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## The Rise of Karachi as a Mega-City: Issues and Challenges

**Abstract:** *The dualities of urban development are sharply felt in the mega-cities of South Asia and especially in Karachi. As the city expands, the opportunities and amenities available to its residents are constrained by several factors affecting its social, geographical, infrastructural and environmental dynamics. Given this scenario, the policy paper aims to provide concrete steps for ensuring a sustainable and inclusive urban future for the people of Karachi.*

### Context

Five of South Asia's mega-cities, Delhi, Mumbai, Kolkata, Dhaka and Karachi, have become the focal point for diverse forms of economic, social and political interaction. Their combined population is 15 per cent of the region's total urban population.

Each of these cities performs a vital function with regard to trade, investment, employment, growth and innovation while simultaneously bearing the cost of this function. Not only do these cities face acute challenges in terms of densification, overburdened and dilapidated infrastructure, poor urban service provision and a growing slum population, they also pose significant threats to urban life—traffic congestion, environmental pollution, polarization of communities and rampant poverty and violence.

Unplanned and chaotic urban development is central to understanding such dichotomies. Karachi in many respects exposes the underlying link between a city's social, economic and governance arrangements and how they undermine the quality of urban life.

### Karachi's importance in Pakistan's urban demography and economy

As the first and largest mega-city of Pakistan—a country that has the highest rate of urbanization (36.2 per cent) in South Asia following the Maldives—and as the capital of Sindh—the most urbanized province of Pakistan—Karachi plays a central role in the country's urban demography, where one in five urban dwellers reside in this city alone.

Economic activity in Karachi is central to Pakistan's economy, representing 20 per cent of total national output and 30 per cent of total industrial

output. Major sectors contributing to the city's gross metropolitan product include trade and commerce; manufacturing; transport—ports, airport and shipping; real estate; and construction and services.

Over the years, the sectoral focus has shifted increasingly from manufacturing towards services. The combined effects of frequent power outages, reliance on informal transactions and political instability have been detrimental for businesses in the city. Although Karachi accounts for 30 per cent of small- and medium-scale manufacturing and 40 per cent of large-scale manufacturing, the share of this sector in total metropolitan output has fallen from 37 per cent in 1985 to 18 per cent today.

On the other hand, the services sector has grown steadily at 8 per cent per annum, contributing significantly to the metropolitan and national economy. The banking and financial sector and wholesale and retail trade have expanded enormously. Forty per cent of total financial activity and 50 per cent of all bank deposits are made in Karachi alone.

Twenty-five per cent of national tax revenues, 40 per cent of Sindh's provincial revenues and 62 per cent of income tax collections are generated from Karachi. Ninety-five per cent of Pakistan's foreign trade also relies on the city's two Sea ports and airport.

Karachi's role in Pakistan's economy as gauged through its contribution to national output, revenue collection and financial activity depends on a productive labour force, good infrastructure, stable conditions and effective mega-city administration. The scale of urban expansion however has outpaced the capacity of the city to deal with competing interests, resource deficits and ecological pressures.

### Challenges facing the mega-city

Three major challenges that need to be addressed by urban policy makers include:

### Key points

a) Karachi performs a vital function with regards to trade, investment, employment, growth and innovation, while simultaneously bear the cost of this function in terms of densification and overburdened and dilapidated infrastructure.

b) Good urban planning can result in real urban transformation of Karachi. Policy makers need to balance the negative externalities associated with spatial concentration with positive outcomes while focusing on enhancing access to infrastructure and services.

1. The social and spatial divide
2. Shortage of key infrastructure
3. Environmental degradation

### ***Social and spatial divide***

#### *Population*

Successive phases of migration have resulted in a complex distribution of communities and have had far-ranging consequences for the city's growth. Karachi's population has increased considerably over time. Although the United Nations Population Division (UNPD) projects that this number is likely to cross 20 million in 2025, the 2011 pre-census accounts suggest that the population of Karachi has already reached this figure. Official census values have not been updated since 1998, thereby exacerbating the problems of conducting reliable assessments of urban demographic change in the city.

#### *Urban planning*

Karachi has made several attempts to plan urbanization. These include the Karachi Physical Plan of 1945; the Greater Karachi Plan, otherwise known as the Merz Rendall Vatten (MRV) Plan 1950; the Greater Karachi Resettlement Plan carried out in the late 1950s; the Karachi Master Plan 1974-85; the Karachi Development Plan 2000; and most recently, the Karachi Strategic Development Plan 2020.

Although planners have clearly identified the need for managing the size of the city, planning is at a standstill. Land, development and municipal control are divided into several federal, provincial and local level agencies. Overlapping responsibilities, conflicts of interest and poor coordination across the various development agencies and authorities have jeopardized the implementation of projects, and placed the city in the hands of an extremely powerful informal network that controls access to water, land, housing and transport.

