



- **L T Kiringoda** is a Chartered Architect, Town Planner and a Chartered Environmentalist. He headed the Directorate of Development Planning of the Urban Development Authority of Sri Lanka, wherein he served for nearly 3-decades.-

---

This was published in the Annual Sessions Report 2014 of Sri Lanka Association for the Advancement of Science. I was the President of Section C (for science disciplines of Engineering, Architecture and Surveying).-

Abstract Studies on urban dynamics in Sri Lanka are few. This is due to lack of an appropriate definition of an 'urban' area. The country is still using the areas within administrative boundaries of municipal and urban councils to define urban. Historically the choice of locations for dense human settlements in the country had been changing from locations close to reservoirs or along the paths of water courses in the dry and intermediate zones to locations in the intermediate and wet zones or to locations close to trading ports in the coastal belt. Introduction of commodity agriculture in the form of plantations in the hinterland required a transport infrastructure comprising roads and railroads for transportation of produce to Colombo. This increased the pace of change in cities in the country. Since the beginning of the British Colonial Period (1815-1948) there had been many an intervention to control and guide this pace of change in densely populated human settlements in an orderly manner. After 1970s the state economic development policies focused on prioritizing and promoting investments on power generation, industries, tourism and international trade and this resulted in urban development taking the centre stage with a focus on implementing economic, social, and physical development in urban areas adding new dimensions to the study of dynamics in urban human settlements of Sri Lanka. Collaborative research is essential to formulate indicators for describing dynamics of an urban environment due to this subject not being entirely within the purview of Town Planning.

### 1. Introduction1

The art and science of ordering the use of land and siting of buildings and communication routes so as to secure the maximum practicable degree of economy, convenience, and attractiveness and to ensure that the environment is protected at locations suitable for densely populated human settlements form the core of the professional discipline of Town Planning. Urban Designers and Architects are expected to induce life to such locations through creating liveable spaces, places and shelter for humans to live, work and play. And the Structural Engineers ensure that the structures, which house or facilitate human activities, remain stable during the estimated lifespan of the structures. Sometimes the very humans who demanded those structures may pull them down for want of modernity or for want of more profits. Whatever the circumstances leading to building or rebuilding, Town Planning has to play the initial lead role in finding suitable locations and guiding the development thereon for accommodating the change. This change forms the basis for studying dynamics in the densely populated human settlements, which are designated as urban. It is an accepted norm the world over, that a healthy rate of urbanization is a good indicator for measuring growth and development in the national context. Hence urbanization and urban dynamics can be considered as complementing each other. In general urban dynamics involves the study of the changing movements of people, objects and information in a city. With advancements in technology and new discoveries in science, new trends emerge causing changes in urban lifestyles. Whether these trends remain static or dynamic depends on the aspirations of the urban dwellers and the capacity of urban areas to respond to change.

### **2. Methodology**

In the background of massive investments being mobilized for development of road, water and air transport, power and water supply, solid waste management, flood control and urban regeneration, changes of hitherto unprecedented scale could be expected in the some of the urban areas in the country. Moreover, the government declaring its intention to enter into FTAs with emerging Asian Economic Giants is sending down signals to state sector institutions responsible for spatial planning and infrastructure development and private sector institutions with capacity for investing capital in large scales, to prepare for partnerships for developing Tourism, Health, Industrial, IT, Marine, Education and many other Services sectors. The expanding variety of services will be more complex. Therefore, besides the pace of change in urban physical environments, host of other movements are expected to form more dynamic networks. Whether, it could truly happen and whether the planning instruments and planning tools currently available in the country are adequate for sustaining the growth which is expected to result from new dynamics, need to be examined for maintaining vibrancy and efficiency of urban systems. Measuring vibrancy and efficiency of new systems with current indicators will not yield good monitoring results and therefore and more new indicators would have to be formulated. As the complexity of urban systems increases formulating suitable indicators to measure the dynamics and collecting data for the same require extensive collaborative research involving researchers in the fields of Town Planning, Sociology, Marketing, Economics, Health, and Transport etc. Therefore the intent of this paper is to highlight the current level of preparedness and adequacy of available planning instruments and tools for creating dynamic urban environments in the country. A dialogue to promote the study of emerging complexity of urban dynamics in Sri Lanka through collaborative research has to begin. The content of this

paper is a description of a) Is Sri Lanka an urbanized country? b) Is urban Sri Lanka dynamic?

