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ENABLING INCLUSIVE ECONOMIC ECOSYSTEMS IN AFRICA: A ROLE FOR CITY GOVERNMENTS?

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Introduction: How to reduce inequality in cities?

The Covid-19 pandemic and subsequent worldwide lockdowns exacerbated inequality and precariousness for most of the world's population who live in poverty. Policy responses have most notably focused on increasing social protection measures to alleviate its devastating impact, especially for those in the informal economy with little to no protection. In South Africa, and in other countries across the world, governments' responses have been to increase social welfare and health expenditure. Using a qualitative, exploratory methodology which included a desktop literature review and key informant interviews, we looked at the potential for reducing inequality through a different lens: the immense enabling role local governments could play to achieve more equitable economic outcomes.

We applied the Local Innovation and Production Systems (LIPS) framework from Brazil to examine local governments' role in driving inclusive economic development and innovation in Africa. We used a small sample of three cities in African countries to look at how local governments, and in particular major cities, could think about local inclusive growth and economic interventions that would make cities easier to manage, and better to do business with. We wanted to find out if these approaches, in turn, could contribute to more equal outcomes for actors in both the formal and informal sectors.

A city's role in driving development

The importance of African countries' economies becoming far more innovation-driven to optimise their potential for growth and productivity has been punted for a number of years (Adesida & Karuri Sebina 2013; GERA 2017; SACN, 2017). Africa's urban population is expected to reach 1.7 billion by 2030, with 80% of the continent's residents expected to be living in cities (Leke and Signe, 2019). Africa's population is also the world's youngest, and it has the highest rate of youth unemployment, particularly in urban areas (Brookings, 2019; UNHabitat, 2018). Cities are recognised as drivers of economic development because they have a high concentration of employment opportunities and skills, thereby improving people's access to employment and improved services (DCOG, 2016). If city officials manage urbanisation effectively, they have the potential to make spaces more equitable and drive inclusive growth, thereby reducing poverty, unemployment and inequality. Local governments, and in particular those of major African cities, therefore have a critical ecosystem role. We reached this conclusion after investigating:

- what potential exists for African cities to design and implement inclusive local economic development approaches; and
- how local actors, such as local government, civic organisations, commercial and knowledge actors can play an active role in positively influencing economic production and socio-economic equality, including through leveraging new technologies that address inequality and unequal development.

Literature review

Innovation is increasingly considered crucial for successful modern economies to develop, including in Africa (Muchie & Lundvall 2003; Adesida & Karuri-Sebina 2013). Innovation is necessary for competition, growth and employment (Schumpeter 1912), and critical for variety, new ideas and adaptability (Rantisi 2002). Industries are constantly changing and, beyond the need to innovate and rethink how production happens and how products are consumed, societal, climate and health changes have significant impacts on economies and their ability to remain resilient and competitive. All actors who create and consume products require innovation to contribute towards improving how things are done, their value for their intended audience, and increased overall profits and income for economic growth (Muchie & Lundvall 2003).

Entrepreneurship as core for innovation

Much of the innovation theorisation has centred on technological advances in the global North (Lal and Shipp, 2013). However, the conversation has begun to shift towards developing nations. This has been fuelled by the recognition that unless developing nations' economies are innovation-driven, they are unlikely to address key issues of social and economic development, inequality and poverty in the global South. The Global Entrepreneurship Monitor (GEM) makes the case for a close relationship between innovation and entrepreneurship (GERA, 2016). Recognising and supporting entrepreneurial activity may help to create opportunities for providing adequate housing, reduce youth unemployment, and stimulate creative energy that addresses day to day challenges (Karuri-Sebina, 2017). However, supporting entrepreneurs should not only be the state's responsibility. The private sector can also play a key role in bolstering various economic and livelihood strategies. Given that informal activities account for the largest share of most African economies and have become the norm (Muller, 2013), focusing on smaller, mostly informal entrepreneurs in developing countries can lead to an economic contribution and also address social issues that impact on people's day-to-day lives. The informal, entrepreneurial space is where new ideas and creativity emerge (Rantisi, 2002).

National systems of innovation

Innovation cannot occur in a vacuum. It requires a systemic approach to facilitate learning and engagement amongst multiple and diverse actors (Lundvall, 1992). When innovation is the basis for a nation's competitive advantage, a national system of innovation (NIS) is crucial (Freeman, 1995; Lundvall, 1992; Nelson, 1993). A NIS has to be based on its specific endowments and resources (Adesida & Karuri-Sebina, 2013). Many countries have adopted NSI frameworks, and in countries such as Germany and Japan this has played a significant role in transforming their economies (Lal & Shipp 2013). It is understood that 'profiting from innovation requires the coordination of R&D, production and marketing… [and] industries in Germany, Japan, and the United States have invested in creating value through knowledge assets, characterised by an increased focus on design, adoption of open innovation and implementing in existing clusters' (Lal & Shipp 2013). These governments created centres of knowledge and special economic development and technology zones to leverage and enhance existing endowments (*ibid*).

Wilson et al. (2020) highlight the increasing interest in the potential of NSIs to transform developing countries' economies. However, in developing contexts inclusion is important. The role informal actors play, and those traditionally marginalised, becomes crucial.

NSIs are characterised broadly as being about the various actors, including public and private, their innovation activities, and the various relationships that facilitate knowledge and resource flows between them (Wilson et al., 2020). In developing countries, these systems are intended to contribute towards addressing their most urgent development needs, and economic development in particular.

While NSIs are seen as crucial for driving economic development, this is not a cookie-cutter exercise. It means different things for different countries and contexts. Lal and Shipp (2013) offer three context-determined elements:

How endowments give a country its comparative advantage

Endowments that give a country its edge include, for example, natural resources, culture or history. For those countries poorer in natural resources, an endowment could be an investment in technological industries.

How governments leverage their nation's endowments

Leveraging endowments is when a country:

- recognises how it might locate itself, aligned with what the endowments it has offer;
- understands the actors within its realm; and
- creates strategies for how it might incentivise innovative activities and industries.

How the private sector leverage their national endowments

This talks to how firms themselves are able to identify and drive innovation.

