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The urban sustainable development goal: Indicators, complexity and the politics of measuring cities

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ABSTRACT

As part of the post-2015 United Nations sustainable development agenda, the world has its first urban sustainable development goal (USDG) "to make cities and human settlements inclusive, safe, resilient and sustainable". This paper provides an overview of the USDG and explores some of the difficulties around using this goal as a tool for improving cities. We argue that challenges emerge around selecting the indicators in the first place and also around the practical use of these indicators once selected. Three main practical problems of indicator use include 1) the poor availability of standardized, open and comparable data 2) the lack of strong data collection institutions at the city scale to support monitoring for the USDG and 3) "localization" - the uptake and context specific application of the goal by diverse actors in widely different cities. Adding to the complexity, the USDG conversation is taking place at the same time as the proliferation of a bewildering array of indicator systems at different scales. Prompted by technological change, debates on the "data revolution" and "smart city" also have direct bearing on the USDG. We argue that despite these many complexities and challenges, the USDG framework has the potential to encourage and guide needed reforms in our cities but only if anchored in local institutions and initiatives informed by open, inclusive and contextually sensitive data collection and monitoring.

1. Introduction

More than two thirds of the world's population is likely to reside in urban areas by 2050, adding another 2.5 billion people to today's 4 billion urban residents (United Nations, 2014a). Meeting the basic needs of swelling urban populations while ensuring the integrity of critical ecosystems, addressing climate change and promoting economic productivity and social inclusion is one of the major challenges of our time. Cities, as voracious consumers of energy and producers of waste, including the bulk of the world's greenhouse gas emissions, are seen as critically important loci of numerous, complex inter-linked sustainability, development, and planning problems.

Increasingly, cities are also being conceptualized less as problems and more as "drivers of sustainable development" and global environmental change (Fitzgerald, 2010, Hoornweg, Sugar, & Trejos Gomez, 2011; Parnell, 2016). Urban areas can sustain densities that support efficient service provision, energy and land-use (Fitzgerald, 2010) and through recycling, green technologies and smart land-use and transportation planning, can alter their "urban metabolisms" to become leaner and greener, radically reducing waste (Ferrao & Fernandez, 2013; Troy, 2012). Cities with lean circular metabolisms can minimize inputs, maximize renewables and recycling and hence reduce ecological footprints (Rogers, 1997). Cities with diverse populations, subcultures and networks of interactions are also recognized as incubators for innovations that can help address our current challenges (Johnson, 2010; Hoornweg et al., 2011). Overall, a new global recognition exists that cities are where critical battles for sustainable human development are to be waged, battles with impacts far beyond cities themselves.

To a large extent, this growing recognition of the importance of cities is a product of a successful global campaign by a network of civil society, cities and the United Nations, a campaign that recently culminated in a New Urban Agenda (Habitat III, 2016) and a specifically Urban Sustainable Development Goal (USDG) as part of the United Nations 2030 Agenda for Sustainable Development. The goal is to "make cities and human settlements inclusive, safe, resilient and sustainable" and includes a series of 11 targets, each with politically negotiated indicators. This USDG conversation is taking place at the

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same time as the "data revolution" and ever expanding conversations and debates about leveraging technology, big data and citizen science for "smart" cities and improved urban planning (Goodspeed, 2015; Greenfield, 2013; Townsend, 2013, 2015). The discussion about USDG indicators most directly raises critical questions around data and data collection systems at the city scale, linking directly into this technology and data or "smart city" conversation. In addition, a plethora of actors with varied agendas has already developed many different urban indicators focused on different aspects and categories of cities (Moreno Pires, Fidélis, & Ramos, 2014; Huang, Wu, & Yan, 2015; Shen, Jorge Ochoa, Shah, & Zhang, 2011). USDG proponents must thus navigate a complex environment where an "urban indicator industry" and the related "smart city" and data industry are already in place (Herzi & Hasan, 2004; Hollands, 2008).

In this paper, we provide a brief background and overview of the history of the USDG and explore some of the emerging debates around urban indicators. We contextualize current concerns around the USDG within a wider historical and political conversation around the "data revolution", complexity and indicators for measuring the city. From this perspective, we argue the USDG as a tool for improving cities and their broader impacts faces a number of challenges. These include 1) dilemmas around defining the indicators in the first place and 2) dilemmas around the practice of using indicators. Three main practical problems around indicator use include 1) the poor availability of standardized, open and comparable data 2) the lack of strong data collection institutions at the city scale to support monitoring for the USDG and 3) "localization" -the uptake and application of the goal by diverse actors in widely different cities with specific local contexts.

