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IAP Statement on Implications of Urbanization in Low- and Middle-Income Countries

In recent years, urban development in low-and middle-income countries (LMICs) has been the subject of serious discussion at the international level. In 2015, UN Member States adopted 17 Sustainable Development Goals (SDGs) among which SDG#11 was specifically about the sustainability of cities. In the following year, the outcome of the UN's Habitat III conference on a 'New Urban Agenda' was endorsed in its entirety by the UN General Assembly. Those two international events bind all countries globally to be cognizant of and to promote these recommendations. Even earlier, in 2012, population growth coupled with unplanned urbanization was recognized as being among the most serious concerns worldwide by the InterAcademy Partnership (IAP, 2012).

The word 'urbanization' can have different interpretations. The interpretation here relates mainly to the migration of rural residents to urban areas and the growth of urban populations relative to that of rural populations in any particular country. Urbanization was associated with industrialization in 19th Century Europe and often resulted in economic growth experienced by those countries. Later, the mechanization of agriculture provided a further impetus towards urbanization. Thus, in the popular understanding of urbanization within LMICs, economic growth has come to be closely associated with urbanization. However, the economic conditions that spurred urbanization in the Western World are not the same as those causing urbanization in most LMICs today. A significant conclusion in an earlier IAP Statement (IAP, 1996) is that: "*As urban populations multiply, older technologies and practices – previously appropriate to settlement development – will not necessarily be the best solutions to these problems…*".

The Urbanization Process in LMICs

Today, urbanization is happening almost exclusively in the LMICs. It can bring about significant positive dividends in terms of access to clean water, sanitation, more education and health opportunities (especially for women) and longer lifespans for all, but these dividends are not guaranteed. When the process is mismanaged as often happens, it results in serious inequity, social unrest and the rapid growth of informal settlements. Thus, policies dealing with urbanization along with appropriate planning instruments, processes and stronger urban management, are all deemed to be necessary to reduce the socioeconomic gaps that have steadily increased in LMICs. Framing relevant policies for LMICs requires a clear understanding of the origins, development and intricacies of the urbanization process currently being experienced.

A reliable prediction is that by 2035 all ten of the fastest growing cities in the world will be in sub-Saharan Africa (Uganda National Academy of Sciences, 2018). A relevant statistical study in an Asian LMIC (Datta, 2006) concludes that urbanization:

- induces growth of the largest cities;
- occurs often without industrialization;
- is mainly a consequence of demographic explosion and poverty-induced rural-urban migration;
- encourages the growth of informal settlements; and
- occurs more because of 'rural push' than 'urban pull'.

This interminable 'distress migration' directed often towards 'Primate Cities'[1], which have inordinately large populations, causes severe strains on the access to urban services and results in diminishing the quality of life for all urban residents in those cities. Other causes such as the exploitation of available natural resources have also encouraged urbanization in some countries. This has led to urbanization impacting new urban areas in proximity to such sites[2]. Land rent speculation associated with colonial and post-colonial land management regimes have also led to uneven urbanization with negative outcomes for the poor. Today, urbanization is taking place in many ways in a number of LMICs[3]. Most of these increases in urban populations are centered in overcrowded and underserved informal settlements. These residents are in effect part of an 'informal city', which functions independently from and in parallel with the formal city (Roy, 2005). Even two decades ago, it was estimated that one billion people, or one in three urban dwellers, lived in these informal settlements (UN Habitat, 2003).

From the spatial point of view, many LMICs, especially the smaller agrarian countries, have some startlingly common characteristics. One is a skewed distribution pattern of towns referred to as 'dendritic distortion'. Another is 'primacy' where one city very substantially predominates over all other urban places in that country. The third is the presence of extreme poverty in some of their geographic regions. These latter are different from 'lagging regions' found in some industrialized countries. These impoverished regions often had resources but were not of interest to the respective colonial economies. Thus, colonial investments and built infrastructure were focused elsewhere. The prolonged neglect of such areas within these LMICs caused their extreme poverty.

The key similarities common to the LMICs in their dense urban contexts may be summarized as:

- inequality of access to social and other infrastructure, services and to housing;
- strong residential segregation, deepened by deficient public transportation systems;
- the existence of several forms of informal and often illegal systems of land occupation associated with housing scarcity;
- inadequate land-use management; and
- the inability of most urban local authorities to deal with these complex issues.

