Claudio Acioly currently heads the Capacity Building Unit at UN-Habitat, after decades of work with institutions and organizations as an architect and planner, including the coordination of the work of UN-Habitat in the fields of housing and slum upgrading for a number of years. Informality is one of his primary concerns, as it influences global processes of urbanization. His experience working within institutional and governmental structures that operate at the macro-scale assists us in looking at urban problems across contexts and data sets.

"We know by now, and have sufficient data to predict, where, how and under which conditions cities will grow. There is a wealth of information available to know which cities are shrinking – and which cities are growing really fast... We need to prepare for growth, and if we don't prepare people will go informal."

In Acioly's mind, there are four critical features of global urbanization trends that interact with informality and future urbanization. The first is demographic growth, including urban populations and their characteristics, and this includes growth rates that exercise significant pressure on cities and the demand for land and infrastructure. Informality is often associated with cities that grow quickly without sufficient plans to guide and control that growth. The second feature is inequality, which reflects on the nature and location of informal settlements, where we observe unequal access to nearly every basic urban service human beings need for living in the city.. The third trend is low-density growth, which is typically associated with negative or non-optimal urban conditions which impact on nearly every single dimension of quality of life in cities. This includes issues such as commuting conditions from home to work due to urban fragmentation and peripheral locations, resource inefficiency and unsustainable delivery of energy and sanitation and excessive consumption of land for urban development. Last is the trend of urban informality itself: the formation of slums, built as urban or urbanizing populations outgrow the capacity of the built-up spaces in a city to accommodate this growth. People are excluded from formal development options. The ample data and information about these critical points indicate the need to anticipate and provide for areas of rapid growth, otherwise if nothing is done and business as usual prevails, the result is that people will "go informal" and in the future this share of the urban population could grow exponentially. Acioly believes that we can plan for growth, and do better than the status quo.

"Cities are becoming unequal. Urbanization and urban inequality are growing hand-in-hand. We see the same images to illustrate this inequality over and over. With the State of World's Cities Report and the Prosperity Index, we are able to compare cities and see which policies are working or not. As we move around the globe and compare cities, we see the situation is very critical."

The recent data gives Acioly, and others, an insight into specific issues, but at a broad scale. The City Prosperity Index (CPI), for example, takes five indexes: productivity; quality of life; infrastructure; environmental sustainability; equality and social inclusion and maps them from 1-0 on spokes radiating from a central point. This enables pooled data to then be compared for a group of cities, illustrating how each city scores on each index clearly. The difference between Vienna and Johannesburg is clear, with Vienna scoring nearly 1 (maximum) on all the indexes, and Johannesburg much lower – and near to zero for equality and social inclusion. While photographs can tell a story, this kind of indexing invites comparisons and reflections about public policies and approaches, between stark opposites such as Vienna and Johannesburg, but also more similar pairings such as Cairo and Nairobi. The CPI also invites regional comparisons, or comparisons of cities which score high on particular factors and low on others.

"European cities are also becoming unequal. Actually if you would have looked at this data very early, it would not have been a surprise to see the switch – we are very shocked to this kind of a rise in social unrest in Stockholm – but from the data we could have predicted that this would happen, given the level of inequality and social exclusion."

The 'surprise of no surprise is unsurprising', but the data is sobering. Inequality is widening worldwide. In OECD countries, 17 of 22 countries have increases in inequality. In Europe, new kinds of inequality are being measured, including immigrant poverty, vulnerable elderly and at-risk youth populations. Inequality affects culture, socio-economic and political factors. For individuals who are suffering from unequal access to housing, jobs and other basic urban needs will experience negative impacts on their life expectancies and health; their children are less likely to attend school and acquire less education. There is a trap of poverty, and inequality contributes to the difficulty of escaping the trap and to people becoming trapped.

"The other element is urban land cover. Cities are expanding their urban land cover at twice the rate of population growth. This means that the growth in urban areas is low-density sprawl. This has serious implications of accessibility, particularly to those who have limited access to housing, and it has implications to the spatial structure, to mobility and so on."

Here Acioly points to the research of Shlomo Angel, which indicates a general pattern of decreasing density in cities across the globe from the mid-1800s until the end of his data range in 2000. The commonplace assumption that increasing industrialization, urbanization and globalization would result in dense, compact cities is proven incorrect by the data. For example, a poor family, living at the edge of an urban center, where limited employment options necessitate time-consuming and expensive commuting between home and work experiences difficulties associated with low density cities. The sprawl of low-density urbanization has a

profound impact on everything from quality of life to health outcomes. Data about spatial conditions and policies that include spatial issues are extremely important.