Innovation ecosystems and culture of innovation

Systems of innovation enable networking, learning and collaboration – a prerequisite for innovation-driven economies. Rantisi (2002: 590) defines regional innovation systems as 'the set of economic, political and institutional relationships occurring in a given geographical area which generates a collective learning process leading to rapid diffusion of knowledge and best practice'. However, their enabling ecosystems, which present the necessary economic conditions and dynamics, need to be supported. They do not occur merely by virtue of proximity or location. Matos et al. (2018) highlight the importance of understanding the social, institutional and cultural context which informs and impacts a system of innovation's performance. Muller (2013) refers to this as 'the local conditions of production'. Included in this list are a country's social and economic infrastructure, its state regulations, and its overall culture. Additional important considerations affecting ecosystems, such as institutional quality (Sharma et al., 2022) and the state's capabilities (Mazzucato et al., 2021), also affect innovation cultures, especially in developing contexts.

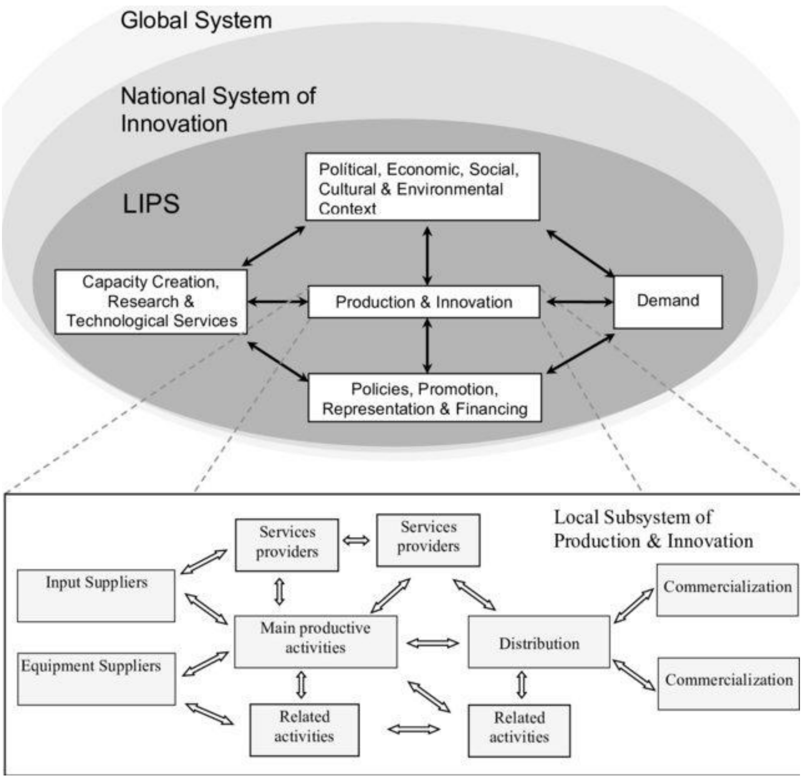
Local Innovation and Production Systems (LIPS)

A Local Innovation and Production Systems (LIPS) conceptual and methodological framework was developed in the Brazilian context to highlight its relevance in a world where innovation is increasingly recognised as key to evolution and strategic development (Cassiolato et al., 2018). The LIPS framework highlights the relevance of different territorial scales of innovation systems, and makes a particular case for the local level (Cassiolato et al., 2018). The use of local knowledge and knowledge systems is foregrounded, especially as inequalities and disparities in wealth, income and skills are growing. Using the LIPS framework, the Brazilian research network RedeSist has explored:

- local knowledge generation and its use;
- promotion of productive and innovative development at various scales, including local; and
- policies that might increase cooperation between various actors and lead to innovative activities.

Figure 1 outlines how the global system interacts with the national system of innovation and the local system, which has its own subsystem of interconnected activities and linkages, impacting what happens at the local level.

Figure 1: The LIPS and its subsystem of production and innovation; adapted from Matos et al., 2017



Source: Cassiolato et al., 2018

Several authors have noted gaps in the NSI literature and how this may apply to developing countries (Kraemer-Mbula & Wamae, 2010; Muchie et al., 2003; Wilson, 2020). For example, the NSI does not focus on entrepreneurs and small enterprises which require a different level of support, which are the areas where many employment opportunities exist in developing countries. The LIPS framework allows for 'encompassing all types of production and innovation structures' and 'assumes that some kind of system always exists around every production activity, however fragmented and unstructured it may be' (Cassialato et al., 2018: 5). The framework also allows for spaces in which production takes place to be recognised. This makes way for seeing the local sphere as a space for driving innovative economic and development activities. RedeSist's methodology to analyse LIPS can be summarised as follows:

1) Articulation of the LIPS territory

   This includes an understanding of:

   - the global geopolitical and power dimensions within which productive and innovative processes take place;
   - the impact of institutional and legal frameworks;
   - how production and competition are organised at a global and national scale, and their influence on local actors and LIPS development; and
   - how knowledge flows across and between different regions and territories.

2) Consideration of existing endogenous structures and processes

   Here we look at how they influence the following:

   - innovative activities and cultural dimensions to support innovation;
   - capacity for learning, production and innovation;
   - cooperation between local actors;
   - the local environment, infrastructure and territory; and
   - support for improving and driving innovation (Cassialato et al., 2018).

The framework affirms that enabling policy and infrastructure must exist to encourage, facilitate and support innovation and transformation. Knowledge and other transfers should also take place in a way that encourages innovation. This is where the RedeSist LIPS framework becomes helpful because it breaks down these requirements to a local scale.

We applied an analytical framework for reviewing the experiences of three cities across Africa: Accra, Nairobi and Tshwane. We wanted to understand how the LIPS framework could be used to study innovation-driven economic activity and ecosystems, and local government's role in facilitating these.

