |
| Waste Management (WM) | 73.21 | 82.95 | 82.95 | Basic | V. Strong |
| Waste Management (WM) | 79.80 | 84.67 | 84.67 | Extended | V. Strong |
| **Environmental Sustainability Index (ES)** | **36.79** | **41.66** | **41.66** | **Basic** | **Weak** |
| **Environmental Sustainability Index (ES)** | **51.13** | **56.00** | **56.00** | **Extended** | **M. Weak** |

Based on the amount of solid waste generated in the city and the amount collected for safe disposal, the city enjoys very high level of environmental sustainability scores. There was no data on waste recycling, air quality and waste management data was not included as well.




This chart shows that the waste management in the city of Mekelle is very good but it has no significant share of renewable energy. Most of the environmental sustainability indicators are gradually increasing.

## 6. Analysis of the Governance and Legislation Dimension of the CPI for Mekelle City

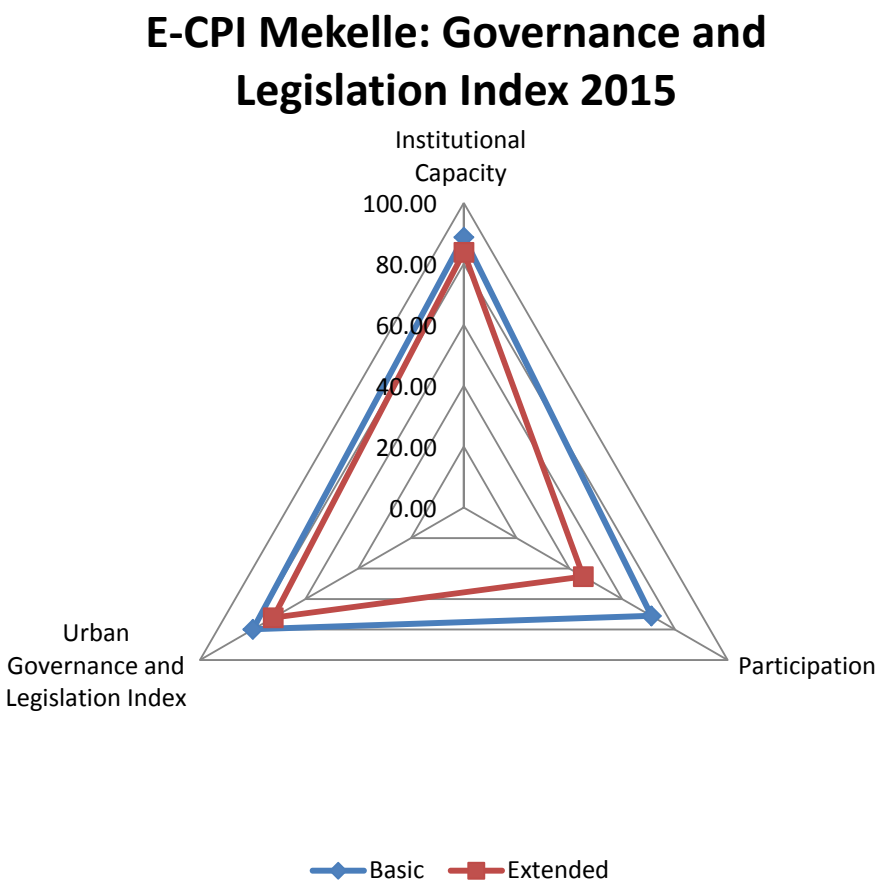
Governance and Legislation In a prosperous city, instruments of power, good governance, urban planning, laws, regulations and institutional frameworks, ensure the conditions for the control and effective

functioning of the other dimensions. Cities are best able to combine sustainability and shared prosperity through effective urban governance and transformational leadership, deploying appropriate and effective policies, laws and regulations, and creating adequate institutional frameworks with strong local institutions and sound institutional arrangements. The findings in the table below indicates that in 2015 the basic governance and legislation index for Mekelle was 79.92 while the extended index was 72.23, this means that governance and legislation is a strong factor of prosperity for the city of Mekelle, however, there are localized governance indicators relating to public participation in civic affairs which needs to be addressed

The main sources of strength under this dimension are civic participation especially in elections strong institutional capacity which is attributed to the high own revenue collection, good recurrent and capital expenditure performance coupled with high investment capacity. These areas of funds management is a big strength to which can be utilized to attract investments and spur growth.

**E-CPI Mekelle: Governance and Legislation Index 2015**

| Sub-Indices | 2013 | 2014 | 2015 | Indicator Type | Comments |
|---|---|---|---|---|---|
| Institutional Capacity (IC) | 96.34 | 88.73 | 88.73 | Basic | V. Strong |
| Institutional Capacity (IC) | 73.58 | 83.80 | 83.80 | Extended | V. Strong |
| Participation (P) | 71.10 | 71.10 | 71.10 | Basic | Strong |
| Participation (P) | 81.40 | 45.27 | 45.27 | Extended | Weak |
| **Urban Governance and Legislation Index (UGL)** | **83.72** | **79.92** | **79.92** | **Basic** | **Strong** |
| **Urban Governance and Legislation Index (UGL)** | **80.61** | **72.23** | **72.23** | **Extended** | **Strong** |




From the chart its showing that Mekelle city has good institutional capacity to prosper, both basic and localized are strong, it also has strength in basic indicator of civic involvement in elections, however , there is huge weakness in the localized indicators of civic participation or involvement of the public in development issues.

## Conclusions and Recommendations

In conclusion, Mekelle is generally on the path to prosperity, it had many strong pillars of prosperity such as its education system, safety and security, employment, good economic growth factors, and especially the institutional capacity to manage funds well, the ICT sector is also a promising area of strength, housing infrastructure development is strong, road connectivity is good

for growth, good waste management system for a good start, economic and gender inclusion is another strong factor of prosperity for the city.

The areas of serious weakness are in social infrastructure, urban mobility focusing on reduction of fatal accidents, the health sector needs urgent attention, economic agglomeration is important especially now that the city is undertaking a master plan revision.

## Lessons learnt

The most important lesson learnt is the importance of data; availability and accessibility as well structured data collection, storage systems. Data collection and keeping standard list of CPI indicators to be monitored over the years is a key. Before rolling out CPI to other cities, there is need to establish a national CPI program at the office with dedicated personnel to ensure that CPI indicators and relevant data is streamline in the existing data collection and storage systems at national, regional and city level and ensure that all CPI indicators are harmonized through all these levels.

## Policy and Programme implications

The CPI is as useful as a strategic policy tool where data and information that make the index is used to detect the progress of the dimensions of the prosperity and to understand the deficiencies so that it helps to take and formulate appropriate measures and policies.

**APPENDIX**

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Annex A: Summary of the data collection experiences.

Annex B: Persons consulted for this exercise
ADD the UNHABITAT team
ADD the Ethiopia Addis names/team
ADD the Mekele team

Annex C: Any other