Also, there are some LMICs that also have other concerns in their urban areas which need to be recognized. These include:

- intense national population growth, including but not limited to urban areas;
- very high population densities within such urban areas;
- unsatisfactory housing units often

1 A 'primate city' is one that is disproportionately larger than the next city in rank in that country.

2 Apartheid South Africa, colonial Rhodesia (North & South) and Nyasaland had restrictions imposed on family members residing in rural areas on joining their spouses working in the cities. 'Independence' and removal of these restrictions saw a marked increased urbanization in these countries.

3 Between 1950 and 2018 the urban populations of: Africa increased from 33 million to 548 million; Asia increased from 246 million to 2.3 billion; and Latin America and the Caribbean increased from 70 million to 526 million (UN/DESA, 2019).

with poor sanitary facilities and waste disposal systems;
- authoritarian political processes and inadequate social participation in planning decisions;
- large primate cities and weak urban networks; and
- limited autonomy, power and resources within urban local authorities and also poor vertical coordination on relevant national issues and policies.

Planning Approaches and Theories

A planning approach developed to guide rapid urban expansion in Britain more than a century ago (Howard, 1985) persists as a model still used in some former British colonies, although there is no evidence of its effectiveness in diminishing the current adversities of urbanization. The consequent inexorable expansion of informal settlements and the unsustainable growth of car-dominated low-density and expansive developments have become the urban realities in most LMICs. The application of exogenous development models is discouraged by knowledgeable planners and scholars in India (Shaw, 1985), Pakistan (Kugelman, 2014), Africa (Pieterse, 2014; Myers, 2011) and Latin America (Rojas, 2003; Díaz-Márquez, 2019). Important inadequacies in urban planning as practiced in LMICs have been thoroughly discussed elsewhere (Belsky *et al*, 2013).

An important study based on the continuing current trend of horizontal urban expansion through urbanization, predicts the tripling of urban land cover worldwide within the next three decades and the consequent adverse impact upon biodiversity. It also states that the main biodiversity 'hotspots' being affected by this trend are in the LMICs (Seto *et al*, 2012). A more recent study on cities in LMICs of over one million population shows that the majority of these cities are expanding outwards and not densifying (Mahtta *et al*, 2019). The main conclusion from these studies could even be that urbanization trends should be arrested and that cities must become denser through infilling, and not continue to spread outwards. LMICs need to preserve their agricultural land and habitats through compact and sustainable urban development. Furthermore, there is evidence that the more compact cities are correlated

with lower greenhouse gas emissions and higher productivity. Therefore the management of urbanization should best be undertaken by professionals working closely with the impacted communities and political authorities who all recognize their responsibility to promote the 'New Urban Agenda' and actively seek to achieve the United Nation's Sustainable Development Goal (SDG) #11: 'Sustainable Cities and Communities'.

There are now many scholars who have understood that:
- skewed national urban systems left behind as colonial legacies in the LMICs are of little use for national development;
- market forces alone cannot be expected to alter such distorted systems;
- urban local authorities must be

empowered with adequate resources and technical capacities;
- effective citizen participation and engagement are necessary to promote and achieve better living conditions in rapidly urbanizing LMICs; and
- community-based organizations (CBOs) and non-governmental organizations (NGOs) can play beneficial roles to support the urban poor.

Intervention at the national policy level is invariably needed to free an LMIC from such structural constraints, which would otherwise encourage ongoing unplanned urbanization. Multi-level governance is also essential, where national and sub-national policies are aligned with local strategies. Local efforts can be seriously constrained without such alignment.

An important observation by IAP (1996) is that: "*the potential for science to ameliorate or solve the problems of the world's multiplying cities has not been realized*". A review of spatial planning literature reveals much scholarship that could influence urban policy intervention. Science and technology can and should inform decision-making. The need also clearly exists for investment in research to improve spatial science and related technologies such as GIS, modelling, remote sensing, etc. Planning decisions should be taken in the light of the best available science and technology, while paying heed to traditional local knowledge, where relevant, for informed and inclusive decision-making.