African city-driven economies

Because of their diverse nature, ability to attract people from different backgrounds, skills bases, experiences and ideas, cities have remained the centres of development in modern economies (NUA 2016; Peter Hall 1998). African cities are no exception (SACN, 2017; UN Habitat, 2018). The complexity of cities with their constant ebbs and flows require city governments to be constantly alert to change which may require new and updated infrastructure and services. Cities' abilities to be responsive determines the extent to which they can harness creativity and enable the necessary innovation. However, even though they are ideal locations for creativity, innovation is not guaranteed and many cities do not succeed in driving innovation (Johnson et al., 2011). A set of conditions needs to exist to create the potential for innovation that gives rise to an enabling ecosystem. Firstly, proximity is key. The location of various sets of actors determines the extent to which they can interact and draw from each other's respective knowledge and learnings. Secondly, there must be some realisation of the potential for innovation, and there must be development of knowledge and ideas to give rise to innovative activities (Johnson et al., 2011).

Challenges facing most African cities

Most African cities are characterised by major challenges. These range from:

- inadequate infrastructure and services provision;
- inadequate management;
- high levels of inequality among their growing populations;
- informality and vulnerability; and
- the devastating impacts of climate change (SACN, 2016).

Cities are required to meet these challenges at the same time as building competitive economies and encouraging investment (Johnson et al., 2011). The Covid-19 pandemic exacerbated the situation and highlighted the vulnerability of economies, as well as global health inequality.

African urbanisation has occurred at a rapid pace. Projections are that by 2030 the continent's population will rise to 1.7 billion souls, of whom more than 80% will reside in cities (Leke and Signe 2019; United Nations, 2015). The age of Africa's urban residents (60% were under the age of 25 in 2019) also makes its population the youngest in the world (Brookings, 2019). Africa has the highest youth unemployment rates in the world, mostly concentrated in low income and informal areas. Finding ways to integrate a youthful population into the economy is even more urgent.

African economies have historically been associated with extraction of natural resources. However, this has gradually shifted because of the imperative for sustainable growth and long-term interventions (SACN, 2017). There is new scope for innovation-driven interventions. The diversity and variety in these spaces could impel African cities to become principal drivers of their economies. The potential in the informal sector, and the creativity that surrounds it, provides an opportunity for Africa's youthful urban population to take on the challenge – if supported and adequately enabled – to spearhead economic transformation and innovation.

Methodology for this study

As noted earlier, we used a qualitative, exploratory methodology for our research. This included a desktop literature review and key informant interviews. These methods were appropriate given our intention to introduce a different perspective to the question of inclusive development which is typically looked at from a macro perspective. An important starting point for us was to synthesise the innovation, mainstream economics, and local-urban development literatures. We covered existing scholarly and grey literature, primarily focusing on three key themes:

- inclusive economic growth;
- national and local innovation systems; and
- local economic development and the role of local governments.

Applying the LIPS framework from Brazil to examine the roles of local government in driving inclusive economic development and innovation in Africa required some primary research. Informed by the LIPS framework and its key components, we developed a structured questionnaire. The core question we asked was: "How can local innovation and production systems in Africa contribute towards inclusive access, ownership and economic growth?"

We selected three African cities for our case studies: Accra, Ghana; Nairobi, Kenya; and Tshwane, South Africa. All have strong research and development concentrations. While not representative, or even necessarily comparable, we considered these cities to be a relevant sampling for our project's exploratory purpose. All are stable capital cities, and are geographically dispersed in west, east and southern Africa. We identified respondents who could represent the local government authority, private sector and civil society, sometimes with informant roles overlapping. This resulted in eight respondents: two each from Tshwane and Accra, and four from Nairobi. The majority (62%) were a part of local government; twenty-five percent were generally within the civil society sector, and 13% from the private sector. The sampling was purposive and the cities we chose are somewhat comparable capitals. We wanted to focus on municipal informants and obtain complementary non-government input from business or knowledge actors. Ultimately, it was a convenience sample based on who responded and honoured the interview requests. Given the small sample and the complex, silo-structure of local governments, their views cannot be considered to be representative of the municipalities on the continent.

The research was considered a dipstick test of the LIPS ideas in Africa, with the benefit of some comparative analysis to understand contexts. Our interview tool focused on three domains, which are based on the LIPS' framework (Cassiolato et al, 2018) and outlined in Figure 2.

Figure 2: LIPS analytical dimensions

Source: Authors

1) Governance

   We asked about the structure of the country's governance system and the local sphere's level of authority in managing the local economy.

2) Clustering or ecosystem development

We wanted to understand whether close inter-firm communication, sociocultural structures and institutional environment could stimulate collective learning, continuous innovation and economic activity that benefitted everyone.

3) Infrastructure development and financial capacity

This question asked what role the local authority plays regarding its provision of infrastructure, and its ability to pay for infrastructure development.

4) Knowledge generation and research and development (R&D)

Here we asked about activities in the area, the flow of information between different actors, and local authority's contribution towards economic activities or innovation.

5) Market conditions and the economy of the city

We wanted to know about market conditions and about the economy of the city, and about various actors' level of participation, and the ease of, and accessibility to, economic activities.

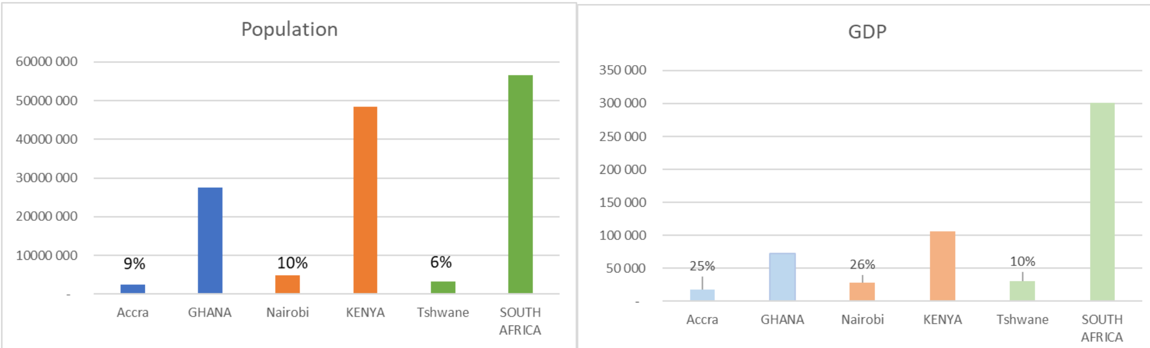
Our sole aim was to begin to explore a deeper understanding of how we can think of, and study, multiple levels of economic development in the African context. Specific limitations to the study are: limited data availability, the small convenience sample used, and the limited number of interviews conducted. The latter was because of the constraints of doing interviews during the Covid-19 pandemic.

