



## **TECHNICAL PAPER 3**

### **CITIES AND REGIONS**



## 3 CITIES AND REGIONS:

A Spatial Analysis of the Provincial System of Cities for Strategizing Balanced Regional Growth & Development

This chapter looks at the provincial system of cities in order to gain an understanding and structure of the provincial economy. Analysis and discussion are used to clarify existing gaps in the understanding *of* and the interconnectivity of various types of settlements and their role in the development of the province. Administrative structures, jurisdictions and regions are also discussed in order create a synergy between the system of cities; and how best to manage urbanization & economic growth.

### SUB SECTIONS:

3.1 Urbanization: Turning Challenges into Opportunities

3.2 Regional Trends in Development

3.3 Urbanization & Cities' Role in Development

3.4 City Cluster Development & System of Cities

3.5 Strategies for Distributed Development





### 3.1 URBANIZATION: TURNING CHALLENGES INTO OPPORTUNITIES

Urbanization is a product of concentrated human activity across space, and cities are constantly trying to find new ways to utilize resources and provide for their inhabitants. This process calls for interventions in the built environment to achieve maximum efficiency and utility. These interventions enhance industrial activity, housing supply, and civil services, and require the input of resources and raw materials that are often derived from surrounding rural and natural regions.

In the global context, urbanization allows cities to form a relationship with one another through trade, finance, and politics. The dynamic nature of human settlements has enabled cities across the globe to evolve as complex organisms in the face of changing socio-political environments, and the introduction of advanced technology has enabled new forms of economic and political systems. With continuing technological interventions and the influence of globalization, cities experience constant change in both form and function; the city of today is not the same as that of yesterday. This process demands that the urban management sector be equipped with up to date information and substantial knowledge of global and local systems to keep up with these changes.

In a fast changing world, the capacity to predict upcoming trends, rather than just following them, remains a priority. In most cases, complete information may not be available or there may be disagreement on the causes and remedies for a problem. According to the Commission on Urbanization & Growth<sup>1</sup> sponsored by the World Bank and other international Development and aid agencies;

*“While researchers will continue to improve our knowledge of the world, policy makers cannot wait for scholars to satisfy all of their doubts or resolve their differences. Decisions must be made with only partial knowledge of the world. One consequence is that most policy decisions, however well-informed, take on the character of experiments, which yield useful information about the way the world works, even if they do not always turn out the way policy makers hoped. It is as well to recognize this fact, if only so that policy makers can be quick to spot failures and learn from mistakes.”*

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<sup>1</sup> Spence, M., Annez, P. C., & Buckley, R. M. (2009). *Urbanization and growth: commission on growth and development*.

What can be inferred from the above statement is that urbanization has its own momentum. Directing and managing this momentum is a function best programmed by all stakeholders, and best formalized through government institutions. Decisions need to be taken in the presence of the best possible information and executed through appropriate monitoring frameworks; these can then quantify results and address the need for mid-way policy changes.

#### The urban challenge

In the case of Pakistan, as with other developing countries, urbanization brings challenges of its own; from high population growth to rapid urbanization; from housing shortage to inadequate service provision; from low municipal recoveries to deteriorating infrastructure; from increasingly unsafe cities to a rapidly declining urban environment; and to a society fragmented between people, government and the ‘private’ sector.

It is not just a lack of funding, or limited natural resources that exacerbate these issues, but rather the lack of a systematic framework that is needed to ensure efficient management of the various sectors deployed in the city. Even with the provision of infrastructure, some cities in the region fail to meet development goals due to the inefficient execution and maintenance of the services dependent on that infrastructure. A substantial example is that of the WASH initiative in Pakistan, which claims to have provided 91% of the population with access to improved water services. This figure, however, does not account for the degraded quality and inconsistent supply of the water being provided.

The world already possesses a wealth of knowledge on how to address these problems, but what is missing in Pakistan is a defined governance system that designates responsibilities, defines mandates, outlines jurisdictions, and supports sustained growth in our cities. Moreover, the planning process in Pakistan has suffered from lack of data which necessitates uninformed decision making.

There has been much discussion on the process of urbanization on a global platform, leading to the development of models that rationalize this process. These models, however, are not suitable in the case of Pakistan as they have been designed in the context of the developed world. To address this gap, the PSS project is designed to study and describe urbanization in the context of Punjab. The system of cities framework is an initial attempt to develop a method that narrates the socio-economic framework of cities in the province.



## Distribution & classification of urban centers in Punjab

Lahore, the capital city of Punjab, has been the center of development in the region with a population just crossing 11 million. It holds the seat of governance and is the only city of Punjab that attracts international investment of this scale. This investment, however, has driven development in Lahore at the expense of neighboring cities and towns. This creates a systemic regional imbalance which cannot be sustained in the long run.

Currently, there are around 194 notified urban areas in Punjab. Pakistan lacks an official city classification system and its cities are tentatively classified/administered by Metropolitan and Municipal Corporations, and Municipal Committees. These consist of 1 metropolitan corporation at the Provincial Capital of Lahore, 11 municipal corporations and 182 municipal committees.

**Table 3.01** official classification

OFFICIAL CLASSIFICATION	POPULATION RANGE	CITIES	% POPULATION
Metropolitan corporation	Based on government notification	1	28%
Municipal Corporation	>500,000	11	30%
Municipal Committee <sup>2</sup>	30,000-500,000	182	42%

Source: Punjab Local Government Act, 2013<sup>3</sup>

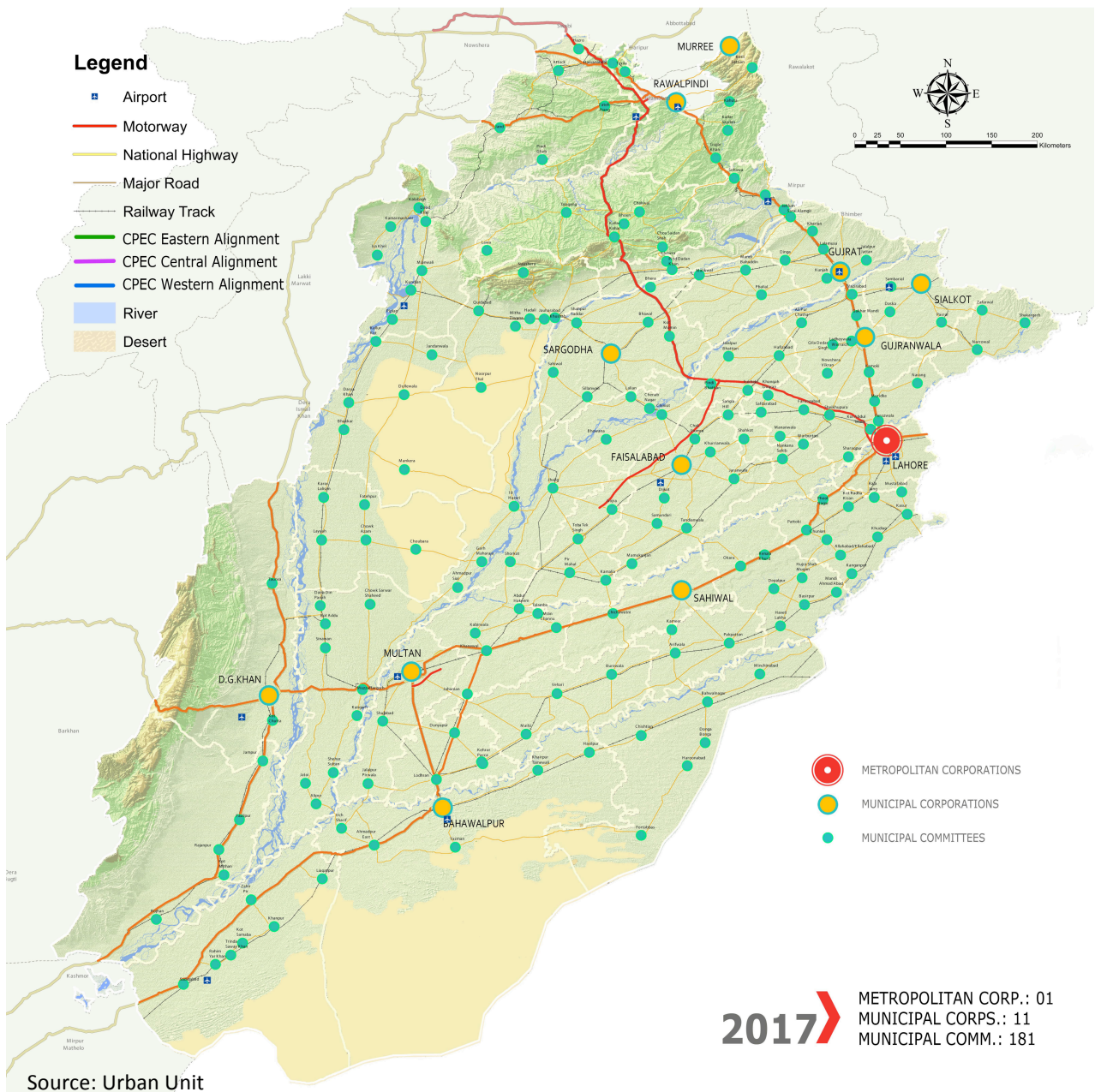
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<sup>2</sup> Some cities are classified as Municipal Committees despite having a population below 30,000

<sup>3</sup> Will be updated on the official notification of PLGA 2019



**Map 3.02:** Map showing existing Metropolitan Corporations, Municipal Corporations and Municipal Committees





### 3.2 REGIONAL TRENDS IN DEVELOPMENT

Punjab is the most populous province of Pakistan with approximately 56% of the country's total population. It is also Pakistan's second largest province, covering an area of 205,344 km<sup>2</sup>. The population of Punjab grew from 20 million in 1951, to 73 million in 1998 and reached 110 million in 2017 according to the 6<sup>th</sup> population and housing census. The population growth rate in 1998 was 2.64% which has decreased to the level of 2.13% in 2017. If the current growth rate continues, Punjab's population will double in the next 32 years.

Pakistan also has one of the fastest urbanization rates in Asia at 3%. The United Nations Population Division estimates that by 2030, nearly half the country's population will live in cities. Unforeseen migration due to natural disasters and climate change in surrounding rural areas, however, may lead to a faster rate of urbanization than predicted by the UN.

From amongst 194 cities and towns of Punjab, the large and intermediate cities are expected to feel the brunt of this influx. With only 5 large and 11 intermediate cities, the pressure to accommodate a growing population would require extensive planning and investment. The future cities of Punjab will be required to play a crucial role in developing a more efficient economy, improving human capital, and enhancing the quality of life across the province. In addition to the identification of new settlements, policies will need to be implemented to discourage sprawl, and infrastructure will need to be designed to cater to the increasing population.

#### Demographic shifts and urbanization

According to PSLM data, around 45% of the workforce in Punjab is employed in the agricultural sector, 24% in manufacturing and 31% in the services sector. Around 63% of the population resides in areas designated as rural. With increased global to regional connectivity, new industry and trade opportunities will emerge enabling the economy to reverse this distribution to a targeted 70% urban by 2047. The urban economy will have to have the capacity to absorb an average of 2 million workers every year by 2047. This would only be possible through rapid industrialization and expanding the urban economy through SME development.

Another significant factor is the youth population which according to the 2017 census makes up 57% of Punjab, of which 59% is of working age. This presents an opportunity to invest in the youth, however, this will require much more than mere job provision. Skill-based and blue-collar training programs are required to

address the gaps the youth may have faced in educational opportunities. An assessment of future industries will need to be done to promote work in the market that enables the youth to participate in growing industry sectors, such as automation, user interface and I.T. Additionally, cities will also have to accommodate the growing social needs of its population, providing public and civic spaces conducive to knowledge sharing and interaction.

With such large population numbers to contend with, development would have to be equitable and inclusive so that regional resource boundaries are not strained, and a few cities not overburdened with uncontrolled urbanization. As in the case of China's developmental model, rather than people coming to 'cities', the cities will have to be taken to the people. Cities will not only have to be developed throughout the province but also must be efficient economically and socially so that the maximum GDP and HDI potential of cities is achieved.

#### Urbanization Trends

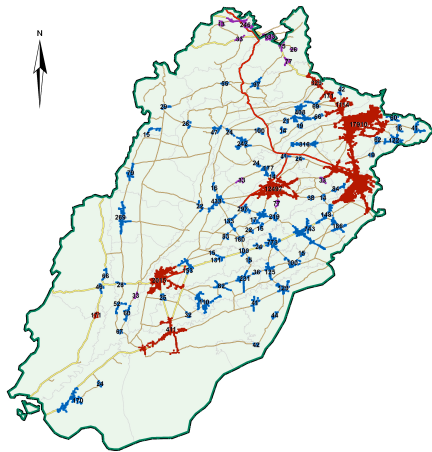
Today Punjab contributes to almost 60% of the GDP of Pakistan. With vast agriculture plains, much of its economy has its base in agricultural but has recently seen a rapid increase in the services. The level of urbanization varies across the province with Lahore and Rawalpindi comprising almost 55% and 40% urban population respectively, and Faisalabad and Multan with 28% and 23%, respectively. Lahore division itself has already reached 70% urban population.