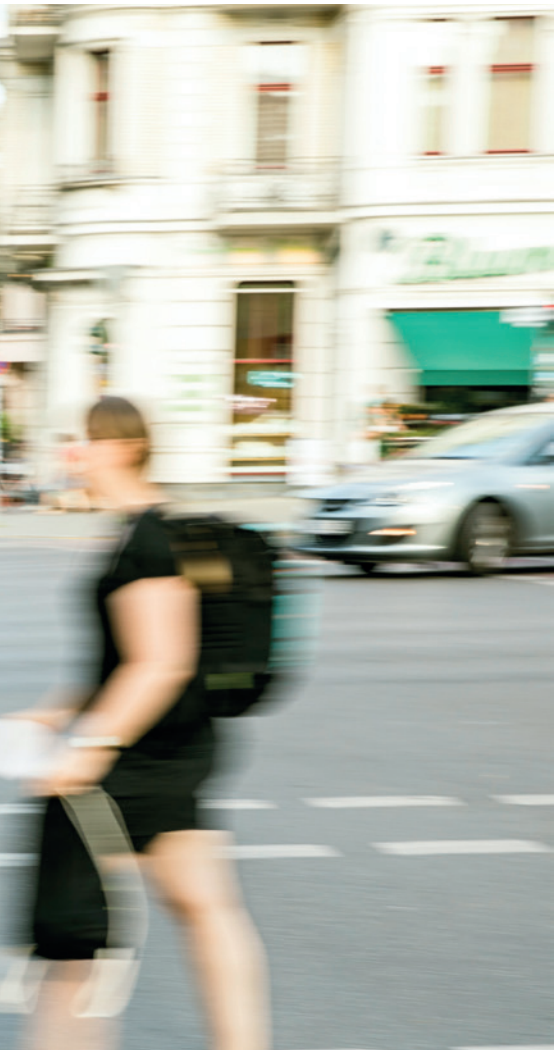
Another important focus of notable planners and scholars is on the role of small and mid-sized towns in the

promotion of the social and economic development of LMICs (Anon., 2018). Some researchers (Rondinelli, 1991) have even concluded that:
- colonial planning and economic policies, reinforced by post-colonial economic growth strategies of the 1950s and 1960s, were major causes of the rapid and extensive growth of some cities in many LMICs;
- urban development was generally prioritized over rural development;
- emphasis was frequently on modernizing the metropolitan economy while rural regions were often neglected and left impoverished; and
- in countries with dominant primate cities, few secondary mid-sized cities could grow large enough and have sufficiently diversified economies to attract rural migrants, stimulate agriculture and promote regional development.

Recognizing the importance of urban-rural linkages needed to achieve balanced regional development has been noted in respect of sub-Saharan Africa (Ugandan National Academy of Sciences, 2018) as well as in many other LMICs.

Policy Needs and Options

More than 100 reviews of empirical studies across the LMICs and a large number of national programmes for small and mid-sized towns demonstrate that spatial programmes: "*can be a crucial component in attaining social and economic objectives such as increasing*



the populations reached by basic services; increasing and diversifying agricultural production; and increasing the influence of citizens living in sub-national and sub-regional political and administration units" (Hardoy and Satterthwaite, 1988).

In discussing small and mid-sized towns, one researcher (Kundu, 2019) states that: "*The declining government investment in infrastructure and basic amenities in these towns over the years contributed to increasing socio-economic disparities within the settlement structure.*" In mid-sized cities and large urban agglomerations investments should be made in infrastructure to improve mobility by public transport and accessibility to services. Urban planning programmes need to be integrated with land use policies to liberate land at low prices and reduce spatial and social segregation. Schemes of social zoning may be used to mitigate difficulties of land prices. This work should utilize as far as possible local knowledge and engage all stakeholders. This engagement is also useful for deciding on the type and nature of needed interventions.

Even where small towns with some infrastructure facilities exist, inadequate urban governance and poor management prevent the much needed extension of those services to their rural hinterlands (Bhagat, 2019). A United Nations publication (UN/ESCAP, 1979) states that: urban-rural inequality is a major problem in Asia; and that more attention should be paid to rural development to achieve a more balanced spatial growth between rural and urban areas and a more equitable distribution of the benefits of economic growth. These inequalities are also found in most LMICs in other continents. United Nations Member States agreed to support both the SDGs and the New Urban Agenda, calling for new inclusive approaches and synergies between urban and rural communities and space for integrated urban and territorial planning and development. The investment necessary for tackling the challenges in cities in many LMICs depends on the engagement of their national governments both in unitary and federalist countries, but also on the consideration of local specificities and demands. Furthermore, there should always be encouragement and space for social participation and democratic governance on decisions to be made by urban local authorities.

The relocation of such settlements and/or their vulnerable populations may be the safest available options.

Even assuming a committed approach to rural development, out-migration from rural areas for non-farm occupations is likely to continue in several world regions. In addition, climate change is increasingly impacting upon migration into cities. Rather than have these rural migrants target the larger cities, the more manageable scenario would be a gradual process whereby at least some migrants move to the mid-sized towns first. Then, movements to the large cities could be confined to the more urbanized migrants from mid-sized towns. This pattern of internal migration is referred to by some scholars as 'decentralized urbanization' (Sharma, 2019).