In Tshwane, we had to use secondary sources and our own contextual and professional knowledge to fill in some gaps, because the interview with the private sector was not secured in time. All of these factors suggest our findings should be treated as indicative, and the city comparison regarded with some caution. We did not conduct surveys, and did not undertake a comprehensive analysis. This paper is therefore a preliminary application of the LIPS framework using its core dimensions to test their salience in a different context.

Three African city case studies

Three cities were identified for this research: Accra in Ghana, Nairobi in Kenya and Tshwane in South Africa. Figure 3 shows their estimated relative size in national population and economy

Figure 3: Estimated city and country size comparisons



Source: Authors[1]

The countries' governance systems are outlined in Table 1. Comparative analysis shows that the cities are similar in some ways, such as relative population size and constitutional shifts towards decentralised governance structures. And they have some variances, such as the comparatively large size of South Africa's national economy.

[1] The statistics are estimates for 2019–2020 compiled from various sources including: The World Population Review; African Development Bank Group's Country Strategy Papers and Country Portfolio Performance Reviews; and the City of Tshwane IDP / SDBIP Scorecard Submission (2020).

Table 1 : A comparative look at governance systems

	Accra, Ghana	**Nairobi, Kenya**	**Tshwane, South Africa**
Governance	Ghana has pursued legal and administrative decentralisation since the 1990s. Its current decentralised system includes national and regional levels of governance, with local level metropolitan, municipal and district assemblies. These district assemblies have town councils and specific issue-based committees.	Kenya is a unitary democracy. It adopted a devolved system of governance after the promulgation of a new constitution in 2010 which made constitutional provision for county governments who may by law appoint urban boards.	South Africa has a devolved three-tier system of governance: national, provincial and local.
Governance details	While the national government is considered responsible for most aspects affecting citizen life, the system of local government was introduced to engage much closer with citizens and create local structures.	Kenya has 47 county governments which serve as semi-autonomous, or devolved local authorities – each with an elected assembly, governor and executive committee. Local authorities have their own cabinet and budgets which they receive from national to implement their county development plans. The decentralised system is intended to entrench localised implementation.	Local governments in South Africa receive a proportional share of revenue from national, and are also allowed to generate and collect their own revenue to implement local plans.
Legislative framework	The Local Governance Act (2016) provides the legislative framework, including specifying the funding, planning and regulating procedures at various levels.	County Governments Act 2012 and the Urban Areas and Cities Act 2011.	Key pieces of legislation govern how local government should function within the constitutional framework. For example, the Municipal Structures Act (117 of 1998) outlines the different municipalities in the country and their various categories. The Municipal Systems Act (32 of 2000) defines how local government should work, including its various roles and responsibilities. Spending is governed by the Municipal Finance Management Act.

Source: Authors

Comparing Africa to Latin America

We sought to indicatively apply the LIPS approach developed for application in Latin America (LAM), specifically in Brazil, and apply it to the African context. It is useful to reflect briefly on the validity of this in the light of relevance and contextual comparability. There appears to be no significant disjuncture with the LAM findings (Cassiolato, 2020).

Regarding context, which is also critical for a local framework, the question might be asked whether the translation from LAM to Africa is credible. There are some strong similarities in trajectory and context that suggest it is indeed credible.

- Firstly, African countries, like Latin American countries, suffered negative impacts of north-driven structural adjustment programmes of the 1980s and '90s. This included having extreme regional and spatial disparities.
- Secondly, in both contexts, the economic and innovation system focus has tended to ignore informal activities. In Brazil informality accounts for more than half of the occupied workforce. This is similar to informality in many African countries.
- Thirdly, the sectors that become important for local analysis are very similar. A decision was made to centre the LIPS research agenda on agriculture and services, "namely family agriculture, essential public services, tourism and cultural activities, including small-scale and informal ones" (Cassialato, 2018).
- Fourthly, the concern about local government weakness seems to correspond in both contexts (Cassialato, 2018).

One area that may be somewhat different is that Brazil's economic system is strongly connected to global value chains with uneven power relationships and endemic, large transnational corporations. This impacts offshore innovation and production activities and the disarticulation between new investments and strengthening of the local R&D infrastructure; it results in low technological capabilities of locally-owned suppliers, and little interaction for innovation (Cassialato, 2018). African economies are not as integrated with and subordinated to global value chains. However, while this does not affect the question of whether, or how, to strengthen local innovation and production systems – it may perhaps distinguish the why.

Three-city study findings

The study involved interviews with informants from all three cities. We wanted to understand the nature of their local innovation and production systems, and explore how they could be levered to contribute towards more inclusive economic growth and development. The conversations were rich and informative, particularly because the questions we asked at first seemed curious, or unusual, to the respondents. This perhaps indicated the extent of separation between what are conventionally seen as national or macro-economic issues – such as economic inclusion and innovation systems – and typically local affairs, such as planning and services.

Cities' perspectives

All respondents indicated that their cities or local authorities were not playing a significant or adequate role in economic development and economic inclusion. These sentiments were emphasised in particular in Accra and Tshwane. While all three countries have some level of devolution, respondents said that in reality local governments are seen as the implementers rather than strategic drivers and enablers of economic and social development. National government's dominant role was noted as a major challenge because it did not allow local authorities to take responsibility for local level implementation. This was the case despite their ability to better understand their local context, opportunities and challenges, and their closer proximity to communities and businesses. At the same time, local authorities themselves struggled to secure more influence and authority over economic and other interventions. A reason one respondent gave for this was the difficulty of persuading local authorities to play a more strategic role.

However, there was appreciation for the role of top-down policy drivers and national policy in giving credibility and importance to strategic interventions. In Accra, this was considered important because of local government's lack of authority. In Nairobi, strong national leadership and institutions are regarded as important for driving policy interventions. An example of how Tshwane addressed the challenge of top-down leadership was by introducing innovative local ways to support local business through innovation hubs. The hubs provide initial start-up support and infrastructure in the initial phase of small business development.