"The lack of affordable housing opportunities is driving people to informal housing and illegal land development processes, giving scale to the phenomenon of unplanned urbanization."

In 2000, UN-Habitat was mandated by the UN General Assembly to monitor the urban areas that were termed 'slums'. First they had to come up with a comprehensive definition of what this meant and who could be considered a slum dweller. A set of five criteria was developed to arrive at an operational definition of who would be considered a slum dweller. Anyone who lacked one or more of the following could be considered a slum dweller: access to improved sanitation, improved water, security of tenure, sufficient living areas and durable housing. UN-Habitat developed tools to measure and monitor slums in urban areas by their extent and kind of shelter deprivation.

Today, according to UN-Habitat, there are 862.5 million people who are defined as slum dwellers in the world. While the percentage of people living in slums has decreased from 46 percent to 32 percent since 1990, the total numbers of slum dwellers has increased from 600+ million in 1990, and data suggests that it will continue to increase in absolute numbers. In some places, in particular sub-Saharan Africa, western and southern Asia, the majority of urban growth is informal and consists of slums, making the two nearly synonymous.

"We have to move away from the romanticizing slums. People are forced into living conditions that increase their health, environmental, economic and social vulnerability. There is nothing nice about that. People suffer. Yes, there is a vibrant economy; yes, it contributes to the city and yes people are creative in finding solutions for their problems, but it remains inhuman."

Based on data analysis, UN-Habitat came to the conclusion that there was a phenomenon that came to be known as the Urban Penalty. A survey on 200 cities which looked at various dimensions of consumption and accessibility to urban services and goods, revealed a critical situation. The inhabitants on the slum side of the urban divide were penalized in comparison to the rest of the city around them, and also in comparison to their peers in rural areas. The penalty unveils in the form of slum dwellers dying earlier, suffering more ill health and experiencing more hunger than the rest of the urban population. Lower levels and access to education and employment also overshadow those paying the Urban Penalty. There is obviously nothing positive about those effects, and Acioly pointed out that this vulnerable population is at risk of worsening deprivations as a result of climate change.

"The predominant informal development model shows that cities are made by people and social and political processes. Not by plans. But good plans can make cities better. So how does it work? We have been trained to work in a rational and formal way, but that is not always how cities work."

In the informal city, housing production is incremental, so policy too must be incremental. Time, land, and resources are necessary to build one's house, to build many houses, to make a city. Land tenure must be secured to enable people to access long-term, stable housing options. People's housing process shows this unequivocally. Enabling policies can help secure land tenure, so that investments made in material, time and resources result in housing options that protect residents from relocation or eviction and structures from demolition or repossession. If time, land, resources and land tenure are treated as variables, policies can be developed to address each variable, with a high degree of specificity and variation suitable to many different situations. For example, property registration and formalization policies can help to secure land tenure, and retailers and producers of housing construction materials can be incentivized to provide affordable housing options. The incremental nature of building would also be wellserved by flexible financing models and evolutionary infrastructure provision. These are merely some of many ideas that are suggested by a policy-based approach that uses the basic factors required for housing production – as produced by people informally - to suggest interventions with the aim of decreasing slum creation. Cooperative efforts, like those undertaken in Uruguay and Sao Paulo during the 90's, where inhabitants were assisted by non-governmental organizations to develop housing and infrastructure demonstrate that these approaches can be scaled up, given sufficient financing and land. The ability to scale up is essential, given the scope and magnitude of the current problem, and its anticipated growth.

"So, there is an urgent need for a paradigm change in addressing the problem of slums. The experience is there, there is know-how, there are ample lessons learned – but very few critical evaluations. We need to abandon the piecemeal, project-based intervention in favor of a city-wide program scale."

A fundamental change in policies and approaches has been the shift from projects to programs, from the piecemeal to a citywide scope in many parts of the world. This is major progress since the 1970s, when responses were typified by repression, resettlement, eviction and eradication. There were also changes from the project-based, small-scale actions in the 1980s towards citywide interventions that became more widespread from the 1990's onwards. Cities are building their own solutions to informal-sector problems. Acioly sees the role of evaluations as one of checking tests, to see what policies and which plans are effective enough to respond at the scale needed to the challenge of informality.

"To conclude, I have a twin-track proposition. Citywide slum upgrading programs should be executed hand-in-hand with programs to increase the supply of affordable housing opportunities at scale, with diversity in price, tenure options,

living standards, locations and size. We need to combine curative and preventive policies in a single policy. Prevention means anticipation, to enable cities to absorb the growth in a planned manner"