It is important to note that urban-based services in small and mid-sized towns not only require built infrastructure but also that people with urban-type skills are resident. As such skills are not readily available in the rural regions of most LMICs, urban settlement programmes designed to provide these skills from major urban areas to the small and mid-sized towns are a clear need (Gunaratna, 2000).

There is also an urgent need to recognize the vulnerability of human habitats due to the adversities of climate change. Of particular importance are:

- the many coastal towns and conurbations affected by sea level rise;
- landslide-prone areas in hilly terrains; and
- other urban areas that are exposed to frequent floods and also heat waves.

Public health should also be of special concern in urban planning (Abdullah, 2019). There is the need to counter the danger of the easy spread of epidemics in dense human settlements, a danger accentuated by urbanization. Low-income urban dwellers consequently and inevitably face the twin burden of communicable and non-communicable diseases.

Finally, cities being planned under all these identified initiatives, regardless of their size, must also be consciously and firmly guided by the United Nations' recommendation for a New Urban Agenda and SDG#11. Such planning would ensure that the results are sustainable and to the benefit of all, including dwellers in informal urban settlements who otherwise are all too often excluded from the many benefits of urban life.

Recommendations

In the light of the foregoing discussions, findings and arguments, key recommendations relating to intervention by national policies on urbanization in the LMICs include the need for:

I. Greater reliance upon science-based approaches in urban and regional planning;
II. Extensive investment in research focused on the varied problems of the urbanization phenomenon as is manifest in LMICs;
III. Planned urbanization as opposed to ad hoc planning;
IV. Planned investment in all types of urban infrastructure including physical, social and economic;
V. A concurrent focus on agriculture and rural development to ensure that urbanization will be an equitable process at the national and sub-national regional levels;
VI. Planned spatial and economic development of small towns with efficient urban governance to provide access to social and economic infrastructure for their residents and also, importantly, for their respective rural hinterlands;
VII. Planned spatial and economic development of mid-sized towns with efficient urban governance to function *inter alia* as ready target locations for rural migrants as alternatives to the largest cities;
VIII. Planned development of cities that ensure densification rather than allowing the ecologically damaging horizontal spread into rural land;
IX. Planned development of cities to include the fostering of healthy lifestyles *inter alia* through the provision of safe access to outdoor physical exercise and to green spaces;
X. Recognizing the serious health hazards that are inherent and difficult to combat within dense informal settlements in large cities;
XI. Providing substantial investment in affordable and social housing including the development of informal settlements;
XII. Monitoring land uses in large metropolises to make them more compact;
XIII. Development of sustainable and efficient public transportation systems accessible to and affordable by all citizens;
XIV. Public programmes for the *in situ* upgrading of informal settlements to provide basic infrastructure and also prevent displacement or their resettlement elsewhere;
XV. Empowering urban local authorities for decision-making and to be coordinated vertically to national urban policies in both Unitary and Federalist countries; and
XVI. Positive action by agencies at all levels in respect of the political commitments made on the UN's 'New Urban Agenda' and the SDGs, with special attention to SDG#11.

References:

Abdullah, K.A. bin (2019). 'Urbanization and emerging infectious diseases' Workshop Report, 'Managing Urbanization in Asia', National Academy of Sciences Sri Lanka. https://www.interacademies.org/news/managing-urbanisation-asia

Belsky, E. et al. (2013). Advancing inclusive and sustainable urban development: Correcting planning failures and connecting communities to capital. Cambridge, MA, USA. https://www.jchs.harvard.edu/research-areas/reports/advancing-inclusive-and-sustainable-urban-development-correcting-planning

Bhagat, R.B. (2019). 'Nature of urbanisation and urban policies in India'. Workshop Report, 'Managing Urbanization in Asia', National Academy of Sciences Sri Lanka. https://www.interacademies.org/news/managing-urbanisation-asia

Datta P. (2006). 'Urbanisation in India'. European Population Conference, Liverpool (UK), 21-24 June 2006. http://160592857366.free.fr/joe/ebooks/ShareData/Urbanisation+in+India.pdf

Díaz-Márquez, A. (2019). Revisión bibliográficasobre la circulación de ideas urbanasen. América Latina y el caribe. *Revista De Estudios Urbano Regionales*, 45(134). Santiago de Chile.

