SDG Implementation at the Local Level: Lessons From Responses to the Coronavirus Crisis in Three Cities in the Global South

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A body of work is starting to emerge that seeks to build on the challenges and lessons of the current global coronavirus crisis for long term sustainability planning and development. This perspective article argues that central to such reflections should be an acknowledgment of the intense territorial impact of the crisis, especially in the places where most of the world's population is increasingly living: cities. We review existing frameworks for SDG implementation in the cities of Bengaluru (India), Medellin (Colombia), and Cape Town (South Africa) and use this as the backdrop for an analysis of local responses to the pandemic. We build on this analysis to reflect on three main avenues for SDG implementation going forward: multi-level governance, the science-policy interface and citizen and society engagement. We argue that strengthening these structures and collaborations will be central to more sustainable, long-term inclusive, and evidence-based decision-making processes and global policy implementation in cities in a post COVID-19 world.

Keywords: SDG (sustainable development goals), COVID−19, multi-level governance (mlg), science-policy-society interfaces, cities

INTRODUCTION

The United Nations Sustainable Development Goals (SDGs) represent a global, ambitious,and comprehensive effort to achieve sustainable development in its social, economic, and environmental dimensions. The Coronavirus crisis has put tremendous pressure on countries, cities and people—revealing the limits to globalization, growth, and inequality. As a result of its impact on healthcare (SDG #3), the global workforce (SDG#8), and mobility (SDG #11)—often disproportionately affecting the most vulnerable (Alibegovic et al., 2020; World Economic Forum, 2020)—, two-thirds of SDGs are now unlikely to be met (Naidoo and Fisher, 2020). However, the pandemic has also revealed many innovative responses, including a re-appreciation of the role of science (Enserink and Kupferschmidt, 2020).

Researchers are trying to build on these responses to explore ways to "build back better" in a post-COVID-19 world (Sachs et al., 2020). We argue that central to such reflections should be an acknowledgment of the territorial impact of the crisis in cities, considering their central contribution to securing sustainability (Evans, 2019), and that they have been the hotspots of both cases and responses to the pandemic. This article builds on past and ongoing research on

the SDGs in Bengaluru (India), Medellin (Colombia), and Cape Town (South Africa) to analyse local responses to the pandemic and identify three main lessons for SDG implementation going forward. As we will discuss, these cities represent relevant cases considering their location, their different social realities, and their different political systems. Such variety is useful to achieve logical deduction (Flyvbjerg, 2006), and sheds light on how different cities are taking on the great challenge of localizing SDGs (see Klopp and Petretta, 2017).

SDGs IN CITIES OF THE GLOBAL SOUTH

In recent years, there has been a shift away from a focus on nation states in the world's response to sustainability challenges. City leaders have proved willing and able to act, and their efforts and advocacy are reflected in the development goals and agendas consequently adopted, such as the standalone urban SDG (Parnell, 2016). At the same time, global development frameworks have uncovered numerous tensions between policy and politics at the national and local level. As a result, progress on the achievement of various global goals has been slow and uneven (United Nations, 2019b). Challenges, especially in the global South, range from limited government capacity, and resources, to difficulties around available data and methodologies to measure progress and inadequate governance mechanisms (SDSN, 2019). While many national governments recognize the importance of the contribution of subnational governments to achieving global development agendas, the involvement of subnational governments in the planning, implementation and reporting of SDGs varies widely across the world (OECD/CoR, 2019; UCLG, 2019). This is confirmed by the cases of India, Colombia and South Africa under review here.

All three countries have demonstrated commitment to the SDGs at a high political level, and have presented Voluntary National Reports (VNR) to the UN. However, each country has followed different strategies for SDG localization. In India, states need to follow centralized directives from the federal government. The institution in charge SDG implementation (i.e., NITI Aayog) defines frameworks and monitors progress, while states and union territories pursue implementation. In Karnataka (of which Bengaluru, 12.3 million, is the capital), the Planning, Programme Monitoring and Statistics Department took until 2020 to develop an SDG vision document (PPMSD - Planning Programme Monitoring Statistics Department, 2020). The state prepared budgetary requirements and monitoring systems for measuring performance against baseline targets for 2022 and 2030. Although a National Indicator Framework has been developed, such a framework does not exist at the district or local government level (Jain et al., 2018; Sharma and Vora, 2019). As a result, in cities like Bengaluru, the policy and budget making, planning, implementation, and strategy monitoring processes and plans do not clearly reflect or align with the SDGs (Khan, 2019). Issues of systemic weaknesses, institutional capacity, delayed fund flows, inadequacy of human and financial resources and training, further impact the planning processes and weaken potential SDG implementation and monitoring.