#### *Employment*

Roughly 75 per cent of Karachi's population is employed by the informal sector, mainly in businesses, workshops, manufacturing units and transport. Informal settlements, which are home to the city's low-income groups, also contain small-scale manufacturing units, mainly for garments, leather products, carpets and textiles. Components for the light engineering and electronics industries and spare parts for machineries, cars and tractors are also produced in such locations, employing a sizeable number of residents.

Forty per cent of the people employed in Pakistan's large-scale manufacturing sector are based in Karachi. The city employs 71.6 per cent of Sindh's industrial labour force and provides 78 per cent of jobs for the province's formal private sector.

#### *Poverty*

Urban poverty is stark in Karachi in that 50 per cent of the total population lives below the poverty line. More than eight per cent of the people live above the poverty line, but fall in the vulnerable category. The high incidences of poverty are recorded in low-income settlements, particularly in *katchi abadis*. Eighty-nine per cent of the people living in *katchi abadis* are below the poverty line. Out of these people, 54 per cent are chronically poor while 35 per cent are transitory poor. The other 11 per cent are considered vulnerable.

Approximately 75 per cent of all households in Karachi belong to poor and low-income groups, whereas the remaining 25 per cent belong to middle and high-income groups. The average monthly income of households is PKR 15,000, varying significantly across the upper and lower income categories.

Urban poverty is a growing concern for the city's residents and administrative agencies. Typically, the urban poor consist of people that lack sufficient income, permanent jobs, tenure security and access to education, health, basic services and infrastructure. Deplorable living conditions and unhygienic environments expose the urban poor to ill health and low productivity, limiting their capacity to generate income and avail proper livelihoods. Deprived of their 'rights to the city', these underprivileged residents are stuck in a perpetual poverty trap.

#### *Violence*

In its recent history, Karachi has been flagged as a violent city both within Pakistan and abroad. Statistics on crime compiled by governments, police departments and the UN indicate that Karachi has the highest homicide rate among the world's 13 largest cities, at 12.3 per 100,000 residents. Homicide is particularly common in the city's central and southern parts, where political parties and criminal gangs exercise violence with impunity. Karachi also has very high rates of street crime including phone and vehicle thefts.

Economic advancements in the city have been curtailed by conflict along ethnic and sectarian lines, however the roots of such conflict have more to do with dysfunctional urban development than simply, ethnicity and religion. The social and economic division of the city into planned and unplanned areas, the competition over resources and public services and the interplay between political parties and interest groups have tainted the city to a considerable degree. The combination of arms and drugs circulating in Karachi during the Soviet occupation of Afghanistan also bred a culture of violence.

Even though urban crises of the 1980s and 1990s have largely subsided, the city has been subjected to violence

#### **About Mahbub ul Haq Human Development Centre**

Under the umbrella of Foundation for Human Development in Pakistan, Mahbub ul Haq Human Development Centre was set up in November 1995 in Islamabad, Pakistan by the late Dr. Mahbub ul Haq, founder and chief architect of UNDP Human Development Reports. With a special focus on South Asia, the Centre is a policy research institute and think tank, committed to the promotion of the human development paradigm as a powerful tool for informing people-centred development policy, nationally and regionally.

ce time and again. Between 2003 and 2011, more than five thousand people were exposed to brutalities in the form of terrorism, target killings and sectarian disputes. According to the Human Rights Commission of Pakistan (HRCP), 2,284 people, died in 2012 due to ethnic, sectarian and political violence; 1,725 people died due to target killings; in addition to 133 policemen and 12 paramilitary officers. More than a hundred kidnapping cases were also reported. As counter measures, law enforcement agencies conducted as high as 28,104 target operations the same year. Apart from the loss of human lives, the toll on Karachi's economy has been substantial. Revenue losses from increased crime reached PKR 33,417 billion in 2012.

### **Shortage of key infrastructure**

#### *Housing*

Urban settlement patterns are haphazard in Karachi with a distinct ethnic undertone. *Katchi abadis* have consolidated themselves mainly because of the government's inability to respond to the housing needs of low-income groups. Over time and through various experiments with housing schemes, it has become evident that both the state and the formal housing development sector are ill suited to provide affordable housing to the poor.

The formal sector has not only failed to meet the demand for low-income housing, but has also been responsible for manipulating and distorting land prices. More than land scarcity, distribution policies and procedures and access to housing finance are biased against low-income residents.

