



Economic and Social Council

Distr.: General
19 July 2010

Original: English

Economic and Social Commission for Asia and the Pacific

Ministerial Conference on Environment and Development in Asia and the Pacific

Sixth session

Astana, 27 September-2 October 2010

Item 4 of the provisional agenda

**In-depth review of critical environment and development
challenges and response strategies in Asia and the Pacific**

Emerging challenges in inclusive and sustainable urban development in Asia and the Pacific

Note by the secretariat

Summary

The present document reviews challenges in making urban areas inclusive and sustainable in Asia and the Pacific. The present economic growth and urban development is unsustainable and has led to the urbanization of poverty. Various options are discussed for addressing environmental risks associated with urban poverty, industrial development and mass consumption in order to achieve inclusive and sustainable urban development. Local governments have major roles to play in inclusive and sustainable urban development, and, accordingly, they need to be strengthened. Regulatory, fiscal and institutional environments need to be created in order to foster innovation in technologies and processes.

The Conference may wish to discuss the issues and challenges highlighted, and provide guidance on follow-up actions.

Contents

	Page
I. Introduction	2
II. An urbanizing region in an urban world.....	3
III. Cities as engines of economic growth and social progress	4
IV. Cities and environmentally unsustainable development	6
A. Environmental issues related to poverty.....	7
B. Environmental problems related to industrialization.....	8
C. Environmental problems related to prosperity and mass consumption	10
V. Cities and climate change.....	11
VI. Urban poverty.....	12
VII. Towards inclusive and sustainable cities.....	14
A. Internalizing environmental costs and encouraging sustainable lifestyles.....	14
B. Increasing the eco-efficiency of urban infrastructure	14
C. Addressing poverty-related environmental problems.....	15
D. Climate change adaptation and increasing resilience	16
VIII. Improving urban governance.....	16
IX. Fostering and upscaling innovations	18
X. Conclusions	18

I. Introduction

1. Asia and the Pacific is a vast and diverse region with a total population of 4.1 billion in 2008. It includes population giants and small island States. Overall, the annual population growth rate has declined drastically and is estimated at 1.0 per cent in 2008 for the ESCAP region as a whole. Some countries in the region have reached high levels of economic development. Others are classified as least developed countries.

2. The diversity of the region makes it difficult to make generalized statements. Regional and subregional averages can hide wide disparities in terms of demographic, economic, social and environmental conditions. Nevertheless, many countries of the region have a number of common challenges which require urgent attention. One of these common challenges is urbanization and urban development.

3. Urbanization, economic development, environmental degradation and poverty are closely interlinked. Cities and towns have large, dense and diverse populations, which result in economies of scale and agglomeration and lead to specialization of labour, increases in productivity, innovation and economic growth. Infrastructure and services are cheaper to provide, making urban areas attractive to people in search of higher income and better access to services. Also, goods produced in urban areas have much greater demand elasticity compared to goods produced in rural areas,

making it difficult for rural areas to sustain population growth. Thus, rural-urban migration is caused by both “pull” and “push” factors and may result in a transfer of poverty from rural areas as urban population increase is not necessarily accompanied by employment generation or the development of infrastructure. Economic development has also resulted in deteriorating environmental conditions in Asian cities because the environmental costs of economic development and urban growth have been externalized to a great extent.

II. An urbanizing region in an urban world

4. A majority of the world’s population has been living in urban areas since 2009. This transition is expected to happen in Asia and the Pacific in 2025. At present, about 43 per cent of the region’s population live in urban areas. The region’s annual urban population growth rate is 2.3 per cent. What is unique about urbanization in Asia and the Pacific is its scale and pace. By 2025, it is expected that the region’s population will be 2.3 billion, an increase of about 700 million people in 15 years.¹

5. Urbanization in the region has three components: natural population growth, rural-urban migration and reclassification of rural areas to urban areas. The region’s natural population growth rate is estimated to be around 1.2 per cent, while the urban growth rate is around 2.3 per cent. This indicates that roughly 50 to 60 per cent of urban population growth is due to rural-urban migration and reclassification of rural areas as urban areas.²

6. A recent survey of 26 countries in Asia and the Pacific indicated that a majority define “urban” based on administrative criteria. Most urban population growth is occurring on the periphery of cities and towns, outside such administrative boundaries. Official statistics in many countries may be underrepresenting urbanization levels and growth rates.

7. Another unique feature of urban growth in Asia and the Pacific is the growth of mega-cities, cities with population of more than 10 million. Eleven of the 19 mega-cities in the world are in Asia and the Pacific, including 6 of the world’s 10 largest cities. These mega-cities are often surrounded by extended urban regions that transcend metropolitan administrative boundaries. Such mega-urban agglomerations encompass several urban and rural local governments and sometimes extend over provincial boundaries. The Bangkok metropolitan region, for example has an area of 7,761 square kilometres, with a population of over 10 million, spread over the Bangkok Metropolitan Administration and five surrounding provinces³ while the Jakarta-Bogor-Tangerang-Bekasi region (Jabotabek) has a total population of over 21 million and a land area of 6,418 square kilometres.⁴

8. These urban regions grow along infrastructure corridors, often radiating considerable distances from city cores. As urban development and

¹ United Nations, *World Urbanization Prospects: 2009 Revision*, United Nations, New York, 2010.

² Economic and Social Commission for Asia and the Pacific, *Statistical Yearbook for Asia and the Pacific 2009* (United Nations publication, Sales No. E.10.II.F.1).