### 3. Urban, Urbanization and Urban Dynamics

#### 3.1 Urban

There is no universally accepted yardstick to define a human settlement as 'urban'. Different countries adopt different yardsticks independently. A report titled "World Urbanization prospects" reveals that out of 231 countries surveyed 28% used a pure administrative definition. (UN, 2012) Some countries used a combination of population and geographic characteristics with administrative criteria. Some other countries define urban as areas or agglomerations, which have a minimum population ranging from 1500-50,000, a minimum density of 400-1,000 persons per square mile and at least 75% of the adult male population being employed in non-agriculture activities (UN, 2005). According to Deuskar (2016) each definition may be well-suited to its own national context, but the differences present a problem when trying to compare urbanization across countries.

#### 3.2 Urbanization

The simplest definition of urbanization is in describing it as an index of transformation from traditional rural economies to modern industrial one. Demographic point of view urbanization is the increase of proportion of population living in "urban areas" of a country and urbanization is the percentage of population who live in urban areas out of the total population in a country. (Uduporuwa, 2010)

Kingsley Davis (1965) in "Urbanization of Human Populations" has explained urbanization as process of switch from spread out pattern of human settlements to one of concentration in urban centres. According to him it is a finite process--- a cycle through which a nation pass as they evolve from agrarian to industrial society and mentions that there are three stages in the process of urbanization.

- a) The initial stage characterized by rural traditional society with predominance in agriculture and dispersed pattern of settlements;
- b) The acceleration stage where basic restructuring of the economy and investments in social overhead capitals including transportation, communication take place and dependence on primary sector gradually dwindles;
- c) The terminal stage where urban population exceeds 70% or more and at this stage level of urbanization remains more or less same or constant.

3.3 Urban Dynamics Unless affected by natural or man-made disasters, or opportunities for good employment and good housing are on the decline, an urban area is expected grow continuously. However urban dynamics is simply not continuous growth. It is a description of the changing movements of people, objects and information in a city. (IGI-Global, 2016)

Alfeld (1969) states that urban dynamics incorporate limited land availability as an explicit

resource constraint and only demolition of existing structures can clear the way for further building. In equilibrium, construction balances demolition. He further explains that if experience is any guide then two rules ought to guide any future application of urban dynamics: 1) Emphasize answers not models; 2) Emphasize interface not data. In addition to applying these rules he states that urban decision makers must grasp four interconnected principles that control urban behaviour: a) resource constraints, b) urban aging, c) relative attractiveness and d) growth vs. equilibrium

Forrester (1969) developed a computer simulation model for visualizing how the central city first grows, then stagnates and decays. Sanders & Sanders (2004), in a review of Forrester's model, states that "an urban area is traditionally defined as a system interacting industries, people and housing and as the area develops and the land gets filled with buildings and structures, the process of aging causes stagnation. Unless there is continuing renewal what is developed on land converts the area from one marked as innovation and growth to one characterized by aging housing and declining industry".

A module on urban dynamics offered in an academic program by IHS, The Netherlands states that urban dynamics are expressed in terms of urbanization, urban competitiveness, urban networks, informality, urban environmental sustainability, climate change, locational economics and land markets (IHS, 2013). Another opinion on urban dynamics dwells on the idea that inclusiveness of cities makes them dynamic because it is the people who can make it dynamic. Misra (2016) analysing the outcomes of a discussion on "How do we build inclusive cities?" lists three pre-requisites for the planning process to make cities in which everyone-regardless of gender, sexual orientation, race, age or ability-can live and thrive. i. Step 1: Acknowledge the problem- Examine closely how inclusive-or not inclusive-they currently are; ii. Step 2: Push for transit-oriented development- Formulate housing policies that aim to build cities rather than housing policies; iii. Step 3: Invest in people and be "nimble"- Investing in the future of a city necessitates investing in its residents. What is interesting to note in the discussion mentioned above was its concluding remark: "Economic growth is easy but inclusion is harder."