The regional difference in the level of urbanization may be attributed to the presence of two Global cities in Punjab. One being the federally administered capital city of Islamabad, which augments Rawalpindi's regional economy and the second being Lahore, the historic seat of governance for the province. This fits in well with the theory that Global cities are an impetus for economic growth through their connectivity with the global market. Due to their attractiveness, most major industries have also chosen to locate themselves in these major cities, creating a regional imbalance and putting stress on the region's infrastructure, environment, and social and governance systems.





**Figure 3.03:** Industrial Clustering in Punjab



**Source:** Urban Unit Analysis

Historically, Lahore and Islamabad have been part of the main trade route of the Silk Road which connects cities of northern Pakistan with the province of Sindh in southern Pakistan. As a result of this, the western part of Punjab remains largely underdeveloped and lacks transportation infrastructure. With the advent of CPEC related projects in KPK and Baluchistan, Punjab will have to invest in lateral connectivity routes that will help it link to other provinces besides Sindh.

At the local level, larger cities are facing the negative consequences of sprawl. Unfortunately, current policies incentivize sprawl by offering easy land conversion and housing opportunities outside main city boundaries and by limiting density in city centers. The neglect of city centers also acts as another push factor that drives the affluent to the edge of the city. Those who live near the edges then invest in cars to commute long distances, putting a burden on existing infrastructure, adding to fuel consumption, gas emission, and congestion in city centers.

The strategy for maintaining city density and discouraging sprawl would require policy changes, enforcement of byelaws, social awareness and an interdisciplinary approach to urban management and planning.

Within the context of Punjab, two primary consequences of urbanization need to be addressed:

**Addressing unbalanced regional development** by leveraging new connectivity opportunities through CPEC and planning for the efficient distribution of economic resources and their utilization. This will only lead to equitable development if an adequate policy and implementation framework is in place that incentivizes industries along the CPEC corridor to invest in local

economic development programs. Measures also need to be taken to ensure that the indigenous population along the CPEC corridor is enabled to participate in the process of development.

**Enable cities to be competitive in the global economy** by enhancing the manufacturing industry, expanding their export base, and improving the transport and trade infrastructure in the region. This will require policies that encourage investment in manufacturing as well as provide an environment conducive to new businesses. A focus on human development, and environmental protection is necessary to allow for sustained growth in the regional economy.

The main thrust of the urbanization strategy will be to counter these two issues to build a distributed network of urban centers which are able to best utilize the geographic space available and contribute to GDP growth through added economic efficiency.

This next section discusses the issue of equitable development by studying the process urbanization in Pakistan at a regional scale.

### 3.2.1 Historical context

The current spatial configuration of cities in Pakistan is largely influenced by historic development patterns and political structures of the region. The strategic global location of Pakistan and the availability of resources has provided the base for the development of Punjab's economy. Prior to the birth of Pakistan, the region has been subject to the rule of four major civilizations, the Indus Valley Civilization, the Gandhara kingdom, the Indo-Islamic and Mughal empire, and the British colonies.

#### The Indus Valley Civilization

(3300–1900 BCE)

In Pakistan, the concept of planned cities and regions began with the Indus Valley Civilization (IVC) whose trade route was built along the Indus River, to modern day Afghanistan and toward South India. Much remains unclear about this civilization, however its extensive knowledge of urban planning and municipal governance is evident from its cities. The uniformity of development across its cities also suggests a central planning structure. At its peak, the civilization is said to have



around 5 million<sup>4</sup> people living in major settlements along the river.

More than a thousand small and a few large settlements are said to have been part of the civilization, with only about a hundred excavated till now. The absence of any major buildings, depictions of royalty or slavery suggest that it functioned as an egalitarian society. The later Harrapan period however shows signs of encroachment indicating lack of planning during that time<sup>5</sup>. The demise of this civilization was driven by a mass migration of settlements due to climate change, as well as by disruption in social and economic systems in the region<sup>6</sup>.

### The Mughal Era (1555–1857)

The Mughal Empire was centered around what is today known as the Walled City of Lahore. The Mughals built an extensive network of roads and irrigation networks and introduced a standardized currency<sup>7</sup>. The Grand Trunk road that services present day Punjab's economy is part of an ancient trade route that connected the Indian sub-continent with Central Asia.

This economic network helped the growth of cities and their markets for agriculture produce, further creating an impetus for trade and services. By the early 17th century, the industrial output contributed to about 64% in the primary sector, 11% in the secondary sector and about 25% in the tertiary sector<sup>8</sup>. About 18% of the population in urban areas contributed to 52% of the economy<sup>9</sup>.

By the 1700's, the total output of the Mughal empire was 24.4% of the world GDP<sup>10</sup> leading the manufacturing sector till the 1800's following which the British Empire took over. Multiple reasons have been cited for the decline of the Mughals, including rising inequality and loss of public support for the royals. Other evidence suggests that lack of industrial activity and high dependence on agriculture in the region made its products uncompetitive in a newly industrialized world.

### The British Era (1858–1947)

Much of the modern infrastructure in Pakistan can be attributed to the British colonization era when services such as irrigation networks, railroads, metalled roads, and the development of town centers helped grow cities, their urban structure and their governance systems. The East India Company added to the network of urban spaces developed by the Mughals and went to great lengths to develop what today would be called a spatial strategy; they drew divisions in land, zoned regions according to geographic and economic factors and supplemented major cities with a road and railway network. Their primary strategy was to transport goods to other cities of the subcontinent. Towns were developed along rail networks, many of them approximately 50 km apart; locations were dependent on transportation mediums as well as on availability of resources.

By the early 1900's, the share of India in the global economy had declined to 7.2%<sup>11</sup>. This was both a result of the industrial revolution taking place in the West, and the of scale of resource extraction taking place within the Subcontinent. There was an overt focus on agricultural commodities and landlords favored the cash crop system due to which the population eventually outstripped the food and land availability. This led to recurring famines, causing deaths in the millions. One of these famines (1899–1900) coincided with the eventual disruption of the economy of the British in the subcontinent.

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<sup>4</sup> McIntosh, Jane (2008), *The Ancient Indus Valley: New Perspectives*, ABC-CLIO, p. 387, ISBN 978-1-57607-907-2

<sup>5</sup> McIntosh, J. (2008). *The ancient Indus Valley: new perspectives*. Abc-Clío. Pp.232

<sup>6</sup> Kathayat, G., Cheng, H., Sinha, A., Yi, L., Li, X., Zhang, H., ... & Edwards, R. L. (2017). The Indian monsoon variability and civilization changes in the Indian subcontinent. *Science advances*, 3(12), e1701296.

<sup>7</sup> John F. Richards, *The Mughal Empire* (1996), pp 185–204

<sup>8</sup> Kaveh Yazdani (2017), *India, Modernity and the Great Divergence: Mysore and Gujarat (17th to 19th C.)*, Brill Publishers

<sup>9</sup> Angus Maddison (1971). *Class Structure and Economic Growth: India and Pakistan Since the Moghuls*. Taylor & Francis. p. 33.

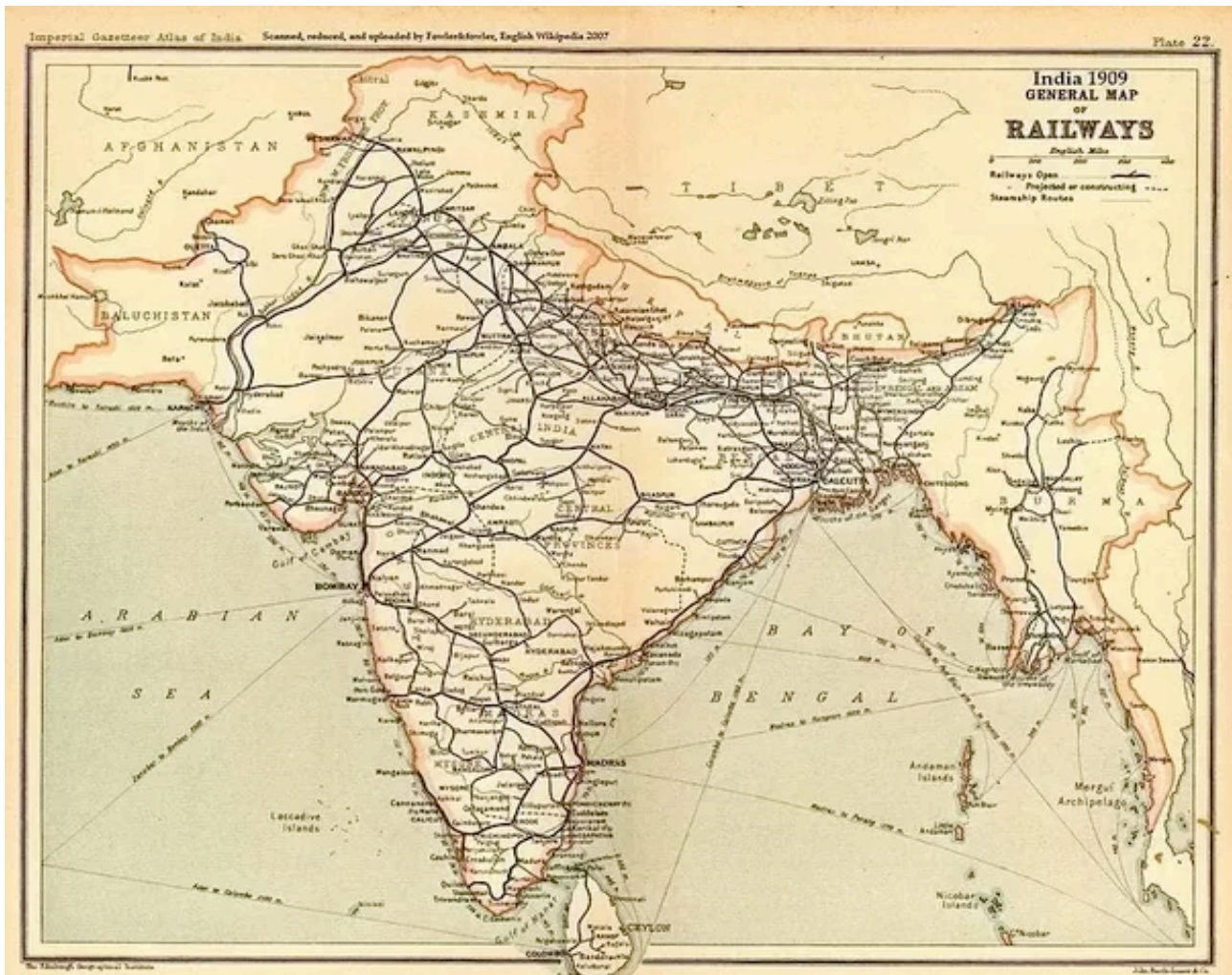
<sup>10</sup> Maddison, Angus (2003): *Development Centre Studies The World Economy Historical Statistics: Historical Statistics*, OECD Publishing, ISBN 9264104143, page 261

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<sup>11</sup> Maddison, Angus (2003): *Development Centre Studies The World Economy Historical Statistics: Historical Statistics*, OECD Publishing, ISBN 9264104143, page 261



**Map 3.04** A general map of Indian Railways, 1909



**Source:** Imperial Gazetteer of India, 1909 (John Bartholomew and Company/Edinburgh Geographical Institute)

#### Key lessons from history

**Globalization, Industrialization & Manufacturing is going to be the most important future base of the economy:** The industrial sector provides a substantial base for the economy and provides opportunities for both the rural and the services sector. Although Pakistan's industries have lagged in technology, history of the subcontinent suggests that investment in infrastructure to support local manufacturing has the potential to generate local economic development in the region. An example of this is that of the Mughal economy being superseded by the British Industrial revolution as a result of industrialization, both on a large scale and through intangible initiatives such as research and development.

#### The Connectivity Structure should focus on local needs and long term strategic requirements:

The British era development remains specifically relevant to Punjab since it emerged during the industrial revolution and was dependent on motorized transport. The subsequent partitioning of India left Pakistan with infrastructure that facilitated only north south connections with little or no lateral connectivity. There have been efforts to improve infrastructure within cities, however, it remains limited to large cities. This infrastructure is also concentrated on the movement of vehicles, rather than that of people. Mobility infrastructure, including facilitation for non-motorized vehicles, needs to be prioritized in the cities of Punjab. Additionally, infrastructure for efficient freight movement as well as depots<sup>12</sup> for freight vehicles need to be strategically designed within and between cities and villages.

<sup>12</sup> Known as *adda* in Urdu





**Climate Change is not a new Phenomenon:** A recurring feature of the subcontinent is its susceptibility to climate change. This has been documented during the Indus Valley Civilization and the British era, where large scale famines wiped out populations led to the eventual demise of the empires. In light of this, provisions should be made for food security and not just economic growth, where the latter may overlook the impact of food affordability on the nutrition and diet of people.

### 3.3 URBANIZATION & CITIES' ROLE IN DEVELOPMENT

Cities have always existed as global entities. From ancient settlements to modern aerotropolises, the interconnectivity of cities has led to the emergence of a hierarchy that allows competitive regions to dominate the global economic landscape. These cities are also seen as major nodes for economic cooperation between countries and gateways for local economies to access global markets. In this sense, most Global Cities also end up influencing foreign policy of a nation by becoming their ambassadors and interlocutors.