³ <http://web.nso.go.th/en/survey/keystat/keystat08.pdf>

⁴ <http://www.unu.edu/unupress/unupbooks/uu11ee/uu11ee15.htm>

urban land uses occur in hitherto rural areas that have lower planning, building and environmental regulations and weaker enforcement capacities, new urban development is often unplanned and haphazard, with closely intermingled industrial, residential, commercial and agricultural land uses and without adequate infrastructure and services. Moreover, as development often occurs along transport corridors, large tracts of land, farther away from the transport corridor, are not developed. This results in “ribbon” or “strip” development, that is environmentally unsustainable and resource intensive. As urban development often extends over several provincial and jurisdictional boundaries, these urban regions pose new economic, social and environmental challenges and require a rethinking of urban planning, management and governance approaches and institutions.

9. Extended urban regions are not only prevalent around mega-cities, but also around smaller towns and cities. Similar urban development patterns are evident, for example, in the Kathmandu valley in Nepal and Colombo, Sri Lanka. Population levels may be lower, but the problems are similar to those of the mega-urban regions.⁵

III. Cities as engines of economic growth and social progress

10. As stated above, there is a direct relationship between economic development and urbanization. In general, countries with advanced economies tend to be highly urbanized while least developed countries tend to have low levels of urbanization. While many countries in the region have a long history of urban settlements, the pace of urbanization increased with increased global trade and opening up of Asian economies, particularly in the 1990s. When countries started opening their markets to global trade and demand for cheap products from Asia and the Pacific increased, cities started to capitalize on the opportunities provided by economic globalization. Coastal cities with ports particularly flourished. Asia started to turn into the workshop of the world. In the beginning, emphasis was on low value added, low technology, high labour intensive industries, such as textiles and garments, to benefit from low production costs, in particular low labour costs. Factories provided employment for semi-skilled workers who often migrated from rural areas.

11. As globalization proceeded, the competition for low value added production became fiercer. Therefore, cities in more economically advanced countries moved to attract manufacturers of higher value added, higher skill production, such as computers and other electronic equipment, the automotive industry, etc.

12. As production processes became more complicated and supply chains and production processes became increasingly scattered, the need for improvements in infrastructure increased to ensure that the right parts arrived at the right time and that production was carried out unhampered. The demand from investors, both local and foreign, for better infrastructure and services led to a shift towards investing in urban infrastructure to make cities more efficient in terms of transport and telecommunication etc. in the late 1980s and the 1990s. This started in East Asia and then moved to South-East and South Asia. However, the pace of investment usually lagged

⁵ Economic and Social Commission for Asia and the Pacific, *Statistical Yearbook for Asia and the Pacific 2009* (United Nations publication, Sales No. E.10.II.F.1).

behind, creating congestion and other inefficiencies. At present, cities contribute around 80 per cent of the region's gross domestic product (GDP). In 2008, the per capita GDP of Ho Chi Minh City, for example, was estimated to be around \$8,100, while the per capita GDP of Viet Nam was \$3,990.⁶

13. Manufacturing is no longer the dominant sector in the world economy. Automation of the manufacturing process has reduced the demand for labour. The service sector has started to dominate the economy in a growing number of countries. Once the workshops of the world, many cities in the Asia-Pacific region are now undergoing a shift towards service industries. Agriculture gave way to industry. Industry is now giving way to the service sector. Furthermore, there is a shift from low value added to high value added activities and from labour-intensive to capital-intensive activities. The shifts from manufacturing to services, from low value added to high value added activities and from semi-skilled to highly skilled work have consequences for urban employment. The share of the service sector has been growing continuously since the 1990s: in 1991, it had a share of 25.8 per cent of total employment, but its share had increased to 36.4 per cent by 2007.⁷

14. Many of the jobs in the service sector are informal-sector jobs. Proliferation of informal enterprises is often a result of the need to be competitive in the global economy. It forces firms to adopt new and flexible forms of employment relations, especially in the service sector, such as those found in call centres and the hiring of retail sector staff. In most of the Asia-Pacific region, the informal economy is an integral part of the urban economy. Rather than competing with each other, the formal and informal sectors are, by and large, integrated through direct and indirect linkages. This coexistence of the formal sector and the informal sector has become a distinctive feature of the economy and the labour market in many Asia-Pacific cities.

15. The size of the informal sector, its contribution to the economy and its influence on urban growth is difficult to measure due to a lack of systematic data collection and analysis. What is clear is that the informal economy is vast and heterogeneous. The sector helps to provide employment for the millions of urban poor who are unable (or unwilling) to have secure jobs in the formal sector.

16. There are several causes for the existence of the informal sector, chief among them are rules and regulations that unnecessarily make it difficult for small and microenterprises to function in the formal economy. It is wrong to assume that informal sector markets are not regulated. They often are: not by the State but by non-State actors sometimes linked to organized crime.

17. Some parts of the informal sector are characterized by low wages, dangerous and insecure working conditions and long working hours. Operating in the informal sector means that employers and workers are easily harassed by law enforcement agents that come to visit not so much to

⁶ www.ukmediacentre.pwc.com/media-library/Global-city-GDP-ranking-2008-2025-61a.aspx, www.economist.com/theworldin/forecasts/country.cfm?d=2008.

⁷ Economic and Social Commission for Asia and the Pacific, *Statistical Yearbook for Asia and the Pacific 2009* (United Nations publication, Sales No. E.10.II.F.1).

enforce the law, but to extract informal payments. Income earned in the informal sector may not be sufficient for the urban poor to pull themselves out of poverty, but it enables them to survive in the city.