Five to seven per cent of the housing demand in Karachi stems from high-income groups, fifteen to twenty per cent from middle-income groups and the bulk of it comes from low-income groups and the poor, about 75 per cent. Currently, the city faces a housing shortage of 90,000 units per year. Estimates show that by 2020, the total number of households in Karachi will reach 3.8 million. Most of these units are likely to be filled by low-income residents.

The Karachi Strategic Development Plan (KSDP) 2020 seeks to address the housing shortage by promoting high-rise development, densification and in-fill within the metropolitan city in addition to augmenting occupancies in already developed but vacant housing schemes. Upgrading and regularizing *katchi abadis* are also components of this strategy. Upgrading will involve the provision of trunk infrastructure to improve housing conditions while regularization will facilitate land titling and ownership. The extent to which these measures will be adopted remains to be seen.

#### *Water supply*

Karachi receives an inflow of 30 cubic metres/per second from the Indus River and the Hub and Dumlottee reservoirs. However, supplies are insufficient to meet the growing demand for water. Domestic water use in the city is roughly 165 litres per person per day. In addition to the shortfall and poor tariff collection, lack of maintenance and management of the water supply system has resulted in distribution losses of roughly 35 per cent.

Water supply in Karachi is not only inadequate, but also irregular and inequitable. Only 60 per cent of households are linked to the main supply network. Households with piped water receive better supply than those without. In most places, water is available for four hours in a day at very low pressure. Due to the lack of alternatives, several households also have to rely on vendors that supply water through commercial tankers at exorbitant prices.

Water quality is another area of concern. Filtration plants are limited in their capacity to filter water. While 60 per cent of the water supply goes through a filtration process, the remaining is disinfected through chlorination. Neither of these methods is sufficient to purify water. The measures to prevent users from receiving contaminated water are also ineffective.

Water theft also poses a significant challenge. Suppliers that obtain illegal connections to public networks extract over 113,000 cubic metres of water a day, exacerbating current shortages and causing revenue losses of USD 15 million per year.

#### *Wastewater and sewerage disposal*

The city generates 472 millions of gallons of sewage per day. The sewerage system not only lacks citywide coverage, but also lacks treatment capacity. If optimally used, existing treatment plants can treat 32 per cent of the sewage, but only manage to treat 12 per cent. Therefore, 88 per cent of sewage in Karachi is left untreated.

Only the central and southern parts of Karachi and roughly 40 per cent of the population are linked to the sewerage system. Most *katchi abadis* are disconnected and therefore, resort to their own mechanisms for disposal. Untreated wastewater is typically discharged into *nallabs*, rivers or the Arabian Sea. This is primarily because sewage flows directly into the natural drainage system. Although government authorities have tried to divert sewage to trunk sewers and treatment plants, they have failed to do so as it involves digging up the entire system and relaying it.

Poor maintenance of the sewerage system, dilapidated infrastructure and inadequate drainage are key impediments to managing wastewater. Open sewers and overflowing manholes are prevalent in many parts of the city, creating poor sanitary conditions and unhealthy physical environments.

*Transport*

Over the years, several proposals for expanding Karachi's transport network have been incorporated into the city's master plans. A number of projects have been partially implemented or abandoned midway, magnifying the city's transport deficit.

In the early 1970s, both public sector and privately owned transport companies operated an elaborate bus network with proper depots, terminals and workshops. However, an increasing demand for public transport forced the government to allow individuals to run mini-buses along specific routes. Within a short period of time, these mini-buses overtook other forms of public transport. Faced with such competition, both public and private sector transport companies had to shut down.

Although proposals to establish a mass transit system in Karachi were made as early as 1952, it is the one of the few mega-cities in the world that has not set up a metro or monorail network. The nature of public transport is neither conducive for the people using it nor does it cater to the city's needs. The current seat to passenger ratio is 1:34.

Private transport in the form of motorcycles and privately owned vehicles is predominantly used. While low-income groups typically rely on mini-buses and rickshaws, middle and high-income groups prefer to use cars. With increasing rates of motorization, the city is witnessing unprecedented levels of traffic congestion and environmental pollution.

***Environmental degradation***

Karachi is confronted with severe environmental challenges. Expansion of the built-up space and increased densification has intensified pressures on public infrastructure. Large-scale construction projects related to housing, commerce and transport have altered the urban landscape.

The level of air pollution in the city exceeds the limits set by the World Health Organization (WHO) and the National Environmental Quality Standards of Pakistan. Eighty-six per cent of air pollution is attributed to emissions from fuel inefficient motor vehicles, particularly diesel-run buses with high sulphur content and two-stroke engine rickshaws. Traffic congestion is especially high in the inner city as a result of port-related activities. The increasing number of motorized vehicles on the road also poses a significant threat.