At the local level, Global Cities have a vital role in leading development by providing a platform for innovation and soft resources for lower tier cities. These cities have a sphere of influence which manifests itself in the development of neighboring regions. Primary cities are also a place where global and local businesses can compete and collaborate, cultivating an advanced business culture and enabling access to finance. While the emphasis of these primary cities is on services and the knowledge economy, the surrounding intermediate cities offer a base for more efficient manufacturing with lower land, housing, and labor costs.<sup>13</sup>

Similar to how the manufacturing sector benefits from increased efficiency of the rural economy and raw material inputs, primary cities thrive on the development of human resources and concentrate skilled labor and industry experts in a central location. These in turn provide opportunities for innovation and business growth that have may encourage spillover effects on surrounding settlements. In this sense, the spatial location of primary cities as a collector of human resource is crucial for distributed development. Specifically, in the case of Punjab, where the spread of agriculture covers most of its land area, the spatial distribution of top tier cities can bring many new opportunities for efficient long-term development.

#### Box 3.05

##### CHARACTERISTICS OF A GLOBAL CITY

- A variety of international services, notably in finance, insurance, real estate, banking, accountancy, and marketing.
- Headquarters of several multinational corporations
- The existence of financial headquarters, a stock exchange, and major financial institutions.
- Major manufacturing centers with port and container facilities.
- Considerable decision-making power daily at a regional and global level.
- Centers of new ideas and innovation in business, economics, culture, and politics.
- Centers of media and communications for global networks.
- Dominance of the national region with great international significance.
- High percentage of residents employed in the services sector and information sector.
- High-quality educational institutions, including renowned universities, international student attendance, and research facilities.
- Multi-functional infrastructure offering some of the best legal, medical, and entertainment facilities in the country and region.
- Diverse in terms of language, culture, religion, and ideologies.

**Source:** Hobbs, J. J. (2016). *Fundamentals of world regional geography*. Cengage Learning

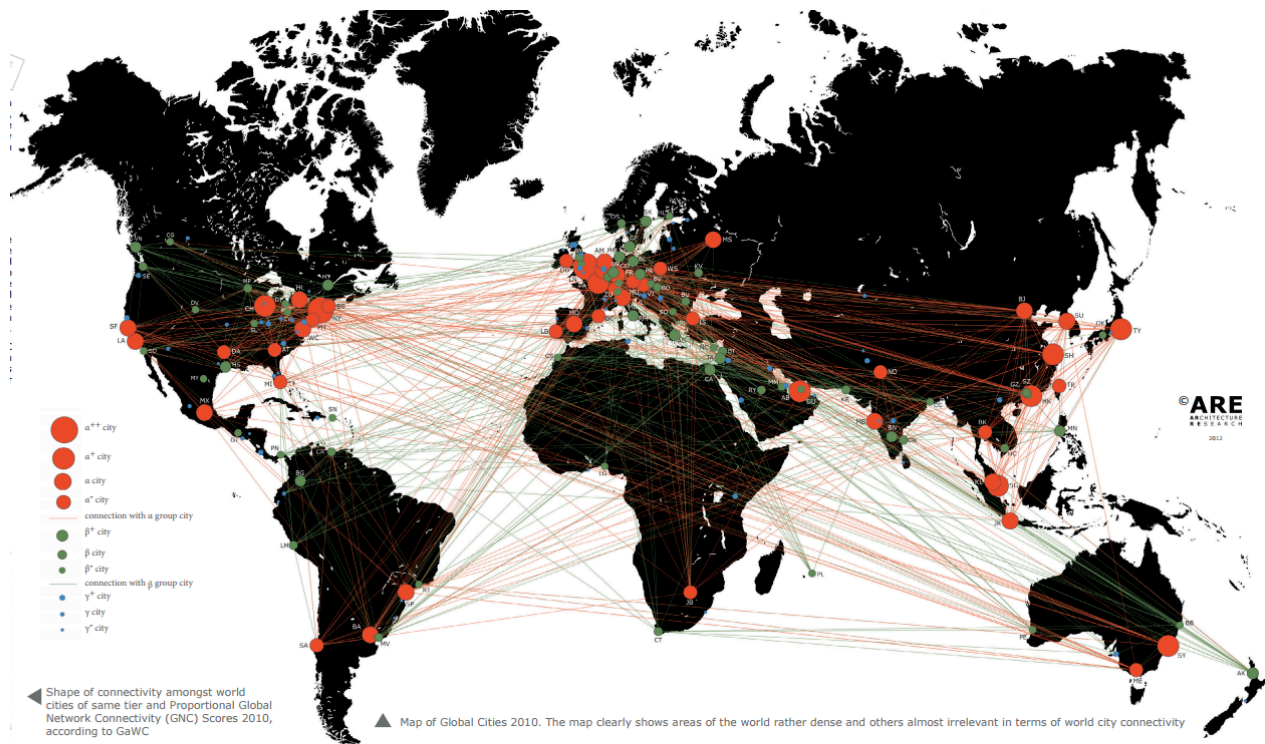
Lahore, the capital city of Punjab, has been the center of development in the region with the city recently crossing the 11 million population mark. Being the seat of governance and the only global city of Punjab pulling in international economic and financial resources, it has managed to develop significantly with a large population base and the best of human resources. However, its influence in attracting multinational and private investments has been at the expense of other cities and regions which lie further away. This has created systemic regional imbalances which cannot be sustained in the long run. Areas of lower development will continue to face losses in good human resource and the more developed regions increasing put under pressure to provide for increased migrations.

<sup>13</sup> Un-Habitat. (2012). *State of the World's Cities 2008/9: Harmonious Cities*. Routledge. pp33





Figure 3.06: 2010 GaWC Map of Global Cities



**SOURCE:** Globalization and World Cities Research Network (GaWC) Website

Thus, the focus for the urbanization strategy for Punjab will be on designating new gateway cities that will be able to lead development in their respective regions in conjunction with the capital city of Lahore.

### 3.3.1 Punjab's global cities and opportunities in the obor

The GaWC map for global cities prepared in 2010 (above) shows a concentration of Global Cities in Europe North America and East Asia. According to an Asian Development Bank Publication<sup>14</sup>; *Asia 2050: Realizing the Asian Century*, many of the new emerging Global Cities are now concentrated in Asia with higher economic growth prospects owing to demographic and economic trends;

*"An estimated 3 billion Asians could enjoy living standards similar to those in Europe today, and could account for over half of global output by the middle of the 21st century."*

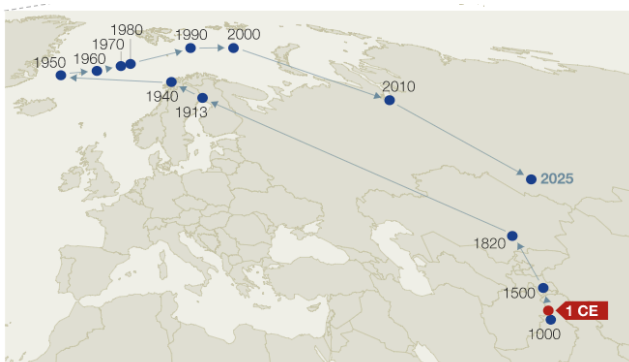
Labeled as the Asian century, the shift from the American and Imperial British eras is now manifesting itself with new global cities centered on Asia. The

Chinese led One Belt One Road (OBOR) Project, with a focus on regional connectivity through new land and sea routes, will link the Asian continent with Europe and Africa. The increased economic activity in Asia will encourage the formation of new of global cities and international connectivity, eventually providing an opportunity for new Pakistani Global Cities to emerge.

<sup>14</sup> Kohli, H. S., Sharma, A., & Sood, A. (Eds.). (2011). *Asia 2050: realizing the Asian century*. SAGE Publications India.



**Figure 3.07: Evolution of the earth's economic center of gravity from 1 ce to 2025**



Source: McKinsey Global Institute Analysis

### 3.3.2 National context

Within the national spatial context, the Punjab provincial region is rich in agriculture. Despite its climate, its extensive irrigation networks laid by the British are amongst the largest in the world and contribute to almost three fourth of the agricultural output of the country. To the south lies Sindh, to the north west Khyber Pakhtunkhwa (KPK), and to the west Baluchistan.

The railway network facilitates north-south connections where the port city of Karachi serves as a node for transporting agricultural commodities out of the country. This has meant that Punjab has historically benefitted from this connectivity to the south but its connection to the western region is poor. Since the British planned the network for transporting agriculture commodities, they did not prioritize east to west to connectivity.

However, with the induction of CPEC, there is potential for increased connectivity to and within the western region of the country. Still, adequate policy measures need to be taken to ensure the connectivity benefits the local population, limits exploitation of natural resources and leads to development on both fronts, economic and social.

Provided the China Pakistan Economic Corridor is fruitful, it presents to Punjab the opportunity to develop its own western districts as well and subsequently reduce intra provincial disparities.

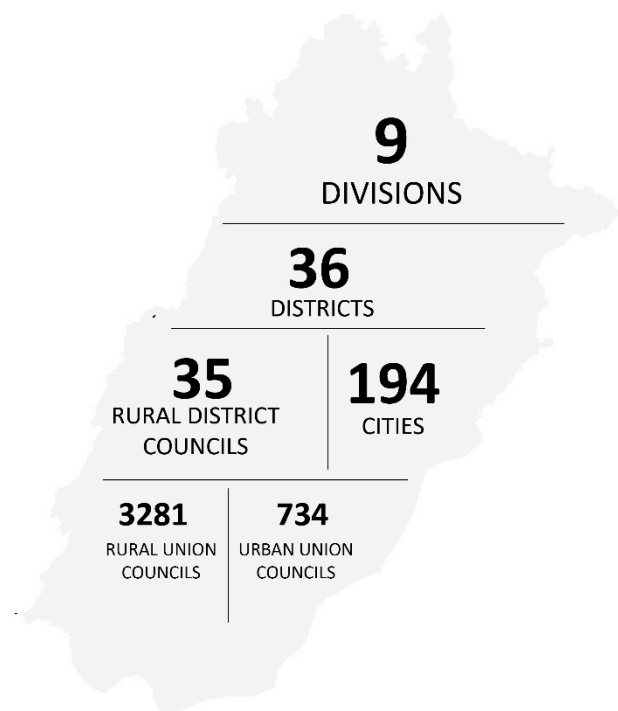
### 3.3.3 Regional context

The problems of a developing region like Punjab are well known; from high population growth to rapid urbanization; from housing shortages to unreliable service provision; from low municipal recoveries to deteriorating cities; from increasingly unsafe cities to a rapidly declining environmental conditions; and to a

society fragmented between people, government and the 'private' sector. The list can go on. However, this backlog in development and the pressures of accelerating urbanization are also an opportunity for reformed development.

With a population of an estimated 110 million and approximately 200,000 square kilometers of land, Punjab offers a huge canvas on which to plan its urban areas. What it lacks, however, is a comprehensive spatial planning mechanism. The 'province' in Punjab's case is too large a boundary to plan for, due to which it is further subdivided into 9 divisions, and 36 districts.

**Figure 3.08: Administrative breakup of Punjab**



The administrative jurisdictions of divisions, districts and tehsils serve as the baseline for public spending from various tiers of government. However, their spatial and socio-economic context must be made compatible with the demands of urban and regional planning. Any proposed plan will have to keep in consideration existing administrative structures so that adoption of the plan requires minimal changes to existing processes on which current planning and systems have evolved.

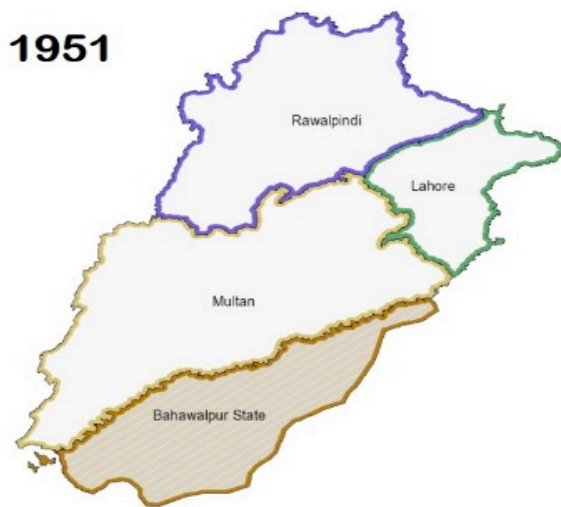


## Divisions

The British went to great lengths to administer the subcontinent and generally divided the 'Pakistan' side of Punjab into three divisions.

The divisional boundaries were larger and consisted of one main city, which served as the divisional headquarter. The cities of Lahore, Rawalpindi and Multan acted as primary urban nodes. They formed a symbiotic relationship with smaller surrounding cities that lay within 100km. In this case the urban hierarchy remained aligned with the administrative hierarchy.

Figure 3.09 Punjab divisions 1951



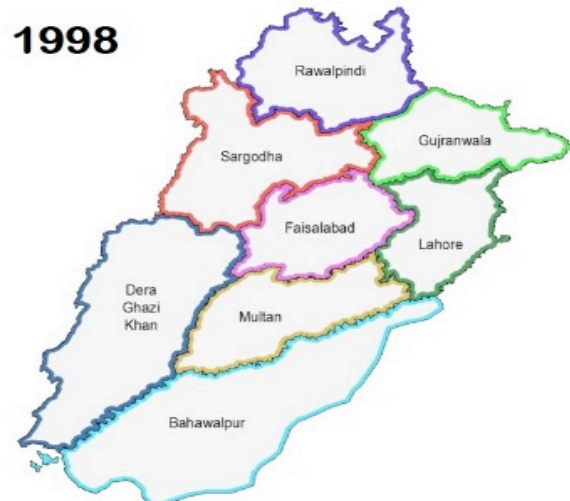
However, post partition with the subsequent addition of more divisions, the urban hierarchy fractured, creating misalignment between the administrative and urban boundaries.

