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Background Paper

Urbanization has driven development of Asia-Pacific's economies, but patterns of growth are unsustainable, and infrastructure gaps remain significant

An estimated 120,000 people arrive in Asia-Pacific's cities each day and the region's share of the world's urban population is projected to grow from 42 to 63 per cent between 2010 and 2050 (ESCAP/UNDP, 2013). This process is driven by three main factors: natural demographic increase, the redrawing of administrative boundaries and rural-urban migration. China and India alone are expected to contribute over one third to the world's urban population increase between 2014 and 2050, adding 292 million and 404 million people to their cities respectively (DESA, 2014)[1]. This unprecedented urban transformation has profound implications for many ESCAP member States, the Asia-Pacific region, and the world as whole.

The sources of demographic growth vary considerably. Amongst South Asian states, the focus of this *Policy Dialogue*, up to 70 per cent of Pakistan's urban growth is due to natural population increase whereas in India this figure is only 58 per cent; 21 per cent is due to in-migration, and a further 21 per cent is due to city administrative boundary evolution (Mahbub ul Haq Human Development Centre, 2014). Likewise, there are key differences in the processes of urbanization in relation to city size. In the ESCAP region overall, urban growth is being driven by secondary and medium sized cities, while in South Asia megacities are playing a dominant role (see Figures One and Two). Understanding such

[1] Although slow, India's urban growth rate varies, with much higher rates of urbanization in the states of Gujarat or Mahrashtra. Similarly, the urbanization rate of Punjab in Pakistan is 50 per cent, whereas nationally it is only 37 per cent (Mahbub ul Haq Human Development Centre, 2014, Human Development in South Asia 2014 – Urbanization: Challenges and Opportunities, Lahore).

trends has implications for urban policy and investment choices. However published figures can also be misleading. As an example the official urban figure of Sri Lanka (around 15 per cent) obscures many areas that would be considered urban elsewhere in South Asia. (Mahbub ul Haq Human Development Centre, 2014)

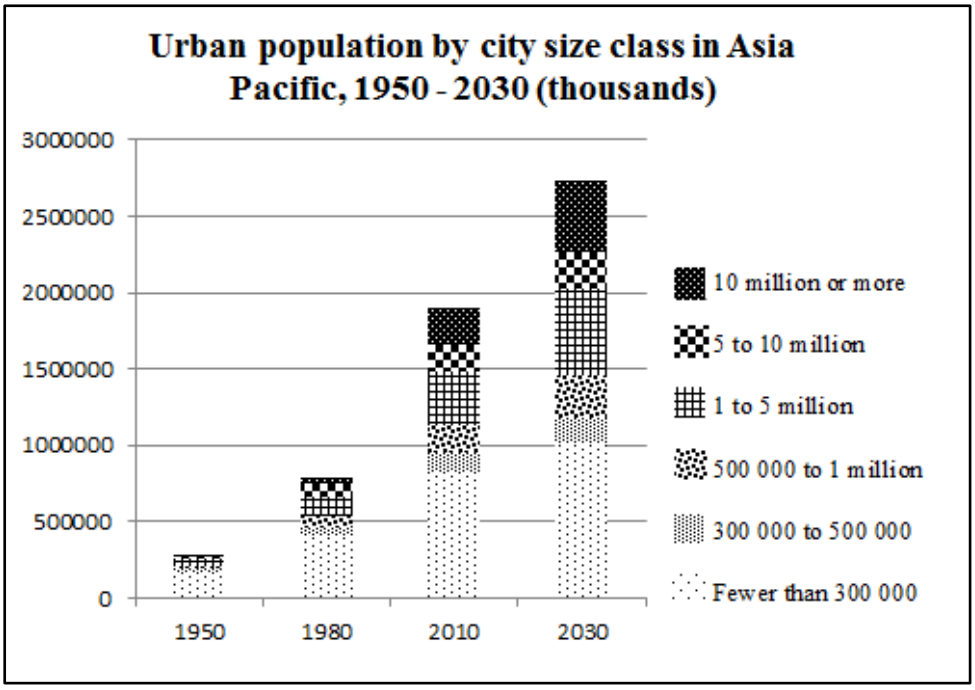

Figure One: Urban Population by City Size: Asia-Pacific (Source: DESA, 2014)