Findings across the LIPS dimensions

We used the Brazilian LIPS framework to study the three African cities. We wanted respondents' perspectives on the relevance, effectiveness, and implementation of the framework's principles for creating more inclusive production systems in their cities. Respondents' insights and feedback are captured below.

Governance

A set of common themes emerged. One key theme was cities' governance arrangements. Respondents agree their cities do not play a significant role in economic development and economic inclusion. Respondents from Tshwane and Accra made this point strongly; and this can be attributed to how the system of governance is structured in these countries. For example, in Tshwane, while the city's role at the location of economic activity is to some extent acknowledged, the city does not participate in decisions around economic policy which happens largely at the national level. In South Africa, cities are considered key drivers of local economic development, but largely around smaller-scale economic activities, rather than as a strategic consideration to enable and drive activity in their municipality that is linked to the broader national economic strategy. In our engagements with respondents, there was recognition that despite the governance arrangements which constrain them, cities could do more to expand their role. While the Tshwane respondents understood how local governments might drive more strategic approaches to economic development, in Accra and Nairobi the sentiment was different. In these cities, respondents felt that unless the drive was top-down, not much would happen. This was because of power and fiscal control being centralised in the state. For any economic strategy to be successful it would be critical that national governments buy into and champion the strategy. This top-down approach made it even more difficult for officials to make the case for why local governments in these two cities should play a larger, more strategic role in driving economic development. It would also mean that officials are less likely to come up with innovative ideas, or push for better funding or other forms of support for local initiatives.

Ecosystem development and clustering

Clustering – grouping certain activities that are similar, or go together – of economic activities and actors in Accra, with the potential to shape major conversations and entities around strategic issues, such as climate change and its impact on the community, and the role of city authorities, was thought of more regionally than locally. However, the notion of clustering was considered to be something of medium importance, and was not currently being pursued.

As with Accra, clustering in Nairobi was thought of in the context of regional engagement and participation. Nairobi is the central hub for employment and economic activity and the Nairobi Metropolitan Authority (NMA) plays an important role in connecting the various regional actors and counties within its proximity. The building of stronger connections and networks to enable and generate access to opportunities is thus considered critical.

Tshwane respondents discussed clustering in their local context. By hosting industry forums, various actors are brought together to share knowledge and resources. This allows emerging black entrepreneurs better access to potential supporters and investors. The clustering approach helps people identify gaps in what is needed to address local issues, and introduce solutions that encourage investment. It is something officials said they felt they had little authority and influence over.

Infrastructure development

All respondents recognised the need for infrastructure such as roads, reliable electricity provision, and access to water as critical for economic and social development, and to promote innovation. While there have been investments in infrastructure across all three cities, respondents all emphasised the need for further improved infrastructure to allow for greater inclusivity of people in the social and economic life of these cities.

In Tshwane, despite massive investments, access to reliable infrastructure remains limited. For traders, inner city spaces with better infrastructure means higher rental fees. In historically disadvantaged black townships, no dedicated spaces exist in which to do business. As a result, many township entrepreneurs use their homes or trade from the streets. Although Accra and Nairobi do not share South Africa's apartheid legacy of race-based spatial underdevelopment, they too suffer from poor and inadequate infrastructure planning in poorer locations of the city which have been left to evolve organically.

Access to information and communication technologies (ICT), an essential element in driving innovation and, in turn, access to various economic and social opportunities, differed across the three cities. In Accra, ICT access and skills development was seen as an important way to empower people to increase economic activity.

Public and private investments in Nairobi highlight the recognition of the need for access to reliable and affordable internet connectivity. Kenya is considered one of the leaders in internet penetration on the continent (Koyama et al., 2021).[2] Respondents recognised new technology's role in providing opportunities for better organised economic activities, and for providing economic services. They said with ICT things become easier, such as how services are paid for, or providing training, and how this could have a long-term positive contribution to the economy. This, in turn, can lead to innovations which improve services and economic access, and it can also simulate further creativity among various actors who contribute towards economic growth.

Tshwane and Accra city officials felt they had authority over the development of effective infrastructure but lacked the financial capacity to provide it. Given the challenges faced by mainly black-owned businesses in accessing infrastructure for trade in Tshwane, the lack of funding to address these gaps is critical and needs to be addressed. Currently, small-scale traders are subjected to extremely high rent in well-located areas, while in the townships there is insufficient space to do business. Officials said the provincial and national government and the private sector needed to step up and play a role in providing infrastructure. Respondents also noted there was a lack of effective and adequate planning for cities and this leads to infrastructure gaps. The situation is exacerbated by implementation challenges, poor cooperation and engagement between relevant actors, and corruption.

Knowledge generation and research and development

Respondents in Tshwane and Nairobi recognise there is extensive knowledge production from, among others, their local universities and research institutions. Knowledge and information is not shared strategically; nor is it targeted in a way to encourage creativity and learning. Instead, the production and application of knowledge, as reflected on by Nairobi respondents, is very individualised rather than institutional. Nairobi respondents lamented that African governance is very individualistic and there seems to be little desire to pass on knowledge, or to develop and produce research and insights aimed at addressing Africa's biggest challenges.

Tshwane respondents also indicated that the flow of information and knowledge between business, local economic actors and other institutions was insufficient. Relationships exist on a one-to-one basis when it comes to piloting or supporting innovative interventions, and only when the city initiates them. The overriding sense was that there wasn't a culture of sharing and engagement around creative ideas.

In Accra, there have been discussions around how to collect real time big data to help the city plan properly. But funding dried up and this hampered the process. Research and development is high on the agenda. Ongoing efforts are underway to access data that would help with planning and insights.

Cultural specificity came up. Respondents spoke about needing contextualised frameworks aimed at studying and producing knowledge about local economic issues. They highlighted how innovation literature and other academic

[2] More than 65% of Kenyans over the age of 15 have access to the internet, and mobile phone penetration is high with 98% of Kenyans older than 15 owning a SIM card. Mobile money penetration is similarly high with 94% of Kenyans older than 15 using mobile money. The latter is crucial as many informal sector workers do not necessarily have access to formal banking services.

concepts tend to exclude the African continent's experience. Respondents wanted more consideration given to Africa's local specificities, and how such thinking might better serve what may be some uniquely African challenges and conditions.