18. On the other end of the spectrum are the highly skilled, footloose workers of the financial and knowledge sectors of the service economy. They can work from any other country, and therefore “quality of life” is a premium attraction for them. Companies must be able to rely on a stable political and economic environment, a solid banking system, an adequate regulatory system and strict law enforcement, quality medical facilities, schools, universities, research institutes, hotels, shopping centres, recreational and cultural facilities, etc. Thus, quality of life and urban livability become key parts of the competitiveness of cities.

19. Many cities in Asia are therefore investing in the development of museums, up-market shopping centres, theatres, theme parks, and concert halls as well as the renovation of historic buildings. These facilities will attract not only skilled professionals, but also domestic and international tourists. General tourism and the MICE sector (meetings, incentives, conventions and exhibitions) have become an important source of income for cities and towns in the Asia-Pacific region.

20. Many cities feel the need to modernize in order to compete with world cities. Cities like Singapore and Bangkok risk losing their unique traditions, and look more and more like any other city in the world. With constantly rising land prices, preserving cultural heritage is difficult. Many cities regret too late the losses incurred.

21. Globalization has definitely benefited large sections of the urban population in Asia and the Pacific by providing employment and income. However, there was a price to be paid. In order to keep production costs low, there was a prevalence of lax labour and environmental laws, poor law enforcement relating to the discharge of emissions and the treatment of waste. The impact was not shared equally by the urban population; the poor have borne and continue to bear the brunt of the impact through their low incomes, unhealthy working conditions and poor living conditions.

IV. Cities and environmentally unsustainable development

22. Asian cities are facing three broad types of environmental risks. The first category of risks is associated with poverty. The second with industrial development and the third with prosperity and mass consumption. Bai and Imura⁸ developed an analytical framework to describe environmental evolution of cities. They distinguished four stages of urban-environmental development: poverty stage, industrial development stage, mass consumption stage and finally sustainable city stage.

23. The driving forces behind the poverty related stage are high levels of rural-urban migration, low per-capita income, the inability of local government to manage its urban resources, and insufficient investment in urban infrastructure. As a result, large sections of the urban population live

⁸ Xuemei Bai and Hidefumi Imura, “A comparative study of urban environment in East Asia: Stage model of urban environmental evolution”, in: *International Review for Environmental Strategies*, vol. 1, No. 1, 2000, pp.135-158.

in low-quality housing, in slums and squatter settlements without access to adequate water supply and sanitation. Because of the poor environmental conditions, residents are vulnerable to infectious diseases. The impact of this type of problems is usually local, and often limited to the city.

24. Environmental problems associated with the early stages of industrialization and economic growth include air pollution by industries and transport, particularly of sulphurous oxides and particulate matter and water pollution by heavy metals and industrial solid waste pollution. Driving forces behind these problems are rapid industrialization, a prioritization of economic growth over environmental management, the application of outmoded or obsolete technologies, a lack of environmental emission control and poor enforcement. The spatial range of impacts of this category of risks are local as well as regional, as pollution spreads to soil, water and air beyond the city.

25. Urban environmental issues associated with prosperous lifestyles, based on mass production, mass consumption and mass disposal relate to rapid and unsustainable consumption of natural resources, particularly energy, water and food, as well as large-scale pollution and waste generation. The impact of this category of risks is not just local, but is regional and global.

26. The authors noted that some East-Asian cities underwent these stages sequentially. For most Asian cities, the cycles of these stages have shortened to such an extent that for all practical purposes they are occurring simultaneously, often affecting different sections of the population and different parts of the urban agglomeration. Cities and urban regions are rarely homogeneous and different sections of the urban population face different sets of environmental problems. Many urban residents live in extreme poverty despite rapid economic growth and are excluded from the benefits of urban development. Elsewhere in the city, the rich and the highly skilled middle classes, demanding better lifestyles, indulge in mass consumption and pollution, while others are moving into subdivisions or working and living in buildings that are eco-efficient and sustainable. At the same time, industrial production continues, but may be moved out from the city core to the periphery, along transport corridors, in areas where rural, residential land uses are interspersed with industrial land uses and where environmental regulations are still lax.

A. Environmental issues related to poverty

27. Poverty-related environmental problems are caused by inadequate environmental infrastructure and services, in particular for the urban poor, and the poor maintenance and repairs of infrastructure that exists. Most urban residents in the Asia-Pacific region now have access to improved sources of water, but the quality of the water supply can vary significantly, and water might be available only for a few hours a week. Often the issue is not the availability of water but the high levels of water unaccounted for due to leakage, theft and corruption.

28. Few cities in Asia and the Pacific have city-wide sewer systems. Many houses and commercial buildings therefore rely on on-site treatment. Septic tanks used to treat domestic wastewater are often not built to specifications and are often not properly maintained. In informal settlements, most households do not build septic tanks, because of the cost

and the lack of security of land tenure. As 35 per cent of the region's urban population lives in such settlements, the impact of their untreated waste is tremendous.

29. In most Asian cities, solid waste generated by households is relatively limited, but if collection services do not operate efficiently and timely and do not cover the entire city or town, solid waste piles up in the streets and this affects the living conditions in the area. Without a regular collection service, residents either burn their waste, causing local air pollution, or throw their waste in the river or the drains. Solid waste in the drains blocks the flow of water during rains and can lead to flooding of the neighbourhood.