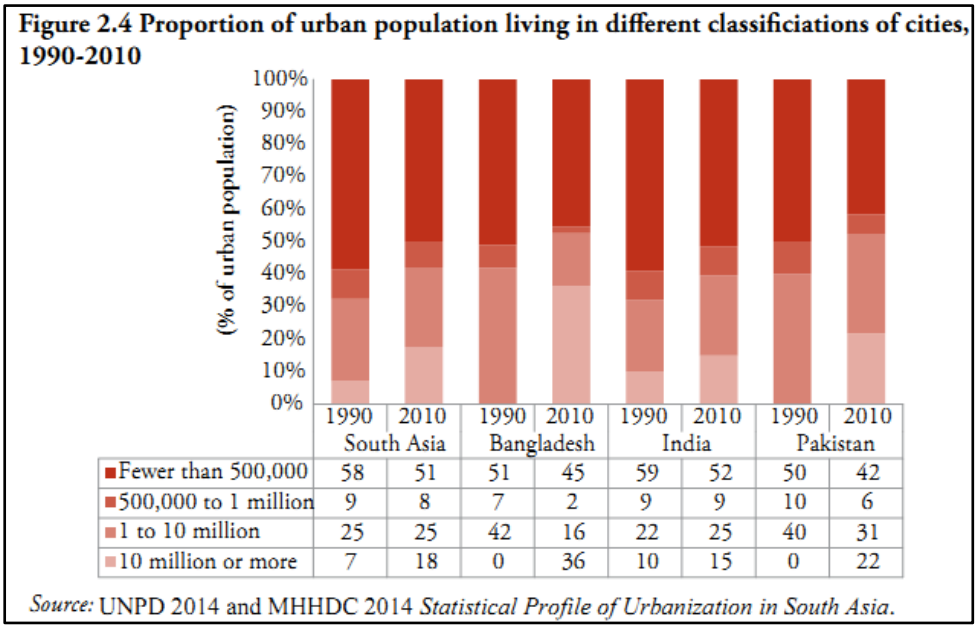

Figure Two: Urban Growth in South Asia is concentrated in megacities (Source: Mahbub ul Haq Human Development Centre, 2014)

Urbanization and economic growth are indivisibly linked. Cities are stimulating growth while also responding to economic change and have in recent decades become *the* growth engines of the Asia-Pacific: 45 per cent of the Asia-Pacific population that is urban generates around 80 per cent of GDP. Although impressive, urbanization and economic growth are not leading to equity, even as millions have been lifted out of poverty. The by-products of this transformation can no longer be ignored or left unattended. Environmental degradation, social divisions, persistent poverty, and inefficient patterns of growth have all become embedded in the region's urban experience. South Asia has experienced slower economic growth and urbanization in relative terms, but according to many it is "poised for a major urban demographic transition" (World Bank, 2012). In meeting this opportunity, and challenge, South Asia must construct and shape its future urban growth in new and more sustainable ways.

In South Asia's urban transformation there are emerging "growth with inequality" trends, even in the region's most successful cities. Spreading the wealth and success of urban dynamism in addressing gaps is not the only challenge facing cities in the region however. In parallel with India's urban growth, there will also be a huge rise in the middle-classes from 22 million to 91 million people in 2030 (McKinsey, 2010). The resulting shift in consumption and production patterns will have profound impacts on cities. Future cities in South Asia are at risk of becoming victims of their own success as they outstrip their resource base. A "cities as usual approach", based upon carbon-intensive and car-based lifestyles, threatens to undermine the future development of South-Asia's urban present, and future.