Colombia, on the other hand, has followed a decentralized approach. The central government created a commission, which establishes implementation policies at all levels and checks the inclusion of SDGs in development plans formulated by counties and their capital cities (see DNP, 2017). The National Planning Department is in charge of formulating the national strategy for SDG implementation, but regions and cities are encouraged to further localize them and define their own strategies (DNP, 2018; Mejía-Dugand and Pizano-Castillo, 2020). This hands-off approach means that in Medellin, 2.5 million, until recently, the SDGs had not been coherently included in development plans (Mejía-Dugand and Pizano-Castillo, 2020). The localization process only became formal in 2018, with the issuing of Agenda Medellin 2030, and the city has since then identified relevant SDGs and linked local indicators. Oversight offices collect data for reporting and surveillance. In addition, the private sector finances a watchdog organization (TRENDS, 2019). Although the most recent Municipal Development Plan (i.e., 2020-2023) includes a thorough analysis of its impacts on each SDG down to the project level, the city still needs to link SDGs to other instruments that have a more direct impact on quality-of-life indicators, considering that these plans are replaced every 4 years (DAP, 2019; Mejía-Dugand and Pizano-Castillo, 2020).

Lastly, in South Africa, there has been little guidance for localization. Between 2015 and 2019, efforts consisted mainly of the alignment and mapping of the country's National Development Plan and statistical data to the SDGs. In 2019, South Africa presented its VNR, as well as a statistical baseline report, while creating a national coordination mechanism for implementation (Croese, 2019). While the country's government recognizes the important role of local governments, there are no concrete guidelines or mechanisms to coordinate efforts around SDG planning, monitoring, or reporting at this level. As a result, efforts have been mostly limited to bottom-up initiatives of a number of metropolitan municipalities, with few provincial governments actively engaged with SDGs (ICLEI, 2018). In the case of Cape Town, 4.5 million, reference to SDGs is included in the city's 2017-2022 Integrated Development Plan (CCT, 2017), while the city has also approved an approach and implementation plan for the city on the SDGs, aligned its Resilience Strategy to the SDGs, and pledged to present a Voluntary Local Review on SDG progress to the UN High Level Political Forum (Croese, 2019; Croese et al., 2020). However, while Cape Town's efforts toward SDG localization are notable, the lack of a coordinated national approach around SDG monitoring and implementation means that opportunities are missed for more streamlined collaboration across and between multiple scales and actors.

CORONAVIRUS RESPONSE

The examples of India, Colombia, and South Africa illustrate the degree of variation in terms of SDG planning, monitoring, and implementation in cities across the world. In identifying the challenges and opportunities for SDG implementation going forward, we argue that it is important to pay attention to the structures, actors, mechanisms, and strategies each city

has included/adopted to face and mitigate the impacts of the pandemic. We claim that important, and at times unexpected lessons emerge from this experience, informing the underlying, far-reaching challenge of sustainable development.

India reported its first case on January 30 (MHFW- Ministry of Health and Family Welfare, 2020) and the state of Karnataka on March 9 (The Hindu, 2020). Within 2 days of the first report, Karnataka was the first in the country to invoke the Epidemic Diseases Act to curb the spread. Notably, this came before the announcement of a nationwide lockdown on March 24 (Pinto, 2020). The Health and Family Welfare Minister announced the details of an effort to combat the virus, which included the reservation of around 2,300 in public and private hospitals. The state set up sixty labs by the end of May, up from only two in February. Notably, the Government of Karnataka initiated a new governance model which relies on a combination of citizen involvement and technology initiatives. The state set up a war room to ensure 24/7 monitoring and reporting, and responded to challenges of scale and speed by using technology to quickly train thousands of doctors and nurses. The COVID-19 task force was given additional funds from the 2019–2020 budget, and has relied on police leg work, traffic video camera feeds, drone monitoring, and mobile phone data to effectively trace contacts of confined patients and monitor quarantined citizens. An app named "Corona Watch" was developed to monitor home-quarantined citizens, which has helped make municipal and police team members available for other activities. In what can be seen as a two-tiered response, the city of Bengaluru adopted the "four T strategy"—trace, track, test, and treat—, which helped it emerge as a model city in COVID management. The city's efforts to curb the spread of COVID-19 have focused on (a) early action and timely coordination between relevant authorities, (b) contact tracing and quarantining, (c) citizen support and awareness, and (d) relief measures. Technology was fundamental in supporting these efforts.