30. Due to a resource scarcity, the poor are often involved in separating recyclables from urban wastes. Some estimates have shown that around 20 to 30 per cent of urban waste is recycled by informal sector waste pickers, itinerant collectors, junk dealers and recycling enterprises.⁹ However, that still leaves around 60 to 80 per cent of the waste, which is organic untreated. This untreated solid waste is dumped either in open dumps or controlled landfills and causes surface and groundwater pollution, spread of vector-borne diseases and annually emits around 75 to 100 million tons of carbon dioxide in the atmosphere.¹⁰

31. Many poorer residents of Asian cities walk or use bicycles, motorcycles or rickshaws to move through the city, vendors will use push carts to reach their point of sale, while the informal sector may even use animal-pulled carts to take goods around the poorer cities and towns. The use of privately owned vehicles is mixed with different means of transport leading to traffic congestion, with all its consequences for the quality of the air.

B. Environmental problems related to industrialization

32. Environmental problems caused by industrial production are particularly acute in the early stages of urban economic development. Cities and towns in developing countries that attract foreign direct investment in low value added industries are often reluctant to tighten their environmental regulations or will only selectively enforce them, if they have such regulations. Due to construction, industrial activities and vehicular air pollution has increased. Usually, high concentrations of particulate matter have been controlled in most cities as it is visible air pollution that affects all. However, it remains high in many cities. During the Summer Olympics in Beijing, the government shut down several factories to curtail visible air pollution and smog.

33. Most Asian cities have been unable to control air pollution caused by vehicles, whether private or public. In many cities, the proportion of older, less efficient vehicles is quite high and the political will to control

⁹ Economic and Social Commission for Asia and the Pacific, "Overview of solid waste management in Asia and the Pacific", Regional Workshop on Decentralized and Community-based Solid Waste Management, United Nations, 2007.

¹⁰ Ibid.

their emission is quite low.¹¹ Urban air quality, therefore, continues to be an important developmental problem in Asia and the Pacific. The sources of air pollution in cities include: transport, power generation and other forms of industry, both large and small scale, open burning, road dust and construction.¹²

34. Coal is still used in heavy industries and for electricity production in large cities like Beijing, Delhi, Seoul and Shanghai and is a major factor in air pollution in these cities. The open burning of domestic and industrial waste is common in some cities, including Jakarta, and is also a significant contributor to air pollution. Forest fires are yet another significant source of air pollution in a number of cities in South-East Asia. Not only does pollution from fires cause public health issues, it also affects the performance of local economies.

35. Many cities in Asia and the Pacific have large wetlands. Today, these waterbodies are all heavily polluted by wastewater and solid wastes and are being filled up for real estate development purposes. The unplanned development of the cities and the disappearance of wetlands often result in flooding during the monsoons. The flooding is also caused by the obstruction of storm water drains and canals by squatter settlements built on their banks and the dumping of solid waste into the drains and canals.

36. As cities and towns expand, infrastructure rarely keeps pace with the growth of urban areas. Consequently, there may not be sufficient water to meet the needs of the domestic and the industrial sector and if there is sufficient water, the water supply network may not immediately reach the outlying areas. Industry in the urban periphery may pump ground water to ensure a steady supply. Excessive pumping of groundwater can lead to land subsidence, which can damage buildings and result in flooding. Subsidence is a problem in cities such as Shanghai, Jakarta and Dhaka.

37. Current water resources for Asian cities are becoming severely depleted. A country can be considered to be water-scarce if total withdrawals are greater than 40 per cent of annual water resources. A study in 18 Asian cities by the Asian Development Bank found that most were drawing more than 60 per cent of the annual replenishment of water; in Chengdu and Shanghai in China, it was greater than 80 per cent.¹³ Many cities are rapidly running out of potable water to service their growing populations. For many cities located on rivers, one city's wastewater becomes another city's waste supply. Heavy metals and other industrial pollution and water-borne disease from municipal wastewater discharge generate major health problems. Urban soils in cities of the region are being altered structurally and functionally by human activity. They are becoming increasingly contaminated by heavy metals and chemicals produced by industrial wastes and uses. The full extent of urban soil degradation in Asia and the Pacific is unknown, but many older cities have large areas of land

¹¹ Hayashi, Yoshitsugu, Kenji Doi, Masaharu Yagishita and Masako Kuwata, "Urban Transport Sustainability: Asian Trends, Problems and Policy Practices", *European Journal for Transport and Infrastructure Research*, Vol. 4, No. 1, 2004, pp. 27-45.

¹² United Nations Environment Programme (UNEP) and Clean Air Initiative (CAI) Asia, "Background Document on the Long-Term Vision for Urban Air Quality in Asia" (Manila, 2008).

¹³ Asian Development Bank (ADB), *Water in Asian Cities: Utilities' Performance and Civil Society Views*, Asian Development Bank, Manila 2004.

where the topsoil is contaminated. Urbanization is also having a devastating effect on vegetation and wildlife, leading to the loss of biodiversity in Asian cities.

38. Electricity generated for rapidly expanding cities and towns may not be sufficient to ensure adequate supply at all times, leading to brown-outs and black-outs, which cause serious losses for the economy. The *Pakistan Economic Survey 2009-10* estimates that load-shedding (power cuts) cost the national economy 2 per cent of GDP in the year surveyed.

C. Environmental problems related to prosperity and mass consumption

39. Mass consumption results in environmental problems in solid waste, transport, energy and urban planning and design. With increasing income and prosperity, the volume of solid waste generated by cities grows. In many cities, the management of solid waste and the disposal of sanitary and industrial waste disposal have not been well developed due to technical and financial constraints. Most cities and towns in the region have environmental legislation and policies related to solid waste collection and disposal, but in the lesser-developed countries these are often poorly enforced.

40. Rapid motorization tends to outstrip the expansion of the road network. Due to a lack of convenient public transport modes, economic growth and increases in income lead to a rise in car ownership and road transport demand. A lack of road supply and reliable public transport cause severe traffic congestion.