An alternative to unequal and unsustainable cities for the sub-region is of course possible. Infrastructure, in various forms, is often cited as a critical component for South Asia's future urban growth and development. The commonly cited 'infrastructure gap' points to the economic and social implications of unmet needs and gaps ranging from sanitation[2]; pollution and congestion –with both economic and health costs to cities and its residents; energy[3]; housing – especially safe, resilient and affordable shelter[4], being amongst the principle gaps and needs. In meeting these diverse but related challenges, it is logical for infrastructure deficits to be tackled in an integrated way which supports sustainable, resilient and inclusive urban growth, but also ensures that the economic potential of the region's cities is realized.

Towards a low-carbon, inclusive and resilient urban future

[2] An estimated 700 million people do not have access to basic sanitation infrastructure in South Asia (UNESCAP, 2013)
[3] Globally, an estimated 1.3 billion people still do not have access to electricity, two-thirds of whom are situated in Bangladesh, India, Indonesia and Pakistan (UNESCAP 2013)
[4] Approximately 571 million people in Asia and the Pacific live in slums, with this number increasing each year. The slum population of the Asia-Pacific region is around two-thirds the global estimate (UNESCAP 2013)

While cities contribute greatly to the Asia-Pacific region's economic transformation, this is not without its costs. The corollary of economic and urban growth is that urban areas are the principle sources of Green House Gas (GHG) emissions through buildings (around 40-70 per cent of emissions) industry (12- 30%) and transport (13-18 emissions)[5] (UN-Habitat, 2011/UNEP, 2009). These figures vary greatly between countries due to climate and pre-existing infrastructure and yet, throughout Asia-Pacific there are opportunities to alter the way cities consume and produce energy. Dealing with these fundamentally related issues provides a challenge but also an opportunity for green and equitable retrofitting of cities, as how we build and what is built will influence not only current, but also future emissions.

Though both physical facilities (roads, sewers) and services (energy and water supply) are typical gaps faced by many governments, the key challenge is understanding how meeting such needs can be achieved concurrent to lowering carbon emissions and carbon intensity. Infrastructure "gaps" in essence need to be "greened", rather than just simply filled. Infrastructure is a city's "hard wiring", and it holds the unexplored co-benefits for making cities greener, more equitable, and more economically successful. There are important synergies to be found in "Building Right" and "Building More" (World Bank, 2013). No matter which way one understands the infrastructure gap, tackling the challenge should result in *investment* but also in *access* (both social and physical) and *quality*. It is crucial to ensure that today's solutions do not create tomorrow's problems, because infrastructure is locked in for many generations. In this sense, there is a significant "potential for regret" (World Bank, 2012) that should galvanize action around greener approaches.

It is tempting to equate greater investment in infrastructure with greater access for all. This is debatable, as certain infrastructure types may only reach specific socio-economic strata. Some infrastructure influences livelihoods or non-income aspects of poverty (i.e. water and sanitation) whereas improved road access for instance invariably bring benefits to wealthier populations first. These gaps have been the focus of much investment for decades in the region but the most basic infrastructure is still lacking: Full access to water (MDG 7) has yet to be met, despite substantial progress having been made[6]; in terms of sanitation (MDG 7C), achievements have been limited, as almost 700 million people still do not have adequate access - mostly in India, Bangladesh and Pakistan. Globally, nearly 1.3 billion people still do not have access to electricity of which two thirds are situated in Asia, the majority in South Asia and South-east Asia[7].

[5] This does depend on whether one uses data that describes energy consumed or energy produced.
[6] Nearly one-in-ten people lack access to clean drinking water in Asia, mostly in South Asia.
[7] Bangladesh, India, Indonesia and Pakistan represent the region's large off-grid populations (UNESCAP 2013). With less than 400 Kwh per person, annual energy consumption in Asia is still the second lowest, after Africa.