Gunaratna, L.K. (2000). 'Accelerating regional development'. In: Indraratna A.D.V.de S. (ed) 'A quarter century of Mahaweli: Retrospect and prospect'. National Academy of Sciences Sri Lanka, Colombo, pp. 266-268.

Hardoy, J.E. and Satterthwaite, D. (1988). Small and intermediate urban centres in the Third World: What role for government?' *Third World Planning Review*, J. Liverpool, UK, p 8. http://www.eure.cl/index.php/eure/article/view/2656/1169

Howard, E. (1985) 'Garden Cities of Tomorrow' (revised edition) Attic Books, Eastbourne (UK). First published as 'A Peaceful Path to Real Reform' London, 1898.

IAP (2012). IAP Statement on Population and Consumption. https://www.interacademies.org/statement/iap-statement-population-and-consumption

IAP (1996). IAP Statement on Urban Development. https://www.interacademies.org/index.php/statement/iap-statement-urban-development

Kugelman, M. (2014). M. Kugelman (ed) 'Pakistan's runaway urbanization: What can be done?' Woodrow Wilson International Center for Scholars, Washington DC, 2014.

Kundu, A. (2019). 'Urbanization and industrialization in Asian countries: The spectre of premature deindustrialisation'. Workshop Report, 'Managing Urbanization in Asia', National Academy of Sciences Sri Lanka. https://www.interacademies.org/news/managing-urbanisation-asia

Mahtta, R., Mahendra, A., Seto, K.C. (2019). Building up or spreading out? Typologies of urban growth across 478 cities of 1 million+, *Environmental Research Letters*, 14:124077. https://iopscience.iop.org/article/10.1088/1748-9326/ab59bf/meta

Myers, G.A. (2011). African Cities: Alternative Visions of Urban Theory and Practice. Zed Books, London/New York.

Pieterse, E. (2014). Filling the void: an agenda for tackling African urbanization. In: E. Pieterse and S. Parnell (eds). Africa's Urban Revolution. pp: 200-220. Zed Books, London/New York.

Rojas, E. (2003). Las regiones metropolitanas de América Latina. Problemas de gobierno y desarrollo. In 'Gobernar las Metrópolis', pp. 35-62. Interamerican Development Bank, Washington DC. http://www.economia.unam.mx/cedrus/pdf/Gobernar_las_metropolis.pdf#page=37

Rondinelli, D.A. (1991). Asian urban development policies in the 1990s: From growth control to urban diffusion, *World Development J.*, 19(7): 791-803.

Roy A. (2005), Urban Informality: Toward an Epistemology of Planning. *Journal of the American Planning Association*, 71(2): 147-158.

Seto, K.C. *et al* (2012) Global forecasts of urban expansion to 2030 and direct impacts on biodiversity and carbon pools. *Proceedings of the National Academy of Sciences* http://www.pnas.org/content/early/2012/09/11/1211658109

Sharma, P. (2019). 'Population Monograph of Nepal'. Workshop Report, 'Managing Urbanization in Asia', National Academy of Sciences Sri Lanka. https://www.interacademies.org/news/managing-urbanisation-asia

Shaw, A. (1995). Satellite town development in Asia: The case of new Bombay, India. *Urban Geography J.* 16(3): 254-271.

Uganda National Academy of Sciences (2018). Owning Our Urban Future: Enabling Healthy Cities in Eastern Africa Academies of Ethiopia and Uganda, and the African Centre for Global Health and Social Transformation. https://www.researchgate.net/blication/332672228_Owning_our_Urban_Future_Urban-Rural_Linkages_for_Balanced_Regional_Development_in_Africa

United Nations, Department of Economic and Social Affairs, Population Division (2019). World Urbanization Prospects: The 2018 Revision (ST/ESA/SER.A/420). New York: United Nations.

UN/ESCAP (1979). Guidelines for Rural Centre Planning. UN, New York, pp. 87-89.

UN Habitat (2003). In 'The Challenge of Slums: Global report on human settlements 2003. https://unhabitat.org/the-challenge-of-slums-global-report-on-human-settlements-2003

Anon (2018). Republished Kathmandu seminar (1978) proceedings, Group II report: 'South Asian Seminar on Small and Medium Sized Towns in Regional Development'. See Annex A in K.L. Gunaratna, 'Towards Equitable Progress: Essays from a South Asian perspective', Springer, Singapore 2018. https://link.springer.com/content/pdf/bbm%3A978-981-10-8923-7%2F1

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