Figure 3.10 Punjab divisions 1961



In the mid-90s, with an increase in population, Faisalabad and Gujranwala emerged as major cities and acquired the status of divisional headquarters. The primary issue with the creation of additional divisions is that their formation is hinged largely on population numbers and has little to do with local trends in trade, migration patterns, social disparities, and other essential characteristics of a city.

Figure 3.11: Punjab cities 1998



The assumption is that cities with a higher population need greater autonomy and greater attention. The reverse however is true as well, such as in the case of Lahore, where greater autonomy and a higher rate of development has had the adverse effect of increasing in migration. This simplistic approach further contributes to intra provincial disparities.



The size of settlements in Punjab is associated with the decision-making hierarchy where all larger cities correspond to divisional headquarters; Intermediate and smaller cities mostly at district headquarters; and towns at the tehsil headquarters. This direct correlation of administrative hierarchy of a city and its influence is an important factor in determining the long-term potential of cities.

**FIGURE 3.12 PUNJAB DIVISIONS 2018**



The urban sector can benefit from the alignment between city population classifications and the administrative system. Higher up the city is in the hierarchy, the more decision-making power it has and fewer tiers of bureaucracy to go through. This generally translates into more dynamic economies as we move up the administrative hierarchy.

Under the Local Government Act of 2013, the main administrative boundaries are defined by the *province* at the top, followed by *districts* and then *union councils*. However, the administrative functions of government have not made the complete shift over to the local government system and the divisional and tehsil tiers still exist. This however does not mean that the current divisional structure needs to be abolished. In fact, the 'Division' can provide a good boundary for declaring city regions and ensure coordination between districts for achieving larger development goals.

### 3.3.4 Districts and cities

Districts are divided into urban and rural as per a notification in the official gazette<sup>15</sup>. Any integrated urban area with a population between 30,000 and 500,000 is declared a municipal committee, where those

with populations above 500,000 thousand are notified as a municipal corporation.

As per the current legal framework, there are 194 notified urban areas in Punjab. These consist of 1 Metropolitan corporation at the provincial capital of Lahore, 11 municipal corporations, and 182 municipal committees. In addition to this, all major cities are also home to administrative headquarters i.e. provincial, divisional and district headquarters.

Until 1981, all areas with a population of 5,000 or more and all areas declared municipal and town committees were urban. There also existed the provision to include any other area that exhibited urban characteristics. Since 1981, urban areas have been defined by administrative criterion, i.e. only the people residing in metropolitan and municipal corporations, municipal committees and cantonments are urbanized. All the 'residual' are rural populations.

### 3.3.4 The peri urban of punjab

Urbanization is a process that shapes regions over time, directed by multiple actors, and under the influence of multiple forces. Before urbanization, the area is 'rural' in nature, and at a certain junction in the process of urbanization, it may be classified as 'urban'. However, during the transition period, it is neither here nor there, neither completely rural, nor completely urban. In theory, these regions are classified as 'peri urban'.

*"PERI-URBAN AREA: An area that spans the landscape between contiguous urban development and rural countryside with low population density and is predominantly being used for agricultural activity and is likely to be urbanized in the next twenty years."*

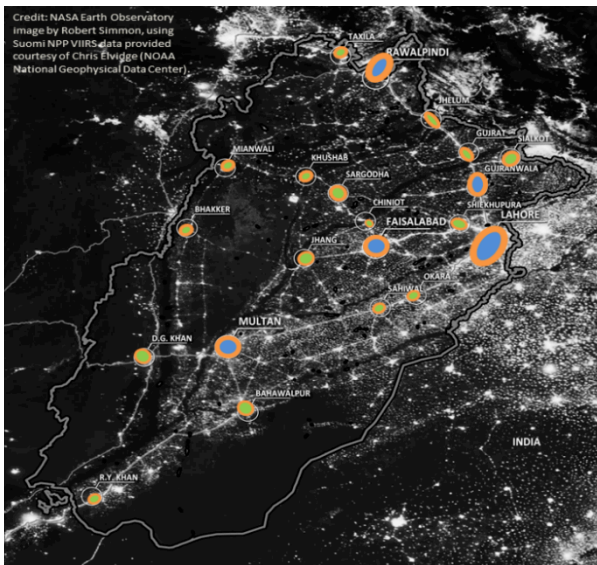
*(Punjab Land-use rules, 2009)*

<sup>15</sup> Punjab Local Government Act 2013





**Figure 3.13: Peri urban areas in Punjab**



Looking at the nightlight imagery of Punjab, we see major settlement nodes connected by an almost unbroken chain of developments. These peri-urban settlement activities started during the 60's where many large industries found it opportune to locate themselves alongside highways<sup>16</sup>. This led to widespread settlement activity and the development of smaller supply chains linked with local industry and local consumption patterns.

Peri-urban areas essentially have pockets of near-urban densities and industry-based employment; but the settlement structure does not fit the description of a town or city. In towns or cities, the municipal offices essentially act as a center point for development and social structuring, whereas the peri-urban is a cluster of industry and housing with little or no social infrastructure including basic facilities. This sets apart the peri-urban issue as an *administrative capacity issue* where usually district authorities are faced with scattered urban problems in rural jurisdictions.

Taking this as an administrative issue, peri-urbanization may be described in mainly three contexts; (1) where they occur inside municipal jurisdictions, (2) where they occur just outside city limits and, (3) where they occur in rural jurisdictions.

The first may be described as inadequacy of governance, but is also an expected outcome of city boundary

expansion. As cities start to sprawl, they start encompassing and changing rural structures and lose density. These low density areas make the provision of basic services expensive or unfeasible in the case of lower income groups while the relatively well-off may be able to pay for the extension.

The second, where peri-urbanization occurs just outside municipal boundaries, peri-urban structure plans are expected to manage some of this growth. Peri-urban Structure Plans are prepared as per prescribed procedure in the Punjab Land Use Rules 2009 and comes under the responsibility of a City District Government or a Tehsil Municipal Administration. Currently, all major primary and intermediate cities are required to develop peri-urban structure plans under the PCGIP and PIICIP projects.

With the notification of peri-urban structure plans, the first two contexts are covered at least in terms of administration and will require a long term (20-year) strategy for city growth. Through the legislation and rules put in place, Punjab shows awareness and commitment on part of the authorities to address the problems associated with the peri-urbanization, however, much of the peri-urban development remains outside city limits, particularly along major highways and even linked to smaller settlements.

Although peri-urban areas are being demarcated for Punjab's major cities, the effects of peri-urbanization largely occur outside this boundary along major connectors. The map shows a conceptual description of the current state of peri-urbanization with main city limits surrounded by peri-urban boundaries in orange.

### 3.3.5 Peri urbanization and development

Current development perspective in Punjab is largely urban-centric with urban areas acting as the center of development. Rural areas remain an outlying planning area where departments such as the Punjab Rural Support Program (PRSP) support the capacity of the administrative system under the Local Government & Community Development (LG&CD) Department; and the Public Health Engineering Department (PHED) supports the Housing & Urban Development Department for service provision, with the limited scope of water and sanitation provision, in areas not covered by city jurisdictions.

While the urban jurisdictions have definitive boundaries, the rural does not and it requires a regional approach to managing these areas. The use of new technologies is increasingly becoming viable and geographic information systems can help monitor and develop both the rural sector and manage the processes of peri-urbanization.

<sup>16</sup> Kadir, M., Schmidt, E., & Wagas, A. (2016). *Pakistan's changing demography: Urbanization and peri-urban transformation over time* (Vol. 39). Intl Food Policy Res Inst.



Despite the comprehensive laws and regulations regarding peri-urbanization, there remains large gap in coverage of peri-urban areas. According to the definition, peri-urbanization appears to be a city specific phenomenon and a problem best addressed by the city. The current definitions in law and the practical implementation of peri-urban plans in Punjab follow this line of thinking by demarcating a boundary *around* the city for the next twenty years.

Academic Usage of the term however shows a consensus that Peri-urbanization is more of a process without boundaries, rather than a defined area of development where; “Multiple processes such as in and out migration, relocation of industries and recreational uses to the peripheries and generation of economic activity from growing settlement activity, are part of the impacts of urbanization which find suitable economic environments outside Municipal authority’s jurisdictions”.<sup>17</sup>

By and large it can be seen that the current definition becomes inadequate for developing mechanisms to manage peri-urbanization because we may miss the bigger picture by looking at the phenomena from the limited vantage of the city. An alternate view is to look at it from the perspective of the rural;

*“Peri-urbanization is the process by which rural land in proximity to urban centers is converted to semi-urban concentrations which establish themselves outside city jurisdictions and along highways by finding more competitive economic advantage with regard to land, labor, connectivity and laws.”*

*(PSS definition)*

### 3.3.6 The urban hierarchy

Urban hierarchies form when cities are ranked against one another based on the variety and specialization of goods and services provided by them. This ranking is usually done on a national level, where larger cities tend to have better economic services and a more advanced administrative structure. At present, there is no global criteria by which hierarchies are defined and each region ranks cities according to the local context.

Cities around the world, however, are classified as developed or developing where developed signifies that the city has reached a certain level of economic development and diversification which enables it to sustain itself while providing a market for surrounding

cities. From within these developed cities emerge two distinct types of cities; one which is powerful administratively and internationally connected (Mega and Large cities) with a relatively high population, and the other a more locally oriented but significant city (Intermediate). These form the main urban network.

Under developing settlements there are towns which may or may not significantly diversify or attract a large population. These are also usually lower down in the administrative hierarchy; the Tehsil Headquarter, in the case of Punjab. These settlements are usually termed as towns and have low value addition potential but form important economic and social links with the Rural economy.

### Mega and large cities

Mega and large cities generally act as the seat for cultural, economic, educational, political, and major transportation needs of lower tier cities in the region. They have the ability to produce, attract and retain the best talent which allows them to lead in technical innovation with highly diversified, high value-addition, manufacturing, service & knowledge industries. International linkages allow for a more metropolitan and globalized economic outlook for the city and it acts as a gateway to international markets for the wider region.

### Intermediate cities

Intermediate cities offer higher tier services and a market for surrounding towns and villages. Its economy can build on a wide array of resources and has access to major regional transport networks & supply chains that allow it to have a more diversified economy. Intermediate cities generally feed into Primary cities and rely on them for international connectivity & resources. Although with more local character, they can produce and retain skilled workers and professionals which allows it to have good value-addition processes and manufacturing along with lower costs of doing business. These cities are also more locally oriented and can preserve their local traits and culture.

### Small cities

Small cities and towns have a distinct local characteristic and usually specialize in certain industries which are rooted in local area resources and local supply chains that may run through the town. They act as service points and markets for surrounding villages. Industry may include storage, raw material processing, minor

<sup>17</sup> Iaquina, D. L., & Drescher, A. W. (2000, August). Defining peri urban: understanding rural-urban linkages and their connection to institutional contexts. In *Tenth World Congress of the International Rural Sociology Association* (Vol. 1, pp. 3-28).



value-addition and trade services. Towns are also the smallest urban concentration with a municipal setup and serve as administrative and service centers for rural areas. They also have a strong potential for developing the rural economy and facilitating rural-urban migration by imparting need-based education and skills.

### Towns

Villages are at the tail end of the economic hierarchy but are also access points to local resources which form the basis for many value-addition and service industries. The village economy is often looked at in the perspective of agriculture; however, the real potential for wealth creation lies at this base which is involved in local resource extraction and utilization and encompasses diverse economic activities such as livestock, horticulture, mining and energy, tourism and even industry.

### The main urban network

The mega, large, and intermediate city categories form the main *established* urban network and boast more diversified economies and high GDP per capita. This will include all cities that host Divisional and district headquarters. The next categories of “small cities” are those settlements which are still developing and have not been able to diversify. These mega, large, and intermediate cities ensure coverage of the entire province and are expected to lead in providing opportunities for development of their regions. Because of their importance, these cities are well connected with the main national or provincial highway network.

### Small cities & town network

Small cities and towns are at the end of the urban hierarchy and are vital for connecting the rural economy with the urban network. The Rural Network comprises of towns and its surrounding villages and feed into the mega, large, and Intermediate cities. By nature of their connections, towns also become the service center for rural areas and are positioned to facilitate rural to urban migration. As such towns are an important node for overall social mobility and human development.

### 3.3.7 Classifying cities

While numbers may be indicative of the economic potential of a city, it offers no indication of the spatial and economic linkages that exist between cities. Classifying cities can be a difficult task as they are not only constantly evolving but also growing beyond our most current number classifications. We might as well say every decade that, “cities have never been this big before!” the classification would have to be revised even though the spatial location and the economic hierarchy

remains the same. It would be safe to say that the population figures alone cannot help in deciphering the Pakistani city hierarchy. Rather a combination of population, history, spatial reference and socio-economic mix would be needed to arrive at a progressive city hierarchy system.

When Punjab’s cities are ranked according to population, some classes of cities emerge with Lahore just crossing the 10 million mark, while the next 4 cities fall within the 1 million to 5 million range. The next clear range separates itself from 250 Thousand to 1 Million. However, the settlements below this range show no distinct classes for small cities and towns but have been tentatively divided into ranges above and below 100,000 respectively.