Finally, future infrastructure solutions must also contribute to the development of a resilient urban future. Indeed it is essential that in meeting infrastructure gaps we concurrently strengthen the functioning of urban systems especially those on which the poorest depend. Disasters and slow-onset changes resulting from climate change will increase pressure on existing services and infrastructure, with disproportionate impacts on poorer populations and communities, and vulnerable groups such as persons with disabilities, older persons and children. In response there is a need to mainstream disaster preparedness and resilience planning into future infrastructure. This should also be at the most appropriate scale and 'fit for purpose'. Implementing low-cost and community-level design and flood protection measures can help ensure that essential infrastructure remains safe and operational during disasters (such as green and resilient schools). In greening urban infrastructure we must also look to strengthen urban systems for future climate-related changes and challenges.

Infrastructure gaps in South Asia: A brief assessment

As South Asia and the Asia-Pacific will continue to urbanize for decades to come, action must be taken that results in closing infrastructure gaps in ways which contribute to low carbon and liveable cities. Low carbon and inclusive infrastructure can tackle both local and future challenges of sustainability and equity: *"Paying attention to the environmental impacts of growth is critical for the provision of adequate housing, energy, water, sanitation and mobility needs to people […] in a manner that does not cause major depletion of natural resources or endanger future generations"* (UN-Habitat, 2008). Rethinking housing, sanitation and transport infrastructure in such a light would have significant impact on shaping cities of the future and moving away from 'cities as usual'. This includes affordable solutions in which needs are matched to low-tech and low-carbon solutions. Supporting green industries through fiscal and other policy tools towards innovation across infrastructure sectors provides a key opportunity in support of these goals.

Considerably influencing the way that a city's urban form develops, green and inclusive **transport** infrastructure and services, in particular public transport, are foundations for inclusive green urbanization. Variations between provision and usage prevail in the sub-region: although Pakistan inherited the same aging colonial era railway system as India, it has developed motorised infrastructure for inter-urban and intra-urban travel and left this system underused, despite its greater potential for sustainability gains (Mahbub ul Haq Human Development Centre, 2014). Transport infrastructure is capital intensive and cities in South Asia have, on the whole, not invested enough. Instead, an overemphasis on road construction has encouraged car use, locking in carbon-based transport for decades to come.

Public transport also provides livelihoods for many urban dwellers: in Dhaka, up to 580,000 people are employed in various forms of public transport provision or maintenance. From reducing car use,

enabling access to jobs, opening up impoverished areas to investment and so on, public transport can improve health and bring significant reductions in the vulnerabilities experienced by residents of segregated areas. In India a lack of investment in public transport systems has seen transit ridership drop from 40 per cent of total trips in 1994 to 30 per cent today. For cities to function transit use needs to dramatically change. South Asian cities have some of the worst air pollution measurements in the world as increasing car use is causing health hazards and declining quality of life, not to mention contributing to GHG emissions.

A culture of public transport use also needs to be fostered as many construe public transit as being the reserve of the poor. Indeed, many poor people do not have the luxury of choice in much of South Asia and public transport is often not safe for certain groups, in particular for women. Apart from benefitting the urban poor directly, investments in the public transport sector also imply important economic multipliers and boost the development of green industries.

In a similar vein, greater investment in **housing** would also bring economic multipliers in South Asia. The spatial projection of this very tangible infrastructure gap is manifested in the sub-region's sprawling slums. Over half of the world's slum population is situated in the Asia-Pacific; this constitutes an average of 40 per cent of the region's urban population (UN-Habitat, 2011). The challenges are daunting in South Asia: in Bangladesh three quarters of the urban population live in slum conditions; in Karachi, 8 million people out of the total 16 million live in slums.

Slums reflect and reinforce various forms of exclusion and discrimination in the sub-region. For example, in Jaipur despite only representing 16 per cent of the overall population underprivileged castes make up 61 per cent of the slum population (Mahbub ul Haq Human Development Centre, 2014). The effectiveness of the housing enabling environment is crucial for positively influencing overall supply and affordability, crucial factors for responding to the housing backlog. In India for example, there are still significant hurdles for the buying and selling of land, and formal title