41. Many cities lack a long-term public transport vision and a strategic planning and coordination capacity. Independent government agencies and private companies operate different parts of the public transport system. This often makes coordination and integration of different modes of public transport difficult. As a result, even if a mass transit system exists, feeding the system through other modes of public transport is a problem. In other words, once committed to a transport policy centred on the private car, governments change course slowly.¹⁴ An urban transport policy is critically important for urban environmental management as well as climate change mitigation. As a private vehicle typically consumes more than twice the energy per passenger per kilometre than a train, and almost four times that of a bus, the implications for energy use and pollution of an urban layout that does not maximize public transport are likely to be very significant.¹⁵

42. Energy use in Asia-Pacific cities is not well documented. In many cities, data about the nature of the energy standards of buildings, daily travel patterns, and energy consumption are not routinely collected. In cities with large sections of the population living in informal settlements, the lack of data is likely to be acute.

¹⁴ David O'Connor, "Grow Now/Clean Later, or the Pursuit of Sustainable Development?" Working Paper No. 111, Organization for Economic Cooperation and Development, Paris, 1996.

¹⁵ Koen Steemers, "Energy and the city: density, buildings and transport", *Energy and Buildings*, No. 53, pp. 3-14, 2003.

43. Energy use depends to a large extent on the type of city and its form. Urban spatial structure and urban functions affect energy use as they influence the demand for mobility of urban dwellers. Mixed land use (residential-industrial and residential-commercial) result in a different energy use than segregated land uses. Urban zoning policies and industrial relocation from city centres to peri-urban areas in Asian cities significantly influence travel demand and energy use. Because of a lack of infrastructure, many cities grow along major roads without infill of the area between the roads due to a lack of access. This “ribbon” development increases the costs of infrastructure development and increases commuting times for residents because of traffic congestion.

44. In order to create a world-class city that can compete with other cities, architects and real estate developers tend to build modern glass-and-steel structures that are identical the world over. The buildings have their own indoor climate and are largely isolated from the outdoor environment. Building-related technologies such as air conditioners, district heating and cooling systems, insulation systems and other energy management systems for buildings have significant effect on energy use. Cities in the region are experiencing considerable urban heat island effects due to this type of urban development. The urban heat island refers to the phenomenon of higher atmospheric and surface temperatures occurring in urban areas than in the surrounding rural areas.

45. As cities provide as much as 80 per cent of GDP, unsustainable urban development has made the economies of countries vulnerable to global shocks such as rapid rise in fuel and food prices. It has also reduced the resilience of these economies and societies.

V. Cities and climate change

46. Another major threat confronting urban settlements in the Asia-Pacific region is the impact of climate change. The size, location and elevation of Asia-Pacific cities make them especially vulnerable to the impacts of climate change in the form of frequent extreme weather events such as droughts, floods, cyclones and heat waves.

47. Although climate change affects different places in different ways, urban areas will be especially vulnerable, because of the high concentration of people, the high thermal mass of buildings and the relatively low vegetation cover. Climate change will reduce the supply of clean water and the area of productive land and it will expose cities to an increased risk of storm damage and flooding.

48. Most of the cities in the tropical and subtropical climate zones are low-lying and prone to severe flooding and storm damage. Climate change is expected to bring about a significant rise in sea level. An estimated 54 per cent of Asia’s urban population lives in low-lying coastal zones.¹⁶ Particularly vulnerable are cities in deltas and low coastal plains. Much of their area would be inundated by even a small rise in sea level. The relocation of eco-refugees will be a significant challenge, requiring the building of new urban settlements that will further reduce the land available

¹⁶ UN-HABITAT, *State of the World’s Cities Report*, 2008-2009, UN-HABITAT, Nairobi, 2008.

for food production. In some Pacific island countries, entire populations, both rural and urban, will need to be relocated.

49. Many impacts in rural areas will affect urban populations. The loss of agricultural land due to climate-related impacts such as floods and droughts will affect food security in cities. Predictions suggest a significant impact on food security in India and China as desertification increases. As is often the case, the impact of environmental degradation and climate change will affect the urban and rural poor disproportionately. Actions to protect the environment and actions to reduce poverty cannot be separated.

VI. Urban poverty

50. Despite rapid economic growth and some efforts to foster social development, rural and urban poverty remains a serious problem in the region. Some countries have made major advances in the reduction of poverty, but others are lagging behind in this respect. In China, poverty declined from 60.2 per cent in 1990 to 15.9 per cent in 2005, brought about by rapid growth of the economy. Pakistan also brought down its poverty levels from 64.7 per cent in 1991 to 22.6 per cent in 2005. Mongolia, on the other hand, saw poverty increase from 18.8 per cent in 1995 to 22.4 per cent in 2005.¹⁷

51. On average, urban residents have better living conditions than the rural population, because of the wider availability and better quality of basic services from the public and private sectors. However, aggregate statistics do not reflect the realities of urban poverty. Where urban health indicators can be disaggregated by different parts of the city or town, data show that large numbers of people in Asia-Pacific cities, in particular those living and working in the informal sector, are in poor health due to income poverty, a poor diet, cramped and unhygienic living conditions, unsafe working conditions, polluted air, the use of contaminated water and inadequate sanitation facilities.

52. In this respect, it is important to understand that poverty is not just a lack of income. Poverty is also a lack of access to basic services, ranging from water supply and sanitation to education and health care, and a lack of influence in decision-making that affects lives and livelihoods. These aspects of poverty are also closely interrelated: inadequate water supply and sanitation lead to poor educational results and poor health, which in turn affect productivity and the ability to earn an adequate income. Often, exclusion is linked to the status of the person as a rural-urban migrant, a resident of an informal settlement, a member of an ethnic group.