Improper waste disposal is acute in low-income settlements, particularly *katchi abadis* giving way to poor practices in sanitation, hygiene and public health. Streets, lanes and roadsides are regularly dumped with garbage. Only 60 per cent

of solid waste is transferred to landfill sites, most of which have reached full capacity.

Pollutants are also present in Karachi's water supply. Pathogens found in sewage-contaminated water pipes have led to water-borne diseases and epidemics. The city's water quality standards have also fallen well below the guidelines set by the WHO.

Moreover, the dumping of untreated sewage into the rivers and the Arabian Sea has exacerbated environmental conditions. The Lyari and Malir rivers are polluted by domestic and industrial sewage. In the absence of effluent treatment plants, industrial waste containing oil, heavy metals and toxic chemicals are discharged directly into the rivers and have affected marine life considerably.

**Policy recommendations**

Planned urbanization can improve outcomes for human development by providing people with the necessities and comforts of urban life. On the flip side, unplanned urbanization can pose the greatest challenge to the survival and wellbeing of urban dwellers and exclude them from sharing the benefits of development, as we have seen in the case of Karachi.

The city's future awaits an informed response from urban planners and policy makers that is in consonance with a rational and environment-friendly approach to infrastructural development. While investing in infrastructure is a costly endeavour and necessitates long-term planning, there are several concrete steps that can be taken in the immediate to short-term.

These include:

- Resource mobilization by municipal and provincial authorities to finance basic services;
- Recovery of losses emanating from water theft and timely replacement of faulty pipelines;
- Access to formal housing credit for low and middle income groups;
- Development of human capital and the expansion of individual capabilities to position Karachi as a globally competitive mega-city with substantial benefits from urban agglomeration;
- Capacity-building measures to restore people's trust in local government institutions; and
- Administrative adjustments to ensure citizen safety, all of which will improve the carrying capacity of the city.

Sustainable urban planning needs to be at the forefront of urban policymaking in Karachi, where planning documents are dynamic enough to incorporate real-time adjustments. Principles underlying these policies should entail:

- Due consideration to ecological and environmental conditions in the city and its adjoin-



ning areas in addition to the needs and requirements of low-income residents;

- Balance between the core and periphery whereby the expansion of the mega-city does not come at the cost of peripheral development;
- Social and environmental assessments at all stages to ensure effective land-use management;
- Minimal speculation over current and potential land values;
- Protection of land from encroachment and illegal occupation; and
- Adherence to zoning byelaws and building regulations that favour orderly densification of residential and commercial areas.

For a city of the size of Karachi, good urban planning can result in real urban transformation. Balancing the negative externalities associated with a spatial concentration of people and economic activities is contingent upon effective mega-city management. More often than not, the city's problems are caused by the pattern of land-use, the violation of laws and regulations and overall urban mismanagement. To rectify these, the city's administrative apparatus can conduct annual surveys and assess both the quality of urbanization and its scale. Moreover, it can document the contribution of the informal sector, which plays a central role in the city's growth and function.

Enhancing liveability should be central to the city's urban transition strategy.

- At a social level, the city's response to urbanization should rest primarily in integrating ethnic groups to create a cohesive urban identity.
- At a political level, all the stakeholders concerned should advocate for a participatory approach to urban development.
- At an economic level, the benefits of urban prosperity should be shared equally and equitably across the income-groups.
- At an environmental level, the city's expansion should factor in ecological limits.

This policy brief is drawn on the findings of *Human Development in South Asia 2014: Urbanization: Challenges and Opportunities*. The author, Amina Khan, is a former Senior Research Fellow at Mahbub ul Haq Centre.

### Themes of the Report of Human Development in South Asia

1997	The Challenge of Human Development
1998	The Education Challenge
1999	The Crisis of Governance
2000	The Gender Question
2001	Globalization and human Development
2002	Agriculture and Rural Development
2003	The Employment Challenge
2004	The Health Challenge
2005	Human Security in South Asia
2006	Poverty in South Asia: Challenges and Responses
2007	A Ten-Year Review
2008	Technology and Human Development in South Asia
2009	Trade and Human Development
2010/11	Food Security in South Asia
2012	Governance for People's Empowerment
2013	Water for Human Development
2014	Urbanization: Challenges and Opportunities

### Other Books on Human Development

1995	Reflections on Human Development by Mahbub ul Haq
2002	The South Asian Challenge by Khadija Haq (editor)
2003	Readings in Human Development by Sakiko Fukuda-Parr and A. K. Shiva Kumar (editors)
2008	Pioneering the Human Development Revolution: An Intellectual Biography of Mahbub ul Haq by Khadija Haq and Richard Ponzio (editors)

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