Market access

All three sets of respondents expressed frustration about the onerous process of registering businesses in their cities. Cumbersome red tape, such as registration processes and waiting times, discouraged people from investing in developing commercial areas, and from starting businesses.

In Accra, respondents noted the need to structure and steer the local economy. Instead of leaving the economy to develop on its own, respondents saw that actors needed support, and that the local municipality needed to properly mobilise its own internally generated revenue. Respondents noted there has to be a way to identify and build economic pipelines to organise better access to markets. However, it is potentially an issue of political authority: the Ministry of Trade and Industry is the core authority on economic matters. This was similar in Nairobi. Respondents gave little engagement and feedback on how the local authority facilitates and supports improved market access for economic development and inclusion in the city as they do not consider themselves to have authority over this area.

Tshwane officials, however, saw market access as a key area and one where they can exert authority. To this end, they actively lobby the private sector to access small-scale markets and buy local products. Across the three cities, respondents tended to highlight the potential role of the informal sector and what contribution actors could make within it. Officials recognised the private sector's role and the importance of building and supporting relationships between private sector formal actors and new entrants to the market, both formal and informal. However, they did not consider themselves to have much influence over or responsibility for formal or big businesses. Officials may understand they have a role to play in managing public space and services, but despite their active lobbying where possible, don't feel local government can exert any power over the formal private sector's decisions or direction,. Where specific reference was made to the formal sector, this was in relation to startups and small medium and micro enterprises (SMMEs). They referred to Tshwane, and how formal sector actors could better facilitate access for emerging entrepreneurs and innovative ideas coming from informal activities and industries. Thus, while they acknowledged that formal business actors have a significant role to play, respondents chose to speak about the economic sectors that are underserved, and that they have greater traction to drive more inclusive approaches in their respective cities.

Local government's role: Our findings

Several common themes arose that were considered central to local government's role and its ability to facilitate inclusive economic growth and development in Africa.

a) Centralisation and limited powers and functions

Respondents all mentioned decentralisation as a way to allow either better service delivery from the state, or to generate greater inclusivity for residents of the city. In Accra, respondents raised fiscal decentralisation as a particular issue, and as a way to address the local government's budgetary limitations. They lamented the city receiving only about 5% of the overall revenue it contributes towards the government. In addition, they do not have the power to raise revenue on their own for strategic development objectives. This means they miss many opportunities to make strategic decisions and investments that might benefit the city's economy and its people. Tshwane respondents added an issue regarding the role of communities. They said communities should be allowed to take ownership of certain processes as they may have innovative ideas to address their specific day-to-day challenges.

'Communities tend to have rich solutions but you almost sense the frustration if there's a water problem, a waste problem, the solutions are there but the access for them to come in and then work and co-create solutions is very difficult. And we try within our little limited sphere of influence to address that issue,' a respondent told us. They added that this frustration leads to lost opportunities to create new businesses and jobs. Given the informal sector and developmental challenges, devolution of this kind would present a novel way to address inclusion and inequality.

b) Alignment between development planning and economic strategies

Across the three cities, interviewees indicated that their local authorities are responsible for planning and executing physical development. However, there is poor alignment with national level economic policies and, as noted earlier, little to no engagement with local governments around economic policy and strategy. In Ghana, the Ministry for Trade is responsible for economic planning and investment. South Africa has a Ministry for Trade and Investment and a Ministry for Small Business Development. In Tshwane, it is not apparent what, if any, alignment there is between its local plans and those of these two ministries. The status quo of infrastructure for small business initiatives to trade around the city suggests that ongoing city planning does not take traders' needs into account. Provision tends to be more piecemeal rather than part of the broader infrastructure plans. Both Accra and Nairobi demonstrated little alignment between planning for the city and its infrastructure as a whole and people's access to economic activities. Policy coordination and planning is largely done by their central governments' ministries and agencies. It is then filtered down to the local level for coordination and engagement. However, respondents noted there is insufficient planning around creating adequate infrastructure and access, and that much of what is in place evolved organically, with many residents continuing to face significant challenges in accessing economic opportunities.

Accra respondents said the local authority should receive the mandate for planning around the local economy because they have the skills and information for proper alignment. Nairobi seems to be more advanced than the two other cities as regards access to telecommunications and Wi-Fi. Connectivity is high and even poorer communities can access Wi-Fi and data. However, this is not necessarily capitalised on through having more effective planning and development.

c) Financial capacity

The ability to afford start-up costs and have the necessary funding to maintain consistent production was considered an important component for enabling and facilitating economic activity in all three cities. Effort was made to fund entrepreneurial activity in SMMEs and marginalised economic groups. In Tshwane, emphasis was placed on this. The city engaged various funders across the public and private sector to sponsor some pilot projects. Similarly in Accra and Nairobi respondents said funding is provided to small and medium enterprises, with a focus on supporting women and young people. In Nairobi, funding was guided by a procurement framework aimed at increasing participation of people in previously disadvantaged or vulnerable categories. Some loan schemes are also in place with the caveat that these might have the unintended consequence of people getting into debt.

Most respondents noted that funding for economic activity was largely centralised and that national governments exerted authority and influence over spending in general. Central governments were also the key decision-makers for economic policy and interventions. There were slight variations: Tshwane was soon to generate some of its own revenue. This could only happen in theory in the other two cities as part of their decentralised approach. As a result, the local authorities in this study have limited space to make choices about their budgets and to make interventions that could drive economic developments. However, even Tshwane acknowledged it did not possess full financial capacity to drive economic innovation in its region. It often had to rely on provincial and national authorities, as well as the private sector's roles. Also, local government does not really feature in decision-making with private sector finance, foreign direct investment, or philanthropic funding.