**Table 3.14: Population-based classifications 2017**

POPULATION RANGE	NO. OF CITIES	CLASSIFICATION	% POPULATION	EXAMPLE CITIES
10 M +	1	Mega City	28%	Lahore
1M – 10 M	4	Large City	24%	Rawalpindi, Gujranwala, Faisalabad, Multan
250K-1M	13	Intermediate City	15%	Sahiwal, Bahawalpur, Sargodha, DG Khan, etc.
100K-250K	38	Small City	7%	Attock, Bahawalnagar, Chishtian, Haroonabad etc.
<100K	138	Towns	18%	Liaquatpur, Depalpur, Talagang, Murree, etc.

Source: Urban Unit Analysis

This methodology for classification can be useful for looking at individual cities and developing localized strategies, but cities do not exist in isolation and a more systematic classification system would be needed which could encompass a *connected network* of cities. In line with the System of Cities thinking, cities will be primarily defined according to their spatial location. In order to understand these systems, it would be worthwhile to look at some of the classifications that are being used internationally.

### Classifications & Nomenclature

In the preceding classification examples, there is either a three or four tier classification for settlements; and the nomenclature follows from the way the cities are classified, e.g. use of ‘small’, ‘medium’ and ‘large’ for



population-based classifications. In Punjab's case, despite there being no official city classification, the terms; Mega, Large, Intermediate, Small Cities and towns has been in use to describe urban settlements. "Intermediate cities" is being used officially for projects in Punjab and is recognized internationally as a distinct class of city with specific functions in the urban hierarchy; and was therefore retained as a base for naming the classifications.

next section to define subtypes which can tie in with the System of Cities model being developed for city clusters. The proposed classification system follows in the section for City Cluster development.



### **Mega Cities**

Principal administrative cities which are the hubs for international and regional trade with a relatively strong services sector.



### **Large Cities**

Large cities act as main hubs for local trade. They have a relatively stronger manufacturing industry, due to their proximity to the mega city. to fulfill the



### **Intermediate Cities**

Intermediate cities act as hubs for local trade. Due to their proximity to large cities,



### **Small cities**

Settlements which act as hubs for local trade and support the rural sector and supply to larger cities



### **Towns**

Settlements which primarily focus on farming or local resource extraction/utilization

**Figure 3.15: Spatial classifications**

Source: Urban Unit Analysis

Populations have been taken as a secondary attribute for these classifications as the ranges for each category are expected to vary across regions, i.e. an intermediate city near Lahore may have a larger population than one in the south.

These initial classifications can provide an overall view of the urban hierarchy; however, these are very broad in nature and a more detailed analysis is presented in the





## DEFINING CITY ATTRIBUTES

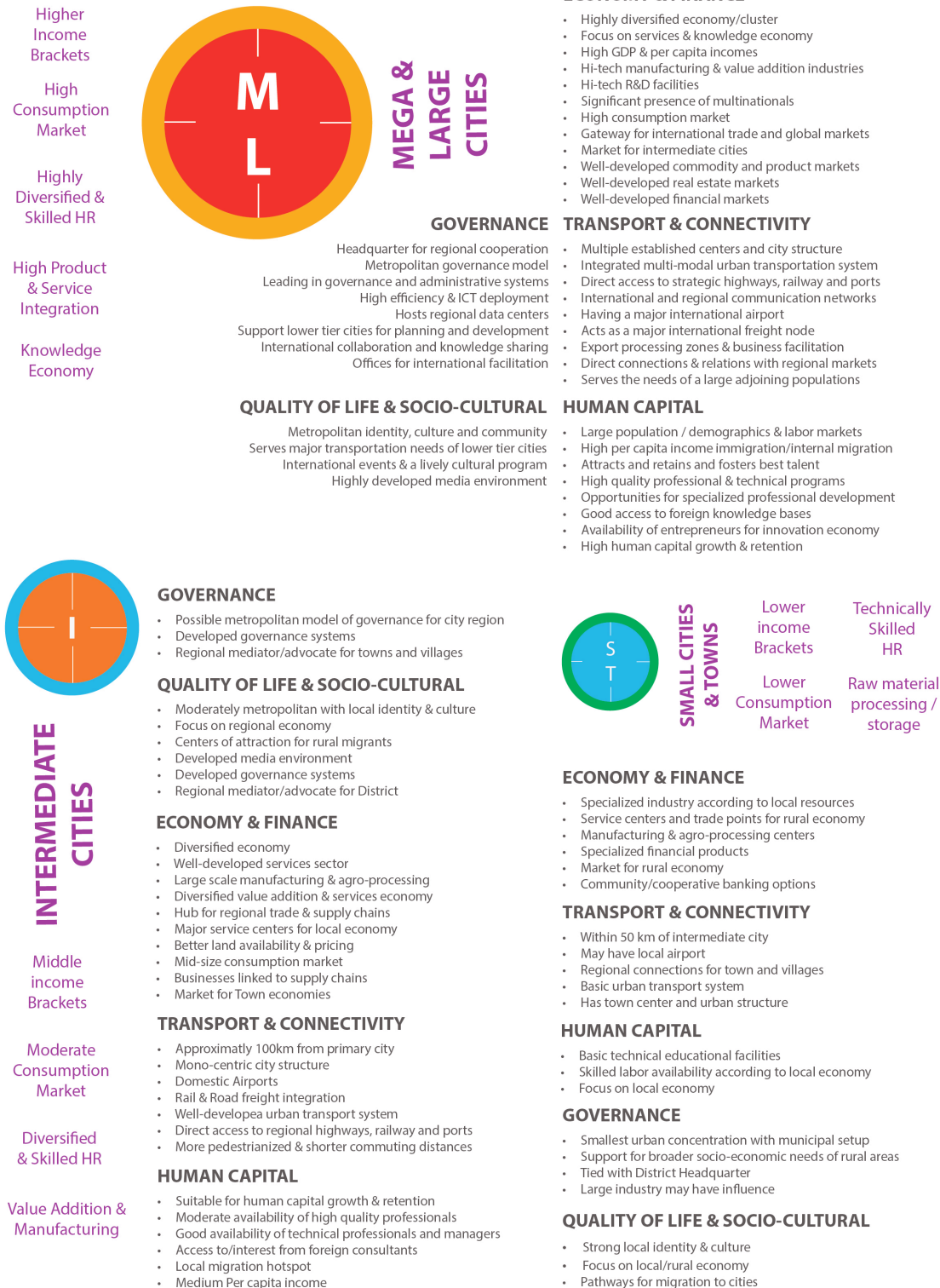


Figure 3.16: Defining city attributes source: urban unit

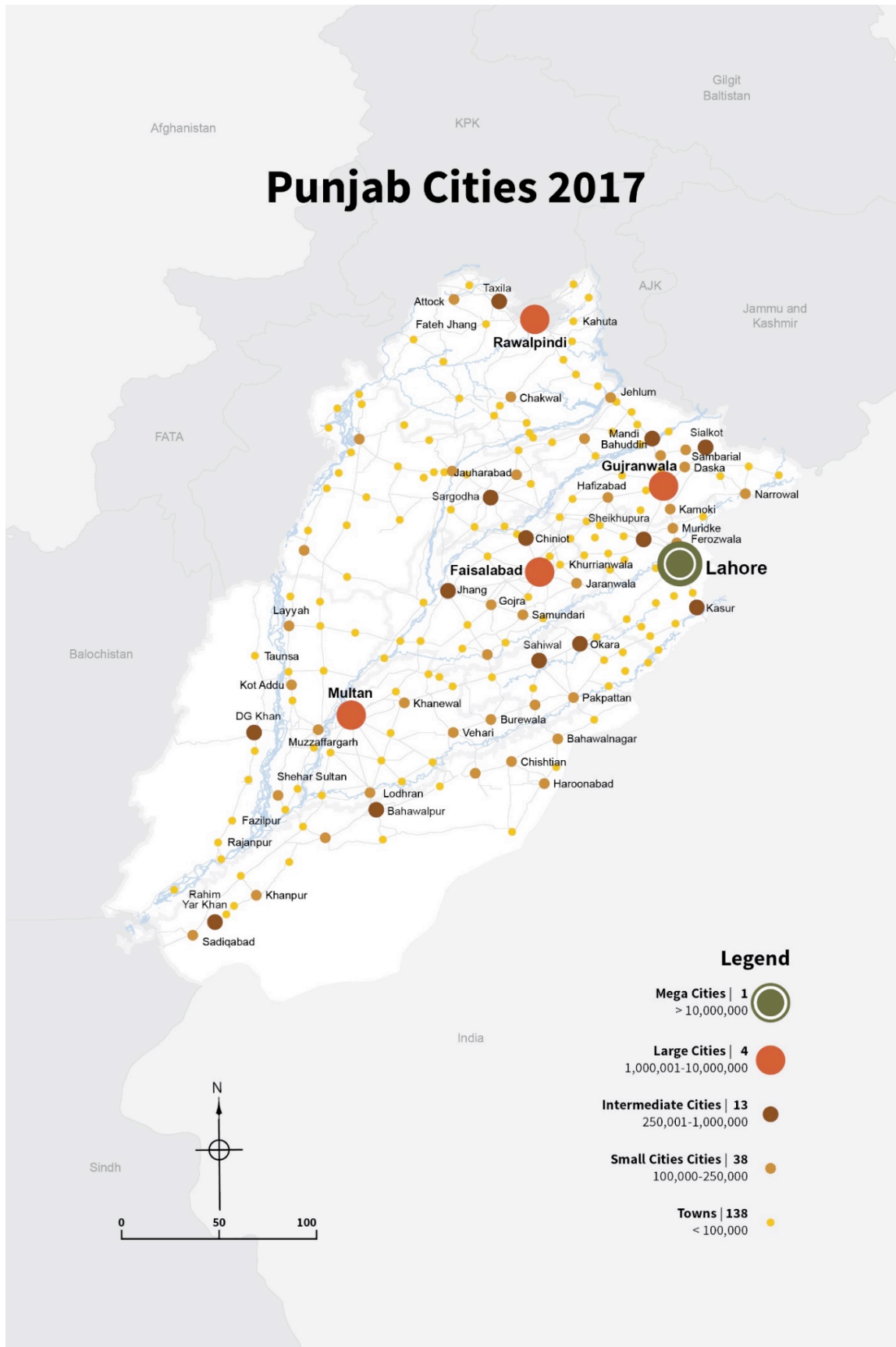


Figure 3.17 Punjab cities 2017

Source: Urban unit



### Administrative system & classifications

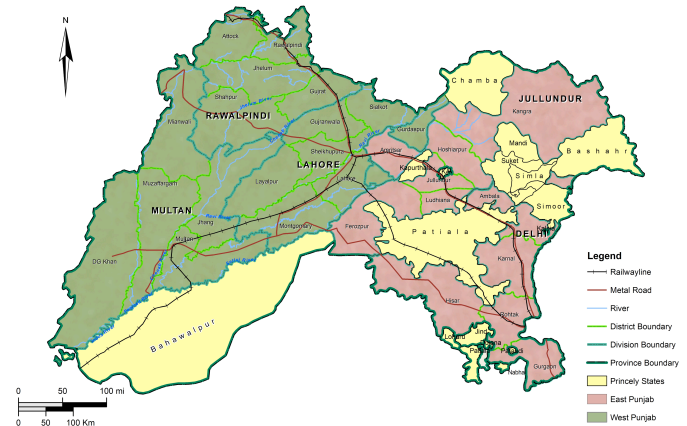
The size of settlements shows a strong correlation with the decision-making hierarchy where all larger cities correspond to divisional headquarters; Intermediate and smaller cities mostly at district headquarters; and small cities at the tehsil headquarters. This direct correlation of administrative hierarchy of a city and its influence is an important factor in determining the long-term potential of cities.

Higher up the city is in the hierarchy, the more decision-making power it has and fewer tiers of bureaucracy to go through. This generally translates into more dynamic economies as we move up the administrative hierarchy. The district level is of interest as it is suitably placed in the hierarchy for local planning and the development of cities.

Currently, there is a mismatch between the city classifications with respect to the urban hierarchy and administrative hierarchy. The British went to great lengths to administer the subcontinent and generally divided the 'Pakistan' side of Punjab into three divisions. Additionally, the princely state of Bahawalpur served as a separate administrative unit.

When the British planned their presence in the subcontinent, the divisional boundaries were larger and had one city main city which served as the divisional headquarter. The cities of Lahore, Rawalpindi and Multan were the primary nodes for these areas followed by second tier cities at approximately 100 km. These nodes were connected via the railway network and roads; the main network of that era. In this case the urban hierarchy was aligned with the administrative hierarchy.

Post partition, this urban hierarchy still exists, but the subsequent addition of more divisions fractured this structure by misaligning the administrative hierarchy with the urban. Faisalabad and Gujranwala also emerged as major cities during this time and acquired the status of divisional headquarters while other divisional headquarters remained as intermediates to the main cities. Currently, the province is delineated into nine administrative divisions. This however is at the expense of the urban hierarchy.



**Map 3.18: national boundary under partition plan of June 3<sup>rd</sup>, 1947**

The urban sector can benefit from the alignment between city classifications and the administrative system. This however does not mean that the current divisional structure needs to be abolished. In fact, the 'Division' can provide a good boundary for declaring city regions in the future. Instead, an additional tier of *Regional Headquarters* needs to be put in place to realign the administrative system with the urban hierarchy.