**3.4 Urban development in Sri Lanka Until the 16th Century** Sri Lanka's history has no record of network of cities. Each kingdom had its seat of governance established in the city bearing the name of the kingdom and other urban centres, if there were any, may have been too small for reckoning. During Portuguese and Dutch Colonial Periods, there were networks of Fortified Towns and records of Dutch Period show that, Forts in Colombo, Galle and Jaffna having battalions with over 1,200 soldiers in each.. Studies on living Fortified Town in Galle show that city had been planned to accommodate trading and residential activities in addition to military activity. Due to fears of attacks from the sea and land, those towns were planned as closed systems protected by high fortifications and moats. (Kiringoda, 1992) First mention of drawbridges can be found in Dutch Records and at Star Fort Matara the drawbridge has been reconstructed with expertise from The Netherlands. The whole country was brought under British Colonial Rule in 1815. Introduction of commodity agriculture in a massive scale bringing the wet and intermediate zones in the country under a plantation land use, required roads, railroads and harbours to transport the export produce from the hinterland. The British also introduced statutes for governance of urban local councils: Municipal Ordinance (1947), Urban Council Ordinance (1939 and Town Council Ordinance (1946). These statutes empowered the

local administrators to provide and maintain thoroughfares and public amenities. As regards travel and transport between cities across rivers, there is evidence in historical records, that pontoon bridges (bridge of boats) had been constructed in Galle (across Mahamodera Lake), and Kelaniya (across Kelani River). The British also introduced statutes for planning and guiding developments in those urban areas: Housing & Town Improvement Ordinance (1915) and Town & Country Planning Ordinance (1946). These laws had hardly any power to promote urban development beyond regulatory planning and development control but they are still in force in spite of amendments or enactment of new laws to promote development in urban areas. In 1977, the country's economy was liberalized to bring in investments from capital markets to develop industrial, tourism, power generation and road, sea and air transport. Urban development was given a high priority and to facilitate implementation of development strategies new policy instruments to establish institutions such as UDA (1978), Greater Colombo Economic Commission (1978), Mahaweli Authority (1979) and National Housing Development Authority (1979) were introduced. Since 1978, urban development in Sri Lanka has been promoted and guided by the development plans, prepared for local areas declared as urban under the powers of the UDA Law.

#### 4. Discussion

4.1 Is Sri Lanka an urbanized country? Sri Lanka does not have a yardstick to define urban. As is done in many countries in the world, Sri Lankan urban policy planners use a pure administrative definition with some flexibility to define and declare certain rural areas with potential for increasing the amenity value of land through dense development. In the National Physical Plan 2007-2030, there are several Metro Regions, which are urban agglomerations but without defined boundaries. According to the classification currently in use, the following areas, which are considered as urban, are under the purview of respective state institutions. a) Urban Development Authority- 23 Municipal Councils (MC), 41 Urban Councils (UC) and Urban Pradeshiya Sabas (UPS), Nuwara Eliya District, Trincomalee District, and 1-km wide Coastal Belt b) National Physical Planning Department- Sacred Cities and Metro Regions c) Megapolis Development Authority (in future) – Western Province and other Metro Regions All MCs, UCs and UPSs, which govern the areas declared under a) above, exercise authority delegated by the UDA for enforcement of urban development plans prepared for those areas by the UDA. The purpose of declaring a 1-km wide Coastal Belt was for promoting and guiding the developments in those areas for facilitating Tourism. (Silva 2016) Besides these several high density housing schemes were developed by the National Housing Development Authority (NHDA) in peripheral areas of Colombo (Mattegoda, Ranpokunagama and Seeduwa) and the densities of populations and buildings in those housing schemes are close to them being considered as urban.