d) Creating new knowledge

Given the prevalence of major economic players as well as academic institutions, particularly universities, across the three cities, it is surprising how little R&D appears to take place in direct support of their local economies. This proximity between knowledge institutions and economic actors, both formal and informal, could lead to greater use of data, monitoring, assessment, knowledge generation and learning to help inform economic activity. In Accra, one respondent noted that knowledge generation was important but acknowledged that the sourcing and analysing of data was still in its infancy, and that lack of financial resources have hampered progress. In Tshwane, there are numerous partnerships with both the private sector and academia but little cross-referencing that would allow for information-sharing to guide better planning and implementation. More research may need to be conducted on how to unlock this wealth of knowledge and potential in each city, and incorporate it into inclusive economic growth and development city planning.

e) Trust

Lack of trust among various actors in the cities was not explicitly mentioned; it was alluded to. There seems to be little trust between governments and the actors they aim to support. In all three cities, corruption and poor decision-making cause low levels of trust in government generally – and in local government in particular – that issues facing communities will be tackled. In particular, people in more precarious, informal contexts have little reason to engage with and trust government officials. This may be because often attempts to assist them are meant to lead to formalisation without officials having sufficient appreciation that this might make it more onerous and expensive to do business and earn an income.

There also seems to be distrust between different levels of government. Local officials felt national government directs them too much rather than trusts them to know, plan, and implement what they believe to be the most effective interventions in their local regions.

f) Informal sector inclusion

The issue of informality is complex. Despite the challenges officials associate with it, informality is also seen as an example of African innovation and resilience. An interesting point emerging from the interviews was the nature and identity of the informal sector in the African context. Informal sector actors are often highly innovative and create much more user-friendly and useful outputs than they are given recognition for.

Informal sector actors operate in the most extreme environments. However, in some instances, they have even surpassed what is produced in the formal context. The *jua kali* in Kenya is an example of this. They have developed accessible and affordable products and services of high quality. As this informal sector continues to grow, it will be crucial to support and invest in it without inadvertently impacting on the very things that make it so accessible, for example by over-regulating or attempting to formalise the sector. All respondents acknowledged the resilient nature of the informal sector; they recognised the 'hustle' of African entrepreneurs and traders. Interventions and regulation should focus on areas where there might be negative impacts on the local economy. For example, in the Kenyan and Ghanaian clothing sectors the import of cheap foreign products can flood local markets. It has the potential to destroy any local textile and clothing markets (Owusu et al., 2022).

Recognition of the informal sector in these three countries is far from adequate at both national and local levels. At the local level, where interventions are likely to have the most impact, cities do not possess the roles and functions to create support systems for the informal sector; these are not local government functions. Examples of state interventions include providing economic and social safety nets, and an enabling economic and labour context. Interventions to date have mostly focused on the creation of innovation hubs and incubators. But these are merely band-aid. Support is provided at the start of a project but overall the economy does not enable sustainability.

Once a start-up leaves the incubator programme, there is little chance of it succeeding, as experiences in both Tshwane and Accra show. Given the extent of their informal economies, it is impossible for any of these cities to ignore the informal sector or underestimate its role in favour of big formal businesses. The informal sector's contribution, size and potential for contributing towards the broader economy should be factored in. Rather than just attempting to formalise and regulate, there should be some engagement around scaling up from the bottom that does not impact adversely on these activities.

g) Public sector innovation

Many officials think innovation is unlikely to emerge from the public sector which is hamstrung by formal constraints and because even within its own ranks, finding innovative and creative ways to address issues is long and onerous. An example of a creative response, however, is in Tshwane; the city introducing innovation hubs that allow emerging small businesses to access infrastructure and resources during their early incubation years. However, rather than equip the small businesses for independence, given the tough nature of the economy, many have become reliant on this support. They struggled once they were no longer part of the hub, partly due to the lack of available capital and accessible markets. Tshwane officials have acknowledged this, and their emphasis has been on creating improved market access for small businesses.

h) Roles of Quadruple Helix (Q4) actors

There was discussion around knowledge production and a knowledge ecosystem. This refers to the various actors who could benefit from knowledge flows, including government, business, academic institutions and communities. There has to be a stronger connection and conscious knowledge sharing with community actors, particularly with SMMEs and those involved in informal activities. To enable this, there are specific roles each actor needs to play in the system. However, current experience shows that the roles are not fully developed or working. Various respondents raised issues which are summarised in Table 1.

Table 2: Roles for different actors in driving and supporting inclusive economic development

Local government's role	Private sector's role
Local government's role » Facilitate better policy/strategy/planning alignment. » Enable local knowledge production. » Influence effective and efficient information flows. » Enable and invest in smart infrastructure that might facilitate the creation of new and productive economies. » Leadership insights and vision to push for local government to play a more appropriate role.	**Private sector's role** » Engagement and partnership between private sector and other actors in the local economy. Tshwane gave an example that the private sector could invest in SMMEs but that it also needed to help develop markets for them to flourish. » Recognise that the gap between formal and informal sector is not as wide as assumed. » Social responsibility.
Academia's role » Nairobi and Tshwane in particular challenged the purpose of knowledge institutions given their disconnection from local economies. There is literature to evidence this crucial gap. » The city's massive knowledge endowment ought to translate to direct benefaction in local development terms (Petersen & Kruss, 2021), and yet does not seem to do so at scale (SACN, 2012).	**Communities/civil society's role** » Accra and Tshwane both noted that communities could play a much more active role to augment and support government strategies, and not just push for accountability in the delivery of services. Tshwane gave an example of entrepreneurial opportunities in community-based waste management.

Source: Authors

The role of local government: Possibilities and constraints

Given the political and leadership challenges across the three cities, trust in local government seemed low. Might increasing the role of potentially weak or incompetent local governments in driving economic development further compromise an already precarious economic situation, made worse by the lockdowns over the past two years? However, despite this lack of trust, and ongoing challenges of corruption and mismanagement, local governments are best placed to deal with local-level challenges. Given their close proximity to citizens they are responsible for providing services to, they remain an important actor.

The LIPS framework allows for recognition that, even though economic activities may not be traditionally structured, visible or organised, there is always some kind of rationale at work that may make a positive contribution towards the overall economic system. In spaces like the three African cities discussed in this paper, the LIPS framework offers a very useful lens as it emphasises the different scales of operation, including recognition of the economic potential at the local level.

Despite its challenges, local government is crucial in contributing towards the local growth and development of African cities, and particularly in enabling and facilitating cities that are inclusive (SACN 2017).