Colombia declared a national emergency in March, with thirteen confirmed cases. That month, schools were closed, a preventive lockdown was imposed on senior citizens, and terrestrial and fluvial borders were closed. A mandatory, nation-wide lockdown was imposed on March 25th–a few days after the first confirmed death—and was extended gradually as the pandemic evolved. The city of Medellin has been hailed as a regional "COVID-19 pioneer" (Armario, 2020; The Economist, 2020). According to its mayor, he and his staff started discussing strategies and possible impacts from COVID-19 in mid-January, when the lockdown was imposed on Wuhan. The city realized early that, in order to keep citizens at home, it had to make sure the poorest had access to food and cash, and that home tests were needed to not saturate the health system (Aristegui, 2020). Technology and data science have been crucial tools in addressing the pandemic. The city understood that access to real-time data is important, but insufficient to confront this challenge, so it relied on monitoring and prediction, for instance through the collection of data with an online platform called *Medellín me cuida* (Medellin takes care of me) (see CODATA, 2020). Such predictive models have been crucial to raise alarms and inform public health policy and economic

responses. Local universities have also contributed with supply-chain modeling to make decisions about the distribution of goods and economic reactivation (Duque and Saldarriaga, 2020; Torres García, 2020). In addition, the government relied on vulnerability and mobility maps.

South Africa's first case was reported on March 5 and a state of national disaster declared on March 15. The national lockdown began on March 26 and has been referred to as "one of the world's strictest," as it halted the country's manufacturing and mining production, confined the entire population and banned the sale of alcohol and cigarettes (Graham, 2020). The decisive action of the government and the close collaboration with scientists in guiding its decisions was initially praised. However, over time, the strictness and at times apparent arbitrariness of lockdown regulations, as well as the delays and irregularities in the implementation of social and economic assistance caused fatigue, frustration, and desperation among citizens, especially among those relying on the informal sector for survival. Overall, cases have been largely concentrated in metropolitan cities, with Cape Town representing the hotspot in the first months. After some months, numbers started to rise in other metros, suggesting the city was only the first to peak. Although cities clearly represent hotspots of the disease, municipalities have been absent in the institutional mechanisms created to address the pandemic. While metropolitan municipalities have executive and legislative authority in their area, the responsibility for health lies with provincial and national governments, so the response to the virus has been largely coordinated at these levels (see, e.g., Brandt, 2020). Thus, in Cape Town it has been the provincial department of health keeping track of numbers of tests, cases and deaths down to suburb level and communicating them through the provincial COVID-19 dashboard. Cities are not part of the National Coronavirus Command Council and are only indirectly represented in the President's Coordinating Council through the South African Local Governments Association. The only forum in which cities have directly reported to the national government has been the parliamentary portfolio committee of Cooperative Governance and Traditional Affairs (de Visser, personal communication, 2020). Nevertheless, Cape Town has performed better than cities in other provinces of the country where, despite lower caseloads, health systems collapsed earlier (News 24, 2020). Two field hospitals have been set up in the city, one by converting the City's International Convention Center, and one in the city's largest informal settlement. Community health workers and volunteers have also played an important role in community testing and screening (David and Mash, 2020).

DISCUSSION

The cities of Bengaluru, Medellin and Cape Town illustrate that, despite increased agency, and global recognition, many city governments are only slowly and unevenly involved in processes for planning, monitoring, and implementing global goals such as SDGs. To a large extent this is the function of varying levels and configurations of decentralization and governance arrangements. In the current times of crisis, these varying

arrangements have determined the space that local governments have had to respond and act to the pandemic, which in turn has been shaped by the different and context-dependent ways in which each society perceives problems, builds networks, and identifies common goals.

Despite a centralized approach to the implementation of global development goals in India, which therefore found little resonance at the local level, Karnataka and Bengaluru acted almost autonomously from the central government in responding to the spread of the disease. Similarly, the city of Medellin displayed high levels of autonomy from the national and regional government, contributing to successfully slowing down the spread. In Cape Town, on the other hand, actions were limited by health mandates and disaster management regulations, turning the provincial government, together with the national government, into the main decision makers. In all cases, cities built on what was there—whether existing institutional structures and mandates, or data and sectoral and technical expertise—and adapted to fill emerging voids. The engagement and involvement of ordinary citizens across these cities proved central in this regard. Evans (2019) highlights the importance of analyzing new forms of governance, new technologies and collaborative research approaches for the study of urban sustainability. In the cases presented here, three main lessons emerge that—while seemingly straightforward—should be center stage to any reflections on and planning for SDG implementation going forward.