In a report titled "Leveraging Urbanization in South Asia: Managing Spatial Transformation for Prosperity and Livability" the WB (2015) states that "Sri Lanka is one of five nations in the region – Bangladesh, India, Maldives and Pakistan are the others – where official estimates of the urban share of the population are well below other estimates. That suggests large hidden urbanization – in other words, sizable portions of their populations are living in settlements that, although they may exhibit urban characteristics, are governed as rural areas. There are indications that as much as one-third of Sri Lanka's entire population may be living in areas that possess urban characteristics, but are classified as rural". Analysing the key findings of the

2012 Census of Population and Housing, the Department of Census and Statistics says that the urban percentage “would have been much higher if the definitional issues were resolved”. (DCS/UNFPA, 2014) An interim report of an ongoing research on “An Alternative Definition for Urban Sector in Sri Lanka” suggests a yardsticks for defining an urban area for Sri Lanka by using four indicators to screen the Grama Niladhari Division (GND) level, the smallest spatial unit recognized for civil administration: Minimum population and Population density reflecting the social characteristics of urban population; Plot area ratio and Non-agriculture employment ratios reflecting ecological and economic elements. The same interim report suggests a yardstick as the “ideal urban definition” for Sri Lanka. i. Grama Niladhari Division (GND) level, using four indicators;

- a. Minimum population of 750 persons,
- b. Population density greater than 500 persons per km<sup>2</sup>,
- c. Firewood dependence of less than 95 % households,
- d. Well-water dependence of less than 95% households.

The report further states that until appropriate data become available this ideal definition also fails to address the current issues of an urban definition and estimates. (IPS, 2016)

Quoting the statistics provided by Sri Lanka’s national statistical office, the WB states that in 2014, the urban population of Sri Lanka was 18.3% of the total population and the urban population was 0.9% (WB, 2015). Both figures are comparatively very low for a healthy report on urbanization as an indicator of economic development. In another report WB states that in 1987 Sri Lanka tightened its definition by reclassifying town councils as rural areas (Pradeshiya Sabha). This contributed to a fall in the country’s official urban share to fall from 21.5 percent in the 1981 census to 14.6 percent in 2001.

Lamudi, a web based journal that focus on emerging real estate markets in Sri Lanka states that, “Most households have access to modern-day social services as well as basic healthcare, education and electricity (96 percent), reducing the need to migrate to an urban area. However, the high cost of properties in Sri Lanka’s urban regions also plays a direct role. Due to the rise of construction costs and land prices, even the average value of a house in an urban area can exceed US \$ 50,000 (above LKR 6,000,000 by 2014), resulting more than 90 percent being unable to afford a home in an urban area”. (Lamudi, March 2016) 4.2 Is urban Sri Lanka dynamic? In Sri Lanka, the UDA Law was enacted in 1978 to go beyond hitherto practiced development control. The preamble of the statute states that the purpose of establishing the UDA is to promote integrated planning and implementation of economic, social and physical development. And the very intention of the law is to increase the amenity value of land in the areas declared as urban. The legal instrument the UDA is empowered to use for achieving its statutory objectives is the development plans prepared for each urban area under its purview. Statutory functions of the UDA allow preparation, implementation, monitoring of implementation, review and revision of development plans making it a cyclic process. Therefore it can reasonably be argued that in Sri Lanka the statute for urban development provides for continuous renewal which is the key to urban dynamics. The fact that the first development plan prepared for the city of Colombo in 1981 is now in its fourth stage of revision, is the proof of this cyclic process. The statute also provides for using Land Use Planning and Land Use Zoning as