### 3.3.8 Urbanization trends

Pakistan has one of the fastest urbanization rates in Asia at 3%. The United Nations Population Division estimates that by 2030, nearly half the country's population will live in cities. It is also very likely that these figures are underestimated as they do not take into consideration migrations which may be triggered by climate change, reduced carrying capacity of rural areas or; are spurred through policies and economic development which can significantly increase migration rates.

Punjab is the most populous province of Pakistan housing approximately 56% of the country's total population. It is also Pakistan's second largest province in size at 205,344 km<sup>2</sup>. The population of Punjab increased from 20 million in 1951, to 73 million in 1998 and reached 110 million in 2017<sup>18</sup>. The population growth rate in 1998 was 2.64% which has decreased to the level of 2.13% in 2017. If the current growth rate continues, Punjab's population will double in 32 years. Although rural population is projected to increase, its growth rate will decrease.

<sup>18</sup> 2017 Population and Housing Census Pakistan



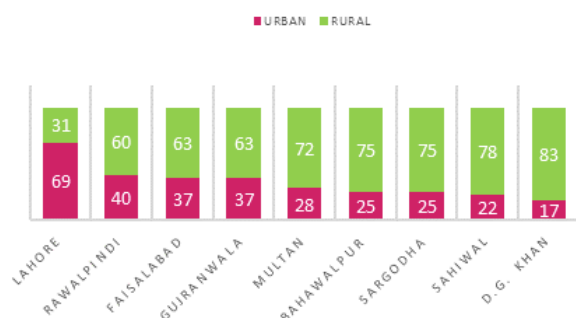
**Table 3.19: Population based classification projected for 2047<sup>19</sup>**

POPULATION RANGE	NO. OF CITIES	CLASSIFICATION	% POPULATION	EXAMPLE CITIES
10 M +	1	Mega Cities	29%	Lahore
1M – 10 M	12	Large Cities	32%	Gujranwala, Faisalabad, Bahawalpur D.G Khan
250K-1M	43	Intermediate Cities	21%	Chiniot, Samundari, Kamoke, Gujrat etc
100K-250K	73	Small Cities	13%	Jand, Fort Abbas, Uch Sharif etc
<100K	65	Towns	5%	Hazro, Pindi Gheb, Jandawala etc.

**Table 3.20: Population projections**

	2017	2047
<b>Total</b>	<b>110 million</b>	<b>207 million</b>
<b>Urban</b>	<b>37 million</b>	<b>92 million</b>
<b>Rural</b>	<b>73 million</b>	<b>115 million</b>

**Figure 3.21: Urban rural population in divisions**



<sup>19</sup> Additional towns may be created by 2047 that do not exist at the moment, therefore are not included in the projection

From amongst 194 cities and towns of Punjab, Mega and Large cities are expected to feel the brunt of this influx; however, with only 1 mega and 4 large cities, the pressure to accommodate a growing population would be tremendous. Considering the future planning of Punjab, cities have a crucial role to play in developing a more efficient economy and improving human capital and living standards across the province. Based on research and robust evidence, new settlements would need to be identified for playing their part in an efficient and distributed development program.

According to LFS 2014-15, around 45% of the workforce in Punjab is employed in the agricultural sector, 24% in manufacturing and 31% in the services sector. Around 63% of the population resides in areas designated as rural. With increased global to regional connectivity, new industry and trade opportunities will emerge enabling the economy to reverse this distribution to a targeted 70% urban by 2047. The urban economy will have to have the capacity to absorb an average of 2 million workers every year going up to 2047. This would only be possible through rapid industrialization and expanding the urban economy through industrial & SME development.

Another significant factor is the youth population, under the age of 24, which makes up 57% of Punjab's population<sup>20</sup>. Around 59% fall in the working age group reflecting opportunities for capitalizing on the demographic dividend. This young population will require much more than jobs to transition into a healthy productive working population. Opportunities cannot be limited to jobs and cities will have to accommodate growing social needs of its population which in turn will also create job opportunities. Pathways for urban immigration will also have to be developed so that the incoming workforce is primed for the urban economy.

With such huge numbers to contend with, development would have to be distributive so that regional resource boundaries are not strained, and a few cities not overburdened with uncontrolled urbanization. As in the case of China's developmental model, rather than people coming to 'cities', the cities will have to be taken to the people. Cities will not only have to be developed throughout the province but also must be efficient economically and socially so that the maximum GDP potential of cities is achieved.

Today Punjab comprises almost 60% of the GDP of Pakistan. With vast agriculture plains, much of its economy has its base in agricultural but has seen a rapid

<sup>20</sup> 2017 Population and Housing Census Pakistan



increase in the services sector measured in terms of contribution to GDP. The level of urbanization varies across the province with level of urbanization varying from 69% to 17% across divisions.

The regional difference in level of urbanization may be attributed to the presence of two global cities in Punjab, one being the federally administered capital city of Islamabad, which augments Rawalpindi's regional economy and; Lahore, the traditional seat of governance for the province. This fits in well with the observation that Global cities are an impetus for economic growth through its connectivity with the global market and resources. Most major industries have also chosen to locate themselves in the northern and eastern parts, creating a regional imbalance and putting stress on both the region's infrastructure, environment, social and governance systems.

Historically, these two cities have also been part of the main historic trade route, the Grand trunk Road as part of the Silk Road. Connectivity of the province is limited around this belt that connects northern Pakistan with Sindh in the south. The western part of Punjab remains largely out of the development perspective and scores low on connectivity. With the advent of CPEC related projects in KPK and Baluchistan, Punjab will have to invest in lateral connectivity that will help it connect to other provinces besides Sindh and provide for distributed and integrated development.

Lahore, the capital city of Punjab, has been the center of development in the region with the city recently crossing the 10 million population mark. Being the seat of governance and the only global city of Punjab pulling in international economic and financial resources, it has managed to develop significantly with a large population

base and the best of human resources. However, its influence in attracting multinational and private investments has been at the expense of other cities and regions which lie further away. This has created systemic regional imbalances which cannot be sustained in the long run. Areas of lower development will continue to face losses in good human resource and the more developed regions increasing put under pressure to provide for increased migrations.

Population projections for the 36-district headquarters were carried out which present the data for all Mega, Large and Intermediate cities. It is estimated that by 2047, Mega and Large cities will account for around 56 million people while town populations will decrease from 4.5 million to 4.1 million. Given this scenario, Mega and Large cities need to plan ahead to accommodate almost three times their current population over the next 30 years.



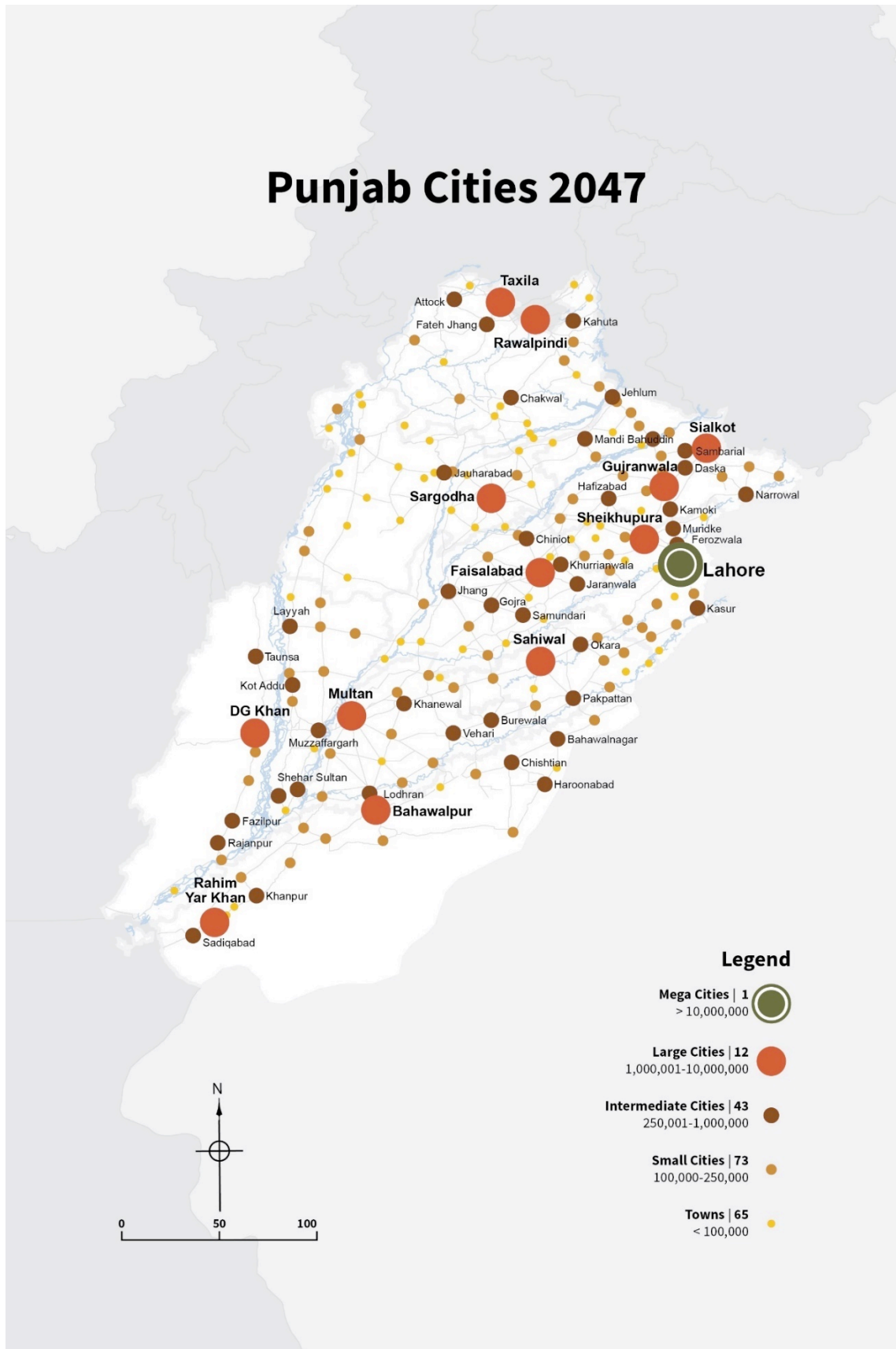


Figure 3.22 Punjab cities 2017

Source: Urban Unit



### 3.4: CITY CLUSTER DEVELOPMENT & SYSTEM OF CITIES

A city is a complex system and requires an integrated approach in order to effectively tackle many of its issues. This approach calls for a cross-sectional study of urban issues to understand the extent of their impact on the economy and the environment. In the case of public transport, for instance, a cost-benefit analysis is done to determine appropriate travel charges for the public; often these charges are high, and the state is required to subsidize the rates. However, if these calculations incorporate the role of public transport in reducing gas emissions and fuel consumption, improving public health and safety, maximizing the utility of time, and enhancing the value of land, there may be little need for subsidized rates.

This is just one example of how looking at the city as an interconnected system can help identify the gaps in our approach towards planning. As in the case of everything, it is necessary to first understand what the system of a city is, how its parts function in the presence of one another, and how they impact the cities around them. An informed approach can greatly reduce inefficiencies in planning and contribute to economic and human development in our regions.

Lack of understanding of the system of cities in the case of Punjab, however, has enabled ad-hoc planning practices in the region. Absence of data, inefficient policy implementation, lack of transparency, and a low level of citizen participation has encouraged an environment of 'quick fixes' that leads to long term damage and consequently higher debt. The Punjab Spatial Strategy attempts to frame a system for local cities, to provide a clear understanding of the hierarchies that govern our cities, as well as of the process that run them.

This chapter analyzes the patterns and historical development of human settlements in Punjab. It looks at the provincial economy as a primary machine made up of various components, each with its own position and function within the system. The intent of the following discussion is to describe, as accurately as possible, the existing scenario, its function, and the changes it will experience over three decades by the year 2047. This analysis will then contribute to the proposed spatial framework on which broad strategies for the development of Punjab will be defined.

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There is a system by which cities link to one another to function effectively. The large cities are dependent on intermediate cities for manufacturing and agriculture services, and intermediate cities are dependent on small cities for raw materials to support their industries. The intermediate cities are also in need of large cities for the import of goods and services otherwise unavailable in the intermediate city. This system does not function effectively throughout the province due to lack of a concentration of large cities to support the development of intermediate and small cities towards the south of Punjab. Lahore, for example, the capital city of Punjab, has been the center of development in the region with a population just crossing 11 million. It holds the seat of governance and is the only city of Punjab that attracts international investment of this scale. This investment, however, has driven development in Lahore at the expense of neighboring cities and towns. This creates a systemic regional imbalance which cannot be sustained in the long run.

The System of Cities model describes the interaction between different tiered cities and their functions within a larger urban network. A system of cities model helps address the primary spatial (planning) issues faced by Punjab. The current arrangement of large cities in the province suggests that there is an imbalance of resources in Punjab, which further aggravates social and economic disparities in the province. The system of cities, as shown below, will only work if all tiers of cities have adequate connectivity, human resource, capital, and infrastructure to perform out their respective functions in the larger system.