Multi-Level Governance

Multi-level governance and collaboration is central to achieving the SDGs, due to their transversal nature (Sachs, 2015; OECD, 2020). However, our reviews of the state of SDG planning, monitoring and implementation in India, Colombia, and South Africa show that the institutional structures required to enable and facilitate such integration and collaboration down to the city level are not yet (functionally) in place.

Local responses to the pandemic, in turn, illustrate the difficult trade-offs and decisions between general social well-being and healthy economies, or the perceived dilemma between lives and livelihoods, and the intricate and complicated links among them, also present in the SDGs (ISC, 2017). They have also shown the delicate balance between decisive top-down national-level intervention for the good of the entire nation and the need for local-level context-sensitive responses.

Global crises demand well-defined responsibilities, strengthened links and clear communication channels among local, regional and national authorities. In that sense, while some cities may be able to act on their own, there is no autonomy without collaboration. Despite disagreements and political fault lines, opponents can work together in times of crisis. Going forward, it will be important to build on this sense of urgency and the mechanisms, channels and partnerships created through this collaboration for advancing the SDGs. In doing so, it is not just important to bridge administrative or political divides, but also to ensure that this collaboration can stand the test of time and short-term political cycles. Multi-level governance is in itself the reification of #SDG 17.

Science-Policy Interfaces

Science has put the limits to growth on the agenda, even if, in practice, there has often been little change in national action. Numerous international organizations and observers have highlighted the importance of strengthening science-policy interfaces and evidence-based governance systems to accelerate global sustainability efforts (United Nations, 2017, 2019a). This is more important in cities, complex systems with many gaps in the knowledge and science necessary to inform corresponding complex and transversal policies (Parnell et al., 2000; Acuto and Parnell, 2016; International Expert Panel on Science the Future of Cities, 2018).

Our review of the state of SDG planning, monitoring and implementation showed that in all three cities the link between existing data collection and monitoring, and the data required to monitor and report on SDG implementation is still incipient or in progress. However, local responses to the coronavirus have shown that local governments are able to put in place data collection and monitoring systems in record time. In Karnataka and Bengaluru this was enabled by the strong involvement of ordinary citizens, leading to the creation of new governance models. In Medellin, the city government created, reactivated, and strengthened collaboration efforts with local universities and field experts that informed decisions on mobility, hospitals, and the economy.

Although big data can contribute to SDG monitoring and reporting, there are enormous challenges, such as the production and use of data in a transparent and ethical ways and its availability to avoid asymmetrical conditions (MacFeely, 2019). Furthermore, in the current coronavirus crisis, it is important to go beyond collecting and using health and economic data, but also social data that is disaggregated (Moore et al., 2020). The data and science platforms and collaborations developed during this crisis will be important to support and build on going forward.

Citizen and Society Engagement

The pandemic has shown how citizens and different actors in society can come together in efforts to address crises. Citizen involvement—either top-down or bottom-up—has been an undeniable characteristic of this global crisis. However, it has also highlighted the importance of continuity and institutional knowledge and of support for health workers and city officials.

Data has represented an important basis for citizen engagement and collaboration. Systematization through mobile apps and online platforms has helped authorities keep track of the virus's dynamics. Many citizens have found the constant updates offered by authorities to be useful, as illustrated by their widespread involvement through coronavirus apps.

Some societies are used to the collection of citizen data, while in other countries this is new. Overall, SDG monitoring and reporting still rely on traditional data collected by national statistics offices (Fritz et al., 2019). Hence, data collection efforts and the platforms created in response to the pandemic offer important potential for the use of citizen science to address existing data gaps in the monitoring of the SDGs going forward.

We have argued that frameworks for multi-level action and collaboration are uneven and that SDG localization remains

incipient, and showed how the current coronavirus pandemic has highlighted the importance of local action, innovation, and learning. Building on these experiences, we argue that in a post COVID-19 world it will be important to build and learn from the partnerships created in the process, with a particular focus on strengthening multi-level governance frameworks, science-policy interfaces, and citizen and society engagement. Emerging tensions and challenges must be also considered, so as to ensure long-term transparency, inclusivity and transversal collaboration in data, policies and plans designed to achieve sustainable development. This will also require building the necessary capacity and resources as levels of political, technical and financial capacity vary between cities and regions across the world, affecting the extent to which subnational governments can respond and plan ahead for both crises and development. SDG localization requires challenging existing practices, programmes, and plans to trigger transformative projects in all thematic areas.

DATA AVAILABILITY STATEMENT

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author/s.

AUTHOR CONTRIBUTIONS

SM-D, SC, and SAR contributed equally to the research, conceptualization, writing, and review of the manuscript. All authors contributed to the article and approved the submitted version.

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