53. A very visible aspect of urban poverty in cities in Asia and the Pacific is the proliferation of slums and squatter settlements. Land in urban areas is under pressure as a result of economic growth and population increases. High demand for land by private companies for offices or production centres raises the market prices of land. Employment of the poor is linked to places with intensive economic activities, but land in such locations is beyond their reach, if housing is at all allowed in those locations.

¹⁷ Economic and Social Commission for Asia and the Pacific, *Statistical Yearbook for Asia and the Pacific 2009* (United Nations publication, Sales No. E.10.II.F.1).

54. Few countries in Asia and the Pacific have set aside land for housing the poor. Most see land as a commodity of which the freehold title or the use right can be bought and sold on the free market. This leaves the poor only two options: commuting from a faraway place where land is affordable, which is often too expensive in time and money, or the unauthorized occupation of vacant land and the development of slums. Housing of the poor often also develops in places unfit for habitation due to environmental conditions. Around 35 per cent of the region's urban population lived in slums and squatter settlements in 2005.¹⁸

55. Access to safe and reliable water supply and sanitation is critical for health, social status, dignity and basic security, in particular for women and children. According to official statistics, 96.4 per cent of the urban population in the region had access to basic levels of safe drinking water supply in 2008.¹⁹ Official statistics do not take the quality or quantity of the water supplied into account. For the poor, access is often through public stand pipes where water comes for only a few hours per day, often resulting in long waiting times and the need to store water in the house, which may affect its quality. Moreover, an intermittent supply of water can lead to contamination of the water in the pipes due to a decline in pressure. Only 66.1 per cent of the urban population in the Asia-Pacific region has access to safe sanitation, while 8.0 per cent of urban residents in the region have to resort to open defecation, which poses health hazards in addition to being an affront to human dignity.²⁰

56. Because land and housing near employment opportunities tend to be costly, affordable transport to take the poor from the places where they can afford to live to places where they work is another important urban service. Most current transport systems in Asia-Pacific cities do not take account of the specific needs of the poor. As many transport services in the region have been privatized, transport fees need to recover costs rather than to ensure that low-income people can move from one place to another. As a result, low-income households cannot afford to live in the urban fringe where land and house prices are lower, because of high transport costs.

57. Access to modern and sustainable energy services is critical for the poor to participate in the urban economy and to improve living standards. Inadequate energy supply may affect the opportunity for children to study at night. It also affects the ability of the urban poor to undertake income-generating activities at home or at workshops in informal settlements. Families without access to electricity or gas may turn to coal or charcoal, with negative environmental impacts, both within the house and outside.

58. Along with rapid economic growth, inequality is rising in Asia and the Pacific. Urban development is largely driven by local, national and international companies in and around particular urban centres. Rising inequality is attributed to policies which focus on growth by promoting market liberalization, economic and political stability, foreign direct investment and the development of economic infrastructure. The consequences are cities and towns with highly skilled workers employed in

¹⁸ Ibid.

¹⁹ Joint Monitoring Programme for Water Supply and Sanitation (JMP), Progress on Drinking Water and Sanitation, World Health Organization and United Nations Children's Fund, New York and Geneva, 2010.

²⁰ Ibid.

the knowledge-based economy on the one hand, and low-income workers employed in the large informal-sector economy. The latter earn enough to live in the city as long as they can find housing in informal settlements with inadequate infrastructure and can buy food, water and transport from the informal sector. What are lacking are mechanisms which enable the poor to benefit from the economic growth and make the process of economic growth in the region less exclusionary.

VII. Towards inclusive and sustainable cities

59. As stated above, cities in Asia and the Pacific face environmental problems associated with poverty, industrialization and mass consumption. To realize the next stage of inclusive and sustainable cities, adopting inclusive green growth approaches would be crucial. Moreover, with the threat of climate change looming, active steps are needed to address it.

A. Internalizing environmental costs and encouraging sustainable lifestyles

60. One of the key reasons for the lack of ecological efficiency in Asian cities is that environmental costs have been externalized. Policies need to be introduced to charge the right costs of providing natural resources, particularly water and energy. This can be done through measures such as progressive pricing, which actively subsidize the poor and penalize overuse and wastage. For example, in providing water, a reasonable level, necessary to meet basic needs, could be provided for free, while more intensive use or wastage could be charged progressively higher. Similar policies could be enacted in providing electricity.

61. Internalizing the environmental costs of natural resources, particularly energy and water, would considerably reduce overuse and wastage. Increased social marketing and education campaigns, particularly in partnership with civil society and private businesses, would be crucial to promote a more sustainable lifestyle. Examples of such campaigns abound in the region and lessons can be learned from the more successful ones.

62. There would be short-term costs to internalizing environmental costs. However, long-term benefits would outweigh the short-term costs. Governments need to enable markets to take the long-term benefits into account with the right regulatory and fiscal incentives. Moreover, such measures, if undertaken unilaterally may make goods and services from a country less competitive. Governments may need to find the right balance in maintaining short-term economic competitiveness vis-à-vis long-term sustainability.

B. Increasing the eco-efficiency of urban infrastructure

63. Penalizing the overuse and wastage of natural resources, particularly water and energy infrastructure, would encourage businesses and households to conserve resources and adopt eco-efficiency measures. Actively making urban infrastructure, particularly water, transport and buildings, more eco-efficient would also reduce the carbon footprint of the city without unnecessarily affecting the poor. This would require short-term investments to maximize long-term gain and governments would need to take the lead.