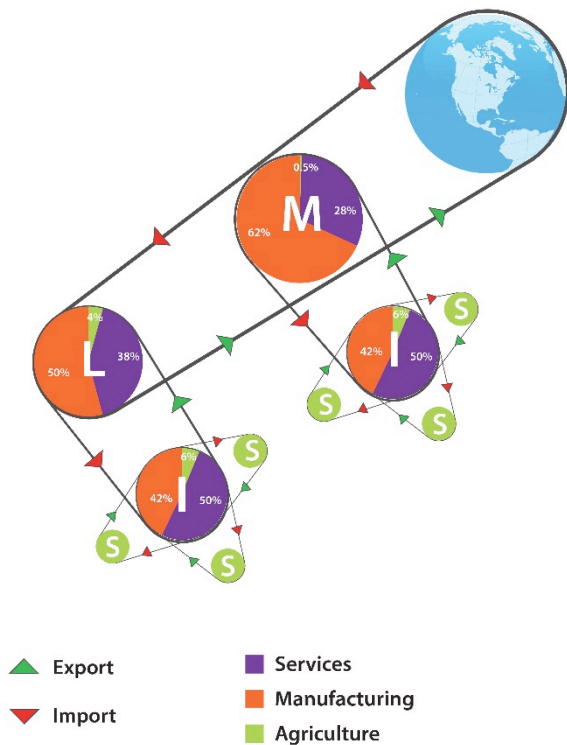


Figure 3.23 Associated economic activities

Source: Urban unit

#### City clusters in Punjab

The city clustering methodology comprises identifying economically integrated settlements and cities. As per guidelines suggested by the ADB<sup>21</sup>, 75 – 100 km distance or an hour's travelling time from a large settlement is widely accepted as a standard for good connectivity of cluster of cities. The clustering concept focuses designating a 'Hub' city surrounded by other settlements. The idea is to stop thinking of cities only in terms of their overall size but rather on the overall population of a *cluster of cities*; with the hub providing all necessary services for the region.

*"As the population growth in 5 major cities of Punjab is dreadfully exceeding government and private sector capacity, to keep pace, it is important for Punjab to invest in other (intermediate) cities at the same time to ensure a more geographically balanced rate of urbanization and the creation of a system of cities – an efficient network of urban centers whose manufacturing and services industry are connected. Harnessing and promoting this approach of "system of cities" will lead to faster job creation and higher growth of productivity."*

*(Punjab Economic Report 2017)*

*"Our research shows that countries that implement urbanization policies to improve the overall efficiencies and development of the national system of cities, are much more successful in managing urbanization, city development, and ensuring equity between cities than countries that allocate a disproportionate amount of their public resources to the development of one or two large cities."*

*(The Cities Alliance)*

In order to effectively plan for the cities of Punjab keeping in mind their individual context, the System of Cities framework has identified seventeen cities with high economic and social significance to the province. These are termed **hub** cities and have been categorized based on their population. As per this classification, there is one Mega hub (Lahore), 8 divisional headquarter hubs, and 8 regional hubs as shown in the table below.

<sup>21</sup> Choe, K. A. (2008). *City cluster development: toward an urban-led development strategy for Asia*. Asian Development Bank.





**Table 3.24: Competitive advantage of each hub<sup>22</sup>**

Class	Cities	Population (census 2017)
<b>Mega city hub</b>	Lahore	11,126,285
<b>Divisional HQ Hubs</b>	Rawalpindi	2,098,231
	Faisalabad	3,204,726
	Gujranwala	2,164,303
	Sargodha	659,862
	Sahiwal	389,605
	Multan	1,871,843
	DG Khan	399,064
	Bahawalpur	762,111
<b>Regional Hubs</b>	Gujrat	390,533
	Sialkot	655,852
	Jhang	414,131
	Mianwali	118,883
	Taxila	502,055
	Rahim Yar Khan	420,419
	Muzaffargarh	209,541
	Chakwal	138,146

These **hub** cities are supported by several smaller cities in their vicinity, in the form of economic activity, transportation of goods, access to health and social services, and contribution to the regional supply chain. Each hub, with its respective cities forms a **cluster**.

The Urban Unit team conducted an in-house preliminary assessment to identify the city's most likely to fall within the cluster of each of these 17 hub cities. The assessment has focused on characteristics such as administrative boundaries, connectivity, and agricultural activity to identify the physical and economic connections of each hub city with surrounding cities (shown in maps below)<sup>23</sup>.

<sup>22</sup> Letters have been sent to the DCs of respective cities requesting feedback on the accuracy of this assessment. This table will be updated considering their feedback

<sup>23</sup> Since this is the initial phase of the cluster assessments, one city has been allocated to one cluster clusters. However, on ground the situation may be different. Letters have been sent to DCs of respective cities for their input regarding this matter.



#### Tranportation Network

- National Highway
- Proposed Highway
- Provincial Highway
- Proposed Provincial Highway
- Provincial Highway (Single Carriageway)
- Motorways Existing
- Motorways(Under Construction)

#### CPEC

- Central Alignment
- Linkages to CPEC
- Linkages to KLM
- North South Linkages
- Potohar Region Linkages
- Regional Linkages
- Inland Waterways

- Cotton Wheat Zone
- Low Value Zone
- Medium Value Zone
- High Value Zone

#### Legend

- Mega city Hub | 1
- Divisional HQ Hub | 8
- Regional Hubs | 8
- Large Cities | 12  
1,000,001-10,000,000
- Intermediate Cities | 43  
250,001-1,000,000
- Small Cities | 73  
100,000-250,000
- Towns | 65  
< 100,000
- River
- Division Boundary

**Map 3.25 Characteristic assessment Punjab**

Source: Urban unit



Map 3.26 Transportation networks Punjab

Source: Urban Unit



### 3.4.1 Issues in Punjab's cities

Cities of Punjab face a host of problems regarding planning, management and finance. At the heart of it, the paucity of information and the problems of interdepartmental coordination compound these problems so that many investments do not generate the required return in GDP growth expected of them or the social benefits.

Punjab's cities also lack integrated master plans with only Lahore, the provincial capital, having a comprehensive plan for development. This lack of a long-term vision also means that foreign and private investors prefer investing in a few large cities, which further exacerbates issues of regional disparity.

In the absence of a concrete long-term vision and direction for cities, the pressure of urbanization and investments is focused on a few large cities. This is a cyclical problem where the pressure of private investments also forces public investment to target already developed areas. This vicious circle contributes toward regional imbalances and impacts the overall growth potential of the province, which remains untapped.

Many of the problems that cities face may seem insurmountable but with accurate data and understanding of the problems and their interrelations, many of these challenges can be used as a force for development which in turn can spur the urban economy, overall economic growth and social development.

### 3.4.2 Urban governance & management

The administrative systems in the cities of Punjab remain fractured because of multiple actors that administer the city. Specifically, in the case of larger cities, the city administration is divided between the municipal administration, Cantonment boards and private housing authorities, and cooperative housing societies. These jurisdictions have a significant footprint within the city boundary and have grown significantly in the absence of long-term housing policies or a unified master plan.

This has resulted in cities, which are segregated by income groups and cause traffic bottleneck through increased commuting and distances between jobs and homes. This has also led to areas of high and development with many of the private entities and housing estates benefiting from land value capture while the main city administration caters to mostly the lower income groups and struggles to generate its own revenues.

Large cities like Lahore have elected mayors who are to provide leadership and direction for the functioning of

the Metropolitan Corporation in coordination with Cantonment Boards, housing authorities. However, without strong local governments, issues of coordination and management will persist as there is a disconnect between the decision-making tier and the local implementation tier.

In order to tackle the challenges that cities face, a concerted effort needs to be made to bring on board all city management stakeholders and introduce policy frameworks, which look decisively at issues in order to make a comprehensive and cohesive strategy for urban development. Coordination between different authorities as well as departments remains a challenge, as the institutional setup does not have an organized platform or data sharing mechanisms from which to operate.

### Functional boundaries vs. Administrative boundaries

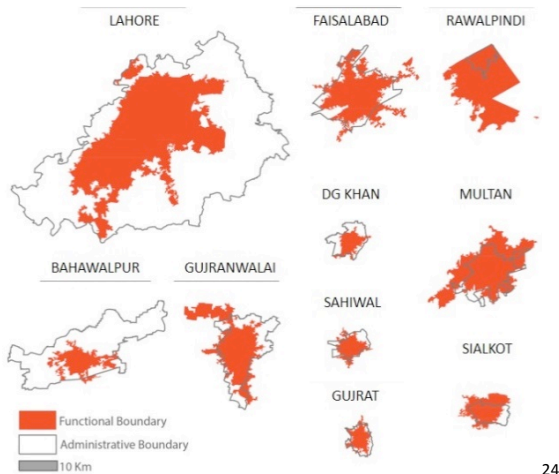
The practice of defining 'urban' based solely on administrative boundaries ultimately sidelines areas that, despite having a low population count, show significant physical urban characteristics. Additionally, within the same area, the urban built up space is misaligned with the administrative boundary. In the absence of monitoring mechanisms, the growth of built up urban boundaries of cities continues to outpace administrative boundaries. This poses an issue of jurisdictions to manage urban issues in rural areas.

The figure below shows ten major cities where only Gujrat has boundaries, which follow functional boundaries. In the case of Rawalpindi, majority of the area outside the municipal limits falls under the cantonment board.

The problem of boundaries is expected to be faced by primary and intermediate cities as they will be place where a majority jobs will be created and therefore face an influx of migrants. A system of monitoring will have to be put in place to keep pace with the resulting urban expansion and manage densities. The boundary issue also cast a substantial bearing on issues city planning, provision of municipal services, and resource allocations.



**Figure 3.27: Administrative versus urban boundaries**



24

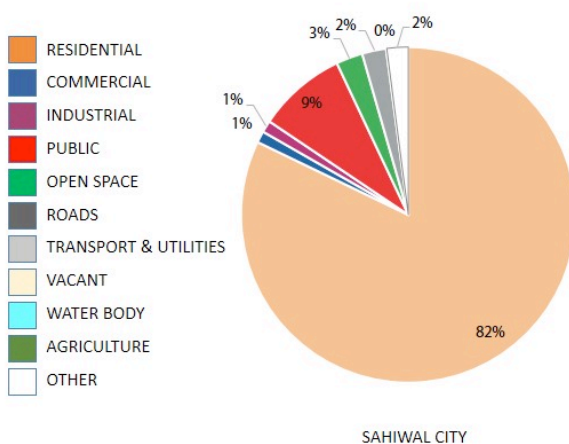
**“Cities are the living entities and their growth need to be institutionally managed by the local authorities rather than making administrative responses”.**

Not only does this present a false portrait of the urban population in the province, it also skews the rate of population growth and subsequently impacts the data tabulations dependent on this information. Decisions taken through this process are spatially uninformed and result in poor management of development funds for intra city projects.

### 3.4.3 Urban expansion & densities

All major cities are also suffering from urban sprawl with continued growth along the outskirts of the cities where the high percentage private land ownership and easy land conversion rules incentivize private residential

**Figure 3.28 land use comparison**



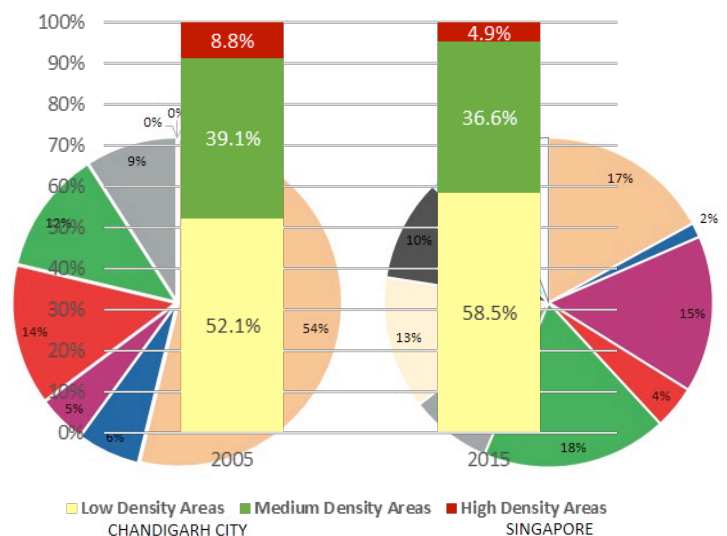
developments. Larger cities are rapidly losing densities through urban sprawl and out migration from city centers to the outskirts owing to the deteriorating quality of life around and within city centers. The impact of the declining trend in densities impacts urban efficiency by increasing the cost of service provision.

According to the Punjab Cities Growth Atlas, from 1995 to 2015, the area of the top 50 cities almost tripled from 891 km<sup>2</sup> to 2,589 km<sup>2</sup>, constituting around 1.26% of total land area in Punjab. Of this, Lahore, the capital, constituted around 18% of the overall expansion followed by the 4 large cities (secondary gateways) at 25%. The next 30 Intermediate cities comprising district headquarters only accounted for 18% of this expansion. By current trends this would mean that city limits will expand by 5 times their present area by 2047.

Factors leading to low density include the culture of land ownership, preference for constructing individual habitations and the custom of investment in land for profit. Land speculation is a threat to the urban system as it acts as a double-edged sword which not only makes housing more expensive but also diverts investment from and makes land and rent expensive for industry and business.

As of 2015, 22.4% of the population occupies high-density areas which constitutes 4.9% in the area of the city; while 18% of the population lives in 58.5% of the area.