2. From the Millennium Development Goals to an Urban Sustainable Development Goal

At the turn of the century, UN Member States fashioned a development agenda around eight Millennium Development Goals (MDGs). These included 1) eradicating extreme poverty and hunger, 2) achieving universal primary education, 3) promoting gender equality and empowering women, 4) reducing maternal and child mortality, 5) improving maternal health, 6) combating HIV/AIDS, malaria and other diseases and 7) ensuring environmental sustainability all within a context of 8) a 'global partnership for development". While the MDGs had urban dimensions, cities were by and large neglected. Only target 11 of MDG 7 to "ensure environmental sustainability" had a specifically urban dimension: "achieving by 2020 a significant improvement in the lives of at least 100 million slum dwellers". A task force on improving the lives of slum dwellers argued for recognizing the poor as active agents, improving urban governance, promoting local pro-poor policies, investing resources to make this happen and empowering local action, all as means to achieving target 11 (Garau, Sclar, & Carolini, 2005).

The MDGs were used as tools to advocate for improved services for the urban poor. However, problems emerged with both the framework and implementation (Fehling, Nelson, & Venkatapuram, 2013). First, despite the task force recommendations, the urban poor were rarely involved in the interventions designed to assist them, and their voices were often absent at local government levels where action was needed the most (Hasan, Patel, & Satterthwaite, 2005). Local governments themselves were seen to be missing from the MDG process and, regardless, often did not have the resources or capacity to implement changes on the ground needed to achieve the MDGs. The overall idea of a global partnership for development was also seen as too top down, patronizing (Hasan et al., 2005) even a "tyranny of experts" (Easterly, 2013, 2015).

Secondly, the indicators for urban poverty were highly problematic, systematically underestimating the scale and depth of poverty in higher cost cities (Satterthwaite, 2003). Problems existed with the typical tools for social, spatial and statistical analysis when measuring cities with high levels of informality, poverty and slum formation (You, 2007, 216). Thirdly, economic, social and environmental aspects were not integrated into the MDGs (United Nations, 2013). Fourthly, MDG monitoring and review did not even begin until five years after the goals were adopted and even then, data often lagged by three or more years (UN, 2014a, 2014b). In addition, measurements were tracked at a national level and further aggregated to regional scales, making city-level comparisons difficult. Overall, available data sources and MDG monitoring were of poor quality (Flood, 1997), little disaggregation was done, and problematic assumptions were often made.

Some MDG targets may have been reached, although not necessarily through MDG targeted interventions (Fukuda-Parr, 2014). The UN claims that "the proportion of urban population living in slums in the developing regions fell from approximately 39.4 per cent in 2000 to 29.7 per cent in 2014" and more than 320 million people gained access to either improved water, improved sanitation, durable housing or less crowded housing conditions (United Nations, 2015). However, the kinds of indicators used for the MDGs as well as the lack of monitoring mechanisms around their measurement and analysis has led to concerns, and without safeguards, statistical manipulation may have in fact created a false image of success (Hickel, 2016; Fukuda-Parr, 2014). Currently, absolute numbers of urban residents living in slums continue to grow, partly due to accelerating urbanization, population growth and the lack of appropriate land and housing policies. Over 880 million urban residents are estimated to live in slum conditions today, compared to 792 million reported in 2000 and 689 million in 1990 (United Nations, 2015).

After more than two years of intergovernmental negotiations with extensive civil society input, those constructing the post-2015 development agenda sought to directly address the failures and correct shortcomings of the MDGs. Further, urbanization became a key focus of concern in the reflections on the next round of goals, often as a crosscutting element of almost every sustainable development concern (United Nations, 2013). However, a global urban campaign advocated strongly for a stand-alone goal for urban areas and human settlements. The argument was that such a goal would help increase policy attention and awareness of urban challenges, giving cities more visibility for advocacy and funding purposes (Lucci, 2014).

Recognizing the critical role of governance challenges that characterize urban areas including high levels of informality, proponents of a stand alone urban goal argued it could also help coordinate and focus different actors' efforts (Lucci, 2014; Sustainable Development Solutions Network, 2013). Global organizations including UN-Habitat, Cities Alliance, the Sustainable Development Solutions Network, the Communitas Coalition, ICLEI, UCLG and 400+ partners and local and regional government supporters, mobilized and launched a massive and ultimately successful Campaign for the USDG. In September 2015 when the 2030 Agenda for Sustainable Development was adopted, the initial part of the campaign was won, and the USDG became one of seventeen Sustainable Development Goals (SDGs).

In an insightful analysis Parnell (2016) points to five major ways in which the SDGs are different from the MDGs. First, the goals are universal- applying to every place not just "poor" countries. Second, the economic, social and environmental dimensions of sustainable development are explicit, and more integrated together with a strong recognition- driven in part by concerns with climate change- about ecological limits and planetary boundaries. Third, recognition exists of the need to leverage innovation in technology to create better sources and monitoring of data at different scales. Fourth, global development is explicitly linked to global finance. Finally, the USDG itself is new and "path breaking", because it "concedes that, in an urban world, cities can be pathways to sustainable development"