planning tools in preparation of development plans. Generally the opinion of the investors and developers is that these two planning tools are used to control development. What many are not aware is the statutory provision for obtaining a Preliminary Planning Clearance (PPC) for a development which is innovative even within an apparently rigid legal framework of a development plan. Planning Committees make decisions on applications for PPC or Development Permits for special projects, which the developers consider as innovative. The UDA Law provides for establishing a PC in the UDA and at all local authorities, which exercise authority delegated by the UDA for implementation of development plans. A law that allows innovation in developing urban land cannot be said as rigid. It certainly helps maintaining urban dynamics. Ensuring orderly development through a development plan does not mean rigidity in development control. Providing amenities for recreation and social well being has also been made possible in a development plan, which may appear rigid to public and developers. The schedule provided in the 1982 amendment to the UDA Law, has enough guides for making an urban environment liveable. What is missing in the current set of development plans, which are in force in many an urban local authority, is apparent lack of those guides being used to looking into details beyond Zoning, in spite of the very schedule having provisions to do so. Examples of such matters that may be provided for in a development plan are architectural control, landscaping, public open spaces etc. Subsequent to ratification of Agenda 21 of the UN by the GOSL in 1992, legal instruments were put in place for promoting sustainable development and protection of environment. Since then, Environment Impact Assessment (EIA)/Initial Environment Examination (IEE) have been made compulsory for projects prescribed under the National Environment Law. Monitoring compliance and performance of measures introduced for mitigating negative impacts on environment is now mandatory for all approved environmentally sensitive projects. A development plan with powers for protecting environment, while promoting and implementing economic, social and physical development, is the desired ideal end result of urban development planning. Incorporating measures for Disaster Risk Reduction (DRR) into urban development plans was made compulsory aftermath the Tsunami in 2004. Climate changes experienced in the country during the last few years are resulting in more disasters of greater intensity and severity and damages caused to property and infrastructure services and disturbances caused to urban living are so great rectification is beyond the capacity of local government authorities. Destructions caused by disasters may cause stagnation. It could also trigger a new wave of dynamics, if city administrators and people are determined to rebuild.

4.3 Other Policy Interventions to making dynamic urban environments After 2010, the UDA was issued new directives under national urban development policy envisioned in “Mahinda Chinthanaya” and strategies were revised to give priority to urban regeneration and urban renewal. Projects implemented under this revised policy, include relocation, conservation and adaptive reuse of old buildings, development of public open spaces and landscaping roadsides and flood control.

Viewed from the point of four interconnected principles: resource constraints, urban aging, relative attractiveness and growth vs. equilibrium, which Alfeld (1969) concluded as essential to ensure urban dynamics, the impacts of this policy intervention are too numerous to describe in a short paper but it deserves to be examined thoroughly as an R&D input. It is simply because it has helped releasing more land for new developments, creating people friendly public open spaces and also helped increasing the amenity value of all land adjacent to these regenerated

areas.

Tourism adds vibrancy to urban environments. It is more so where old cities have been restored for adaptive reuse. Recently completed building restoration projects in Sri Lanka bear testimony to this. However, if the potential of old buildings with adaptive reuse for promoting tourism is not recognized and change of use is not considered in that context, all traces of old buildings in old and established cities in the country will be gone forever.

Expressways and improved roadways and railways have made inter city and rural-urban travel quicker and less cumbersome. This may slow down urbanization due to people from rural areas not seeking residence in cities. Studies need to be done to assess the economic and social impacts of people, who work in Colombo and suburbs, opting to travel daily from their home towns over 100-km away from Colombo. Presently preparation of the Plan for a Megapolis in the Western Province of the country is in progress. This is the result of a review of the 1999-Structure Plan for Colombo Metropolitan Region with the view of implementing its recommendations. Development of infrastructure, transport, health, education, industry, housing, environment and agriculture sectors are envisaged in the new plan. Amendments proposed to National Physical Plan 2007-2030 envisage development of several self-sufficient metro regions in the country but those strategies are still in planning stage. The Port City Project, which is under construction with intermittent stoppages, appears to be a new wave of urban dynamics in the horizon.