**Figure 3.29: Density and area composition**



The rapid expansion of cities has also brought with it another challenge; unplanned cities. City governments have largely been unable to manage urbanization

<sup>24</sup> Source: Punjab Cities Growth Atlas



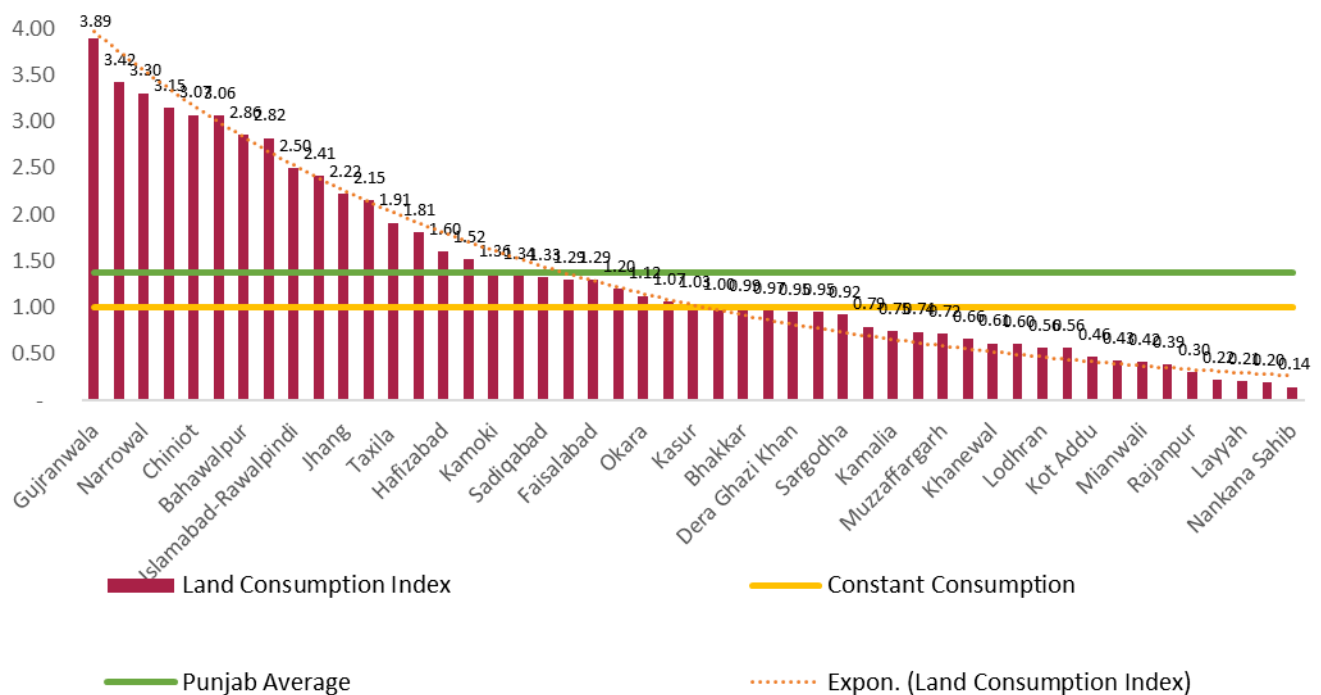


through a coherent master plan. Previous planning regimes, while carrying out master planning exercises, failed to provide follow up and monitoring frameworks, due to which most of their plans are not followed today. Punjab's landscape is mostly under private ownership and is subject to lobbying and political pressures, which makes things difficult to master plan.

An analysis of the top 50 cities in Punjab showed that only 46% of urban areas are planned as shown by uniformity of street patterns, adequate road widths and setbacks, and legal land subdivision sizes. This high rate of unplanned areas means that Punjab may not be able to gain expected GDP gains which are linked to urbanization. Nevertheless, even planned areas are not done so adequately. Outdated regulations and lack of an

residential use, followed by 9% for public institutions, leaving only 9 % for all other land-uses including industry and commercial.

Singapore, on the other hand shows very a balanced distribution of land-uses. For Punjab to leverage future urbanization, it will have to rationalize its land-use distributions and update policies and land-use rules.



**Figure 3. 30: Land consumption index**

inclusive planning framework limits the scope of the planning exercise in cities.

The five large cities of Punjab have expanded significantly in terms of the areas they cover and apart from Gujranwala, show an increasingly polycentric structure. The expansion is creating new opportunities for densification. For instance, Gulberg town in Lahore was initially established as a residential neighborhood. Over time, as Lahore expanded geographically, it now occupies a central place within the city.

The major land uses in Punjab's cities leave much to be desired in term of the distribution of land resources within the city. A comparison of the city of Sahiwal shows that 82% of land has been allocated for



### 3.5 CITY CLUSTER DEVELOPMENT & SYSTEM OF CITIES

Given the growth potential in other provinces and the influx of new developments taking place in Central Asia, Punjab has good prospects for achieving its aim of balanced development in its cities. Global Policy frameworks, such as the SDG's also offer a good opportunity for benefitting from research partnerships in the global drive to achieve these goals.

#### 3.5.1 Global: the SDG's

Pakistan, being a signatory to the Sustainable development goals, has adopted the SDG's into its development agenda. Special SDG units have also been established at the Planning Commission and at the provincial level. At the federal level, two additional SDG units have been created at Prime Minister Office and in Parliament; however, the mechanism for policy coordination at the federal level is not in place at the moment. The strategy for regional development is expected to contribute to the following SDG Goals

**SDG GOAL 11: Make cities and human settlements inclusive, safe, resilient and sustainable**



countries

**TARGET 11.3:** By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all

#### INDICATOR 11.3.1

Ratio of land consumption rate to population growth rate

#### INDICATOR 11.3.2

Proportion of cities with a direct participation structure of civil society in urban planning and management that operate regularly

**SDG GOAL 17: Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development**

**TARGET 17.18:** By 2020, enhance capacity-building support to developing countries, including for least developed countries and small island developing States, to increase significantly the availability of high-quality, timely and reliable data disaggregated by income, gender, age, race, ethnicity, migratory status, disability, geographic location and other characteristics relevant in national contexts

**TARGET 17.14:** Enhance policy coherence for sustainable development

The spatial strategy aims to directly address the Target 11.A under Goal 11 to enhance planning at the provincial level and will contribute to the goal 17 targets providing a framework for data management and policy management.

#### 3.5.2 National vision

The Planning Commission is a financial and public policy development institution of the Government of Pakistan and comes under Ministry of Planning, Development and Reforms. The Commission is tasked with research and policy development initiatives with the Ministry of Finance (MoF). Since 1952, the commission has played a major role in preparing five-year plans for the national economy, which were replaced in 2005 by the 3-year Medium Term Development Framework (MTDF). There are two development programs in Pakistan; Public Sector Development Program (PSDP) at the federal level and Annual Development Program (ADP) for provincial development.

Pakistan's national urban policy is indirectly framed within the **Pakistan Vision 2025** document which sets out policy targets under 7 thematic pillars. These pillars and their 25 targets have been stated to be in conformance with the SDG goals and will be objectively monitored through the Gross National Well Being (GNWB) Index<sup>25</sup>. While the 25 targets may seem limited



in comparison to the 169 targets under the SDG's, in order to achieve the development goals of Vision 2025, it will require actions on other targets under SDG 11: *Make cities inclusive, safe, resilient and sustainable.*

Pakistan is also a signatory to the New Urban Agenda which was adopted at the Habitat III Conference in Quito, Ecuador, on October 20, 2016. Currently, the UN-HABITAT is working with by the Ministry of Climate Change (MOCC) to prepare the State of Pakistan Cities Report<sup>26</sup>, which help quantify and inform about the challenges to the Pakistani New Urban Agenda.

#### 3.5.3 Provincial vision

Punjab Growth Strategy 2018 and the Urban Sector Development Framework 2015 both focus on Institutional restructuring to strengthen city-regional planning and support, improve service provision in both

<sup>25</sup> Pakistan Vision 2025 document

<sup>26</sup> <https://unhabitat.org/government-and-partners-plan-state-of-pakistan-cities-report/>



urban and peri-urban areas, and enable equity in the region.

The main instrument to implement a plan is the Annual Development Program, commonly known as ADP. More recently, the concept of the Medium-Term Development Framework (MTDF) has evolved, which consists of yearly ADP plans for the following three years<sup>27</sup>.

### 3.5.4 Focus areas

Initiatives outlined for balanced regional development in the previous section and follows a three-pronged strategy to make cities competitive; i.e. Urban Governance; Improving Urban Structure & Densities; and Improving Livability.

### 3.5.5 Urban governance

**Designate a Punjab Regional Planning entity** which will grant land ownership and define regional land classification (urban, peri-urban, and agriculture)

**City master plans to be developed by respective local governments** with the assistance of development authorities of mega and large cities and regulated by the Punjab Regional Planning Entity.

**Capacity building of development authorities** of intermediate and small cities to allow them to develop city master plans without assistance in the future.

**Establish city and town councils** for help in coordination between different city authorities. Introduce information sharing protocols for plans and projects.

**Develop a City Specific Spatial Data portal** for planning, research, and information sharing.

**Develop a long-term vision for the city** based on evidence and planning to align government and private sector priorities.

**Build local government capacity** under the principle of subsidiarity and introduce information systems for better service provision and coordination.

**Promote policies for local action** by forming and evolving local associations of markets and communities for local planning.

### 3.5.6 Legal and regulatory framework

**Promulgate and implement a Punjab Planning Act** to establish the city master plan as a legally binding document. This Act will create the effective premise with requisite mandate of a regulatory body which will

perform periodic audits related to spatial planning, land use, and regulation. City master plan, land use, building, and zoning to be governed and regulated by the Punjab Regional Planning Entity and executed by individual respective cities.

**Update the methodology of regulations;** the current regulations focus on physical dimensions and standards, whereas land use needs to be regulated in terms of performance and socio-economic contribution.

**City master plan to be updated** every 10 years as per the changing dynamics of the city.

**Provincial audit** to take place every 10 years and penalties to be issued if land use is not in accordance with the latest city master plan.

**Urban Land Records System,** Effective urban land management is critical to urban development. The absence of well-planned urban land management in Punjab results in spiraling land prices, speculation and inflation, and growth of informal settlements that is adversely impacting economic and urban development. Inadequate land management framework in urban areas is also resulting in violation of land use regulations and in encroachments. Typically, urban land regulations are influenced by zoning, regulated densities, building by-laws, master plan and comprehensive city development plans. Violation of urban land use regulations is due to lack of valid cadastral, registration, and approved records; it results in haphazard and unconstrained land use and seriously impact the efficiency of the city governance.

Further, increase in the volume of urban land transactions due to rapid industrialization, and changes in land use pattern due to urbanization, have further complicated the formal process of land registration. The situation has been aggravated by informal settlements such as slums and encroachments on urban land. Lack of formal security of land tenure causing disjunction in planning if the informal settlements need to be recognized in the planning instruments. Under such developments, the city administrations have less control over land regulation, allocation and management.

This uncertainty in rights on urban lands undermines the objectives of good governance and poses a serious threat to social stability and economic development.

The government of the Punjab should take concrete measures to develop comprehensive urban land records system in the province.

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<sup>27</sup> Punjab Planning Manual





### 3.5.7 Urban structure & density

**Define new urban boundaries for all cities** and define 20-year growth boundaries. Boundaries should be validated yearly in conjunction with the proposed agency for peri-urban and rural development.

**Assessments of density status** of areas within cities.

**Preparation of urban design schemes** in follow-up of proposed policy statements.

**Developing and enforcing urban design guidelines** to dictate provision of setbacks, shop fronts, street furniture & fixtures, pedestrian & bicycle infrastructure.

**Rationalize land-uses** and bring them at par with international standards through stricter control of new developments and redevelopment of incompatible land-use areas.

**Develop a relocation plan for polluting and dangerous industries** to areas where their impact can be managed and mitigated and improve livability.

**Introduce urban design guidelines** to make cities more efficient and accessible to the public.

**Redevelop major marketplaces and city centers** by prioritizing pedestrianism, design public spaces and provide direct accessibility to public transport.

**Integrate TOD zones** in land use rules to allow for vertical mixed-use development within the zone

**Urban rejuvenation must be adopted** as a comprehensive and integrated strategy that would enable the resolution of urban problems, which seeks to bring about a lasting improvement in the economic, physical, social and environmental conditions of a degraded area i.e. those that are at the fifth stage of urban development –the declining stage. The urban rejuvenation would be attempted to rebuild rundown areas of cities by removal of sore spots or blights affecting surrounding areas; save declining areas and then restore them to sound condition.

### 3.5.8 Participatory planning

**Mobilizing and facilitating stakeholder** consultations around development schemes

**Training and capacity building** of community stakeholders for small scale infrastructure projects

**Designation of community leaders** who will represent it in government and development forums/meetings/decisions

### 3.5.9 Digitalization and efficiency

Punjab Regional Planning Entity to coordinate with PTA / Punjab IT board to **acquire city and region-specific data** on the ICT.

**Device a mechanism for periodic replacement** of service delivery mechanism in transport, policing, land registration, water and sanitation, health, education, housing and other suitors for incorporating ICT.

**Extend training and capacity building** of existing staff in respect to ICT.

**An integrated Command, Control and Communication Centre** to be established and operated by the safe cities' authority.

**Incorporation of ICT infrastructure** in government departments to establish e-governance systems and establish citizen participation platforms.

**Ensure protection of private data** collected through the ICT infrastructure.

**Sensor aided monitoring** of air and water quality in cities.

**Upgradation of urban transport systems** by integrating ICT infrastructure for traffic signals, road signage, parking lots, and public transit corridors.