64. Eco-efficiency strategies include increasing energy efficiency of buildings through improved designs, increased natural lighting and air circulation, using low energy lighting, improving insulation and the use of low intensity fuels. Governments need to invest in smart grids and enable micro and decentralized production of energy from renewable sources particularly waste to energy projects.

65. Increasing the eco-efficiency of urban transport systems is important. Strategies in this sector include investing in mass transit systems rather than individual transport system; taxing private and older vehicles at a higher rate; promoting non-motorized transport modes, particularly walking and bicycling and promoting the use of cleaner fuels. A related action is improving urban planning, including loosening zoning restrictions to allow for more mixed land-use; increasing densities in high-income areas; ensuring green and public spaces and ensuring that cities and neighbourhoods are walkable. In addition, promoting improved land development in the urban periphery is important to avoid ribbon development along transport corridors. Governments can adopt approaches such as land readjustment and guided land development.

66. A key eco-efficiency action is promoting eco-efficiency of the water delivery system by minimizing unaccounted for water in the urban water supply system, promoting rainwater harvesting, water recycling and reuse. Treating urban wastes more effectively by recognizing the 3R approach and “trash is cash” approaches would go a long way towards increasing eco-efficiency. When treating solid wastes and wastewater, cities should use approved UNFCCC methodologies to enable them to access carbon financing.

C. Addressing poverty-related environmental problems

67. The poor cannot benefit from economic growth unless they have access to services and infrastructure that enhance their capabilities to seize new opportunities. Governments need to reform policies that actively seek to exclude the poor from accessing infrastructure and services. There are several examples from the region where, in partnership with the civil society, the poor have organized themselves into collective mechanisms to access infrastructure and services. The Baan Mankong Programme in Thailand, the Mahila Milan and SEWA approaches in India, the Orangi Pilot Project in Pakistan are good examples of how, when organized, the poor can provide for their own housing, environmental infrastructure, access health and education facilities and negotiate their roles and rights in the city with other actors.

68. However, the poor cannot do this by themselves. Governments and civil society must play a facilitating and organizing role, respectively. There are several modalities for determining the roles of government, communities and civil societies. One such approach adopted in Pakistan and Thailand is the concept of internal and external development. Under this approach, communities, organized by non-governmental organizations, provide for infrastructure and services within their own settlements, while the government is responsible for providing bulk infrastructure and services that communities cannot provide for themselves. A key policy reform in this context is that of urban land use. The commoditization of urban land must be balanced by the recognition that the land is a public and

environmental good. Restrictions need to be imposed on the use of land solely for economic purposes.

D. Climate change adaptation and increasing resilience

69. While internalizing ecological pricing and the eco-efficiency of urban infrastructure, businesses will address mitigation concerns through a co-benefit approach. In other words they should adopt policies that are good anyway and, as a co-benefit, will also reduce greenhouse gases. Countries should adopt adaptation measures that they would not regret if the intensity of a disaster is weaker than expected. Such approaches should be cost-effective and serve the purpose of increasing resilience to shocks other than climate change.

70. Key among such measures is the integration of disaster management in urban planning, including mapping of vulnerable zones in towns; preparation of city-wide and community disaster management plans that include designation and construction of safe and secure emergency buildings. As many Asian cities are prone to floods, flood prevention measures such as improved natural drain management, improved collection of solid wastes that clog natural drains and streams and wetland preservation and development would be essential approaches for climate change adaptation in cities. Another area for adaptation actions is the promotion of urban greening and food security through such measures as promotion of urban agriculture, vertical gardens and “edible landscapes.”

71. Recovery from natural disasters often requires ready access to finance. Promotion of insurance against disasters among the private and public sectors would be needed. As the poor would be most affected by climate change, in addition to ensuring improved housing conditions through slum and squatter settlements upgrading, community-based savings and credit schemes, safety nets, and microinsurance schemes would be needed to increase their resilience to climate change.

72. Increased focus on urban health management, particularly improving access to emergency health facilities including trauma and injury treatment and controlling of vector-borne diseases, such as dengue, malaria and cholera, would be important in the immediate aftermath of climate change-related disasters.

VIII. Improving urban governance

73. As discussed above, the challenges and strategies facing cities and towns of Asia and the Pacific are closely interrelated. Eco-efficiency and internalizing ecological costs will directly contribute to climate change mitigation and adaptation. Investing in slum upgrading and introducing community-based savings and credit system in poor communities would not only increase their resilience to climate change but it would also reduce their poverty and enable them to benefit from economic growth.

74. Addressing these interconnected challenges requires greater coordination and integration of government institutions that look at cities and human settlements systemically. To ensure that the poor and other marginalized groups are not excluded, more inclusive and participatory governance systems are necessary. Finally, in an uncertain future, more

adaptive approaches to managing cities are needed so that people can quickly learn from previous experiences and the experiences of others and adapt those lessons to current circumstances.

75. Government institutions are usually organized on a sectoral basis. They often do not coordinate with each other or the local government responsible for managing the urban area. Moreover, urban areas often extend along transport corridors, often crossing several local government boundaries. This can mean several national, provincial and local agencies involved in managing an urban agglomeration, often at cross-purposes with each other. This not only makes the functioning of government opaque, it also makes it less adaptive as there is little systemic learning and response to changing situations is often too slow.

76. Moreover, officials of national and provincial line departments are often not answerable to the local populations they serve but to their superiors at the national level. This further erodes incentives to collaborate and coordinate with each other and to be accountable to either the local government or to the people of that area. Achieving sustainable development of urban areas would require strong local governments that can coordinate various sectoral departments of government and to identify and develop synergies from collaborative actions. This would require strengthening local governments through devolving executive and financial powers and building their capacities to execute their current responsibilities as well as their added responsibilities. It also means strengthening of civil society to ensure that local governments are accountable. Without these three elements, decentralization is unlikely to contribute to inclusive and sustainable urban development.