### References

#### References

1. "Urban Structural Dynamics" – Theme paper of Society of Structural Engineers, Sri Lanka for Conclave 2016;
2. "World Urbanization Prospects The 2011 Revision"- United Nations, New York  
[http://www.un.org/en/development/desa/population/publications/pdf/urbanization/WUP2011\\_Report.pdf](http://www.un.org/en/development/desa/population/publications/pdf/urbanization/WUP2011_Report.pdf) viewed on 17th July 2016
3. "Definition of Urban" – UN Demographic Year Book 2005,  
[http://unstats.un.org/unsd/demographic/sconcerns/densurb/Defintion\\_of%20Urban.pdf](http://unstats.un.org/unsd/demographic/sconcerns/densurb/Defintion_of%20Urban.pdf) viewed on 17th July 2016
4. Deuskar, C- "What does 'urban' mean?" -  
<http://blogs.worldbank.org/sustainablecities/what-does-urban-mean> viewed on 19th July 2016
5. Uduporuwa, RJM – "An Analysis of Urban Growth and Urbanization in the Sabaragamuwa Province, Sri Lanka", Sabaramuwa University Journal Volume 9 Number 1; December 2010
6. Davis, K - "Urbanization of Human Population",  
<http://hiebertglobalcenter.org/blog/wp-content/uploads/2013/04/Reading-7-Davis-The-Urbanization-of-the-Human-Population.pdf> viewed on 16th July 2016
7. IGI-Global - "What is urban?" <http://www.igi-global.com/dictionary/urban-dynamics/31091> 1st July 2016
8. Alfeld, LE – "Urban Dynamics: The First 50-years", System Dynamics Review Vol. 11, no. 3 (April 1995),  
<http://www.exponentialimprovement.com/cms/uploads/UrbanDynamicsFirstFiftyYears.pdf> viewed on 17th July 2016
9. Forrester, JW - "Urban Dynamics" , M.I.T. Press, Cambridge, Massachusetts, 1969
10. Sanders, P & Sanders, F – "Spatial Urban Dynamics",



## A Research Paper: DYNAMICS OF URBAN SRI LANKA

Written by - LT Kiringoda, BSc (Built Env), MSc (Arch), MSc (Urban GIS), FIA (SL), ARIBA, MITPSL, MIEPSL -  
Wednesday, 03 January 2018 14:43 - Last Updated Wednesday, 03 January 2018 14:52

---

[http://www.systemdynamics.org/conferences/2004/SDS\\_2004/PAPERS/119SANDE.pdf](http://www.systemdynamics.org/conferences/2004/SDS_2004/PAPERS/119SANDE.pdf) viewed on 17th July 2016

11. International Institute for Urban Studies, The Netherlands – “Urban Dynamics”,  
[http://www.ihs.nl/education/ihs\\_programmes/tailor\\_made\\_courses/urban\\_management\\_development\\_sustainable\\_urbanism\\_umdsu/curriculum\\_umdsu/urban\\_dynamics/](http://www.ihs.nl/education/ihs_programmes/tailor_made_courses/urban_management_development_sustainable_urbanism_umdsu/curriculum_umdsu/urban_dynamics/) viewed on 16th July 2016

12. Misra, T – “How to Build Inclusive Cities?”,  
<http://www.citylab.com/housing/2016/06/how-to-build-inclusive-cities/487322/#> viewed on 19th July 2016

13. Kiringoda, LT – “Fortified Town of Galle”, Unpublished MSc Dissertation, University of Moratuwa, 1992

14. Urban Development Authority Law No. 41 of 1978 National Physical Plan 2007-2030, National Physical Planning Department

15. Silva, P – “Buffer Zones”, Seminar on ‘Legal Instruments Applicable to Manage Sri Lanka’s Heritage, Colombo’, 11th July 2016

16. Census of Population and Housing 2012: Key Findings – Department of Census & Statistics, UNFPA, Colombo 2014

17. Institute of Policy Studies – “An Alternative Definition for Urban Sector in Sri Lanka”,  
<http://www.ips.lk/talkingeconomics/2016/04/05/can-we-produce-better-estimates-of-urbanization-in-sri-lanka/> viewed on 17th July 2016

18. World Bank – “Urban Population of Sri Lanka”  
<http://www.tradingeconomics.com/sri-lanka/urban-population-wb-data.html> viewed on 17th July 2016

19. World Bank - “Leveraging Urbanization in South Asia: Managing Spatial Transformation for Prosperity and Liveability”, <http://www.wb.org/en/country/sri-lanka/brief/leveraging->

E-mail:ltkirin@hotmail.com