77. Decentralization needs to be done with the principle of subsidiarity in mind. Subsidiarity means that functions and activities that can be done at a lower level should not be done at a higher level and vice-versa. Thus, what communities can do should not be done by local governments and what local governments can do should not be done by higher levels of government.

78. However, there are functions that local governments, particularly in extended urban regions, cannot do across jurisdictional boundaries. These should be done by a higher-level government institution. A good example of such an institution is the Metro Manila Authority which handles functions such as urban transport, which individual local governments constituting the Metro-Manila agglomeration are ill-suited to do individually.

79. Decentralization and strengthening of local governments has been advocated at least since the early 1990s. Many governments have taken steps to undertake this. India and the Philippines have passed constitutional amendments recognizing this third tier of government. However, many of these efforts have been half-hearted. Where functions have been devolved fiscal powers have been retained by the central government as a means of controlling local government. Investment in capacity development of local governments has also not been made in many countries. Moreover, where local government functions and fiscal powers have been devolved and some attempt at capacity development has been made, the benefits of decentralization have been captured by the local elite, with some local governments virtually becoming family fiefdoms, because of a lack of

transparency and the absence of a vibrant civil society that can keep government accountable.

80. Strengthening civil society to hold government accountable requires access to actionable information. This is usually not available, or even if it is available, it is in forms that are not easily understandable by the general public or even by policymakers. Civil society organizations such as the Urban Resource Centre, Bombay First and Bangkok Forum perform a very valuable function of collecting and analysing information and mobilizing action around that information. New information technologies such as Facebook, Twitter and Flickr can facilitate civic action. In the aftermath of the recent riots in Bangkok, over 10,000 people turned up to help the local government clean up the affected area. The whole programme was organized through Facebook and Twitter.²¹

81. Civil society activism combined with judicial activism has forced many local governments to clean up or increase the eco-efficiency of their infrastructure. Examples of such actions include converting public transport vehicles to natural gas in New Delhi and the lawsuit filed by communities around Maptaput Industrial zone in Thailand that halted the construction of potentially polluting industries because they had not acquired environmental impact assessments.

IX. Fostering and upscaling innovations

82. While cities are key contributors towards unsustainable development of countries of the region, solutions to urban problems will also come from cities because they are centres of knowledge and technological and process innovations. The region is full of innovative technologies, approaches and practices that show the way towards an inclusive and sustainable future. The challenge is to systematically identify, document, analyse, adapt and upscale such innovative solutions. This would require creation of a fiscal, regulatory and institutional environment that allows individuals, businesses, communities and civil society organizations and even government agencies to find innovative solutions. It would also require research and training institutes to identify and analyse the reasons for their success and to assist governments in upscaling such practices.

83. As a regional commission that is fast becoming a hub for knowledge and policy advice, ESCAP can assist member countries in identifying, documenting, analysing and replicating innovative practices and policies. It can also provide technical advice and support to assist countries in upscaling such practices.

X. Conclusions

84. The challenges of the sheer magnitude and pace of urbanization, unsustainable and exclusionary economic and social development of urban areas and impending impacts of climate change facing countries of Asia and the Pacific are indeed daunting and the chances are that urban conditions will become worse before improving. However, there is no need to be overly pessimistic or apocalyptic about the future of cities in Asia and the

²¹ *Bangkok Post* Editorial, 20 June 2010.

Pacific. Policy directions for achieving inclusive and sustainable urban development are crystallizing.

85. To reach the fourth stage of inclusive and sustainable cities, governments of the region need to adopt inclusive green growth approaches that include resilience to climate change. These approaches include:

(a) Internalizing environmental costs by introducing fiscal and regulatory measures that actively subsidize the poor and penalize overuse and wastage of natural resources;

(b) Encouraging sustainable lifestyles by undertaking social marketing and education campaigns in partnership with civil society and private businesses to promote a more sustainable lifestyle;

(c) Increasing the eco-efficiency of urban infrastructure through fiscal and regulatory measures that provide incentives for businesses to conserve resources and adopt eco-efficiency measures;

(d) Taking the lead in enabling and investing in eco-efficient infrastructure, including green buildings, smart grids, waste to energy projects, mass transit systems, water conservation, resource recovery from urban wastes, etc.;

(e) Improving urban planning, including loosening zoning restrictions for mixed land-use; increased densities in high-income areas; increasing green and public spaces, walkable neighbourhoods and avoiding ribbon development in the urban periphery;

(f) Addressing poverty-related environmental issues by giving a voice to the poor in urban decision-making and by replicating and upscaling successful pro-poor, environmentally sustainable and resilient approaches that are based on community organization and empowerment;

(g) Increasing resilience to climate change of cities and communities by adopting “co-benefit” and “no-regret” approaches that include integrating disaster management into urban planning; strengthening flood prevention measures; promoting urban greening and urban agriculture; strengthening the economic and social resilience of communities, particularly those of the poor; and strengthening urban health management to increase access and control vector-borne diseases.

86. In implementing these policies, governments would need to strengthen governance at the local level by using the principle of subsidiarity and by increasing the ability of local governments to adopt systemic approaches and adopting increasingly inclusive and adaptive approaches to governance. Investments would have to be made in strengthening local government capacities and in devolving executive and fiscal powers to the local level. The role of civil society in holding local government accountable would be crucial in the process of decentralization.