Some ways to encourage local government's stronger role is to provide better incentives for actors to act. If local governments and their officials are sufficiently rewarded for reducing inequality, they may be more inclined to play an active role in enabling inclusive economic activities that would assist with reducing the unequal nature of African cities. If incentivised to be innovative, officials will be better placed to move beyond bureaucratic constraints and to encourage creativity in the ecosystem. This could support and harness informal communities' creativity and innovation. Examples of rewards include specific funding for innovation, recognising where innovation is taking place, and supporting the scaling up of initiatives. Through our interviews, we identified some gaps that need to be addressed for African countries to innovate their economies.

Public sector innovation

There is little innovation in the public sector itself. Much of this has to do with government's compliance-based culture – not wanting to fail or make mistakes. Cities themselves have to consider what can be done locally to innovate. The Tshwane respondent noted this as one of the major challenges in their city, and that it is nearly impossible to facilitate and encourage a culture of innovation in the broader city context when the public sector itself continues to employ dated technologies and approaches.

Leverage green growth

Climate change and building resilient economies have become crucial preoccupations at every level, everywhere. African cities are among the most vulnerable to environmental and health challenges, but very little is said and done about investing in the green economy locally. It is here where there are a myriad of opportunities for communities and entrepreneurs to invest. An important opportunity to address climate mitigation and climate justice issues needs to be harnessed. As a coastal city, Accra particularly emphasised this point.

Leverage and support informal energy

Much of the focus on economic growth and development to address inequality tends to be directed to education and training; to get more skilled entrants into the labour market. But there could be a greater focus on nurturing and cultivating non-traditional skills. Young people must be engaged with, along with other people who live in and make their living from informal activities, to hear their vital inputs and experience. We need to ask how we could harness and further expand creative energies and ideas that exist on the margins to make important contributions to people's lives.

There are vibrant economies and activities that operate across cities. But with our traditional conceptualisations of economic activity, they are often not seen for their potential contribution. It is here where the local level focus, with particular emphasis on local needs and peculiarities, could allow for focused interventions and support.

Include the excluded and marginalised

Another area for consideration and response is in the context-specific dimensions of inclusion. For example, respondents noted that policies that focus on the economic inclusion of specifically women, young, and disabled people are needed.

In countries such as Kenya and Ghana, people from some ethnicities face barriers, highlighting the need for more nuanced engagement and responses. Similarly, foreign nationals in South Africa face barriers and challenges that require specific attention.

We recognise that local governments across the three countries have experienced well-documented challenges related to corruption and poor administration. As noted earlier, there is no guarantee that a bigger local government role will result in innovative economic practice without any challenges. The political and administrative challenges that plague local governments will likely continue to hamper officials' ability to drive and facilitate more innovative and inclusive thinking. However, this does not necessarily negate the argument that local government is well placed to be an important actor to facilitate inclusion, particularly for more marginalised and informal sectors. In addition, the challenge of corruption and maladministration is not unique to the local sphere of government. Thus, the potential challenges are acknowledged and further studies may investigate strategies for how these endemic obstacles to progress may be navigated and overcome.

Conclusions and recommendations

The LIPS framework enables us to consider the micro, meso and macro dimensions when analysing a country's economic performance (Cassiolato & Lastres, 2005). The framework has been indicatively used in this study to interrogate the role of African cities and their local actors, including local government and other quadruple helix actors, in enabling innovation-driven inclusive economic growth and development. Our findings suggest this role at local level has been inadequately developed. Our study also finds that there are some positive movements in the African city contexts. For one, there is increasing recognition of the local level's importance. The New Urban Agenda (2016) Sustainable Development Goal 11 on sustainable cities and communities includes a target to support positive economic, social and environmental links between urban, peri-urban and rural areas.

There are increasing numbers of national urban policies (NUPs) and local economic development frameworks which amplify the role of cities in economic thinking and planning. As national economies struggle, exacerbated by the Covid-19-era, there will be an increasing focus on local innovation and creativity; the local response will typically tend to be most efficient. This creates opportunity for more, or less, conscious and inclusionary economic practices. There are also positive signs regarding the valorisation of informal economies in the global South. A number of countries, including South Africa and Ghana, are beginning to develop enabling policy responses.

However, what our study really centres is the underdeveloped role of local government in innovation systems. City governments could clearly play a role in strengthening inclusion in local realities. They could:

- support, among others, innovation and entrepreneurs. Currently, they just act as a cog in the prevailing national system's wheel and economic logic, ignoring – and possibly exacerbating – exclusion;
- be important levers, enabling equitable economic outcomes by, for example, strengthening the local economic planning and making better planning connections;
- increase sensitivity to existing informal sector economies and local industries; and
- identify and enable new innovation ecosystems that have been emerging, alongside traditional industries, such as the gig economy, startups, digital space, and civic technologies.

Local governments can more easily work across all the Q4 actors around practical, local issues and opportunities, particularly emphasising the typically marginal civic and academic actors. But, as indicated by a City of Tshwane respondent, cities can only do this if they have an innovation or entrepreneurial mindset themselves, as a public service. A broader understanding of innovation focuses not just on R&D activities and big business. It also focuses on learning and innovation in what people are doing (Cassiolato, 2015).

This short study begins to suggest the applicability and usefulness of the LIPS framework which is based on that thinking. We suggest that studies into inclusive economies could focus more on local innovation systems, and the roles of local economic actors. This requires generating more knowledge and data about African cities, for example, as a level for economic and institutional analysis.

Addressing the challenges which hamper inclusive systems of innovation and economic development across African cities will require attention to key issues we identified, similarly emphasised in other works (Adesida et al., 2021; Karuri-Sebina, 2017):

Address the basics

Providing finance, basic infrastructure, space, and facilitating access to markets are issues that recurred across the three cities. All the respondents referred to these as basics they are aware of, and are either in the process of addressing them, or planning to address them. This could be considered amongst the bare minimum of interventions they can make.

Un-formalise to respond to reality

Overly focusing on formalisation and regulatory reforms aimed at controlling informal sector actors tends to do more harm than good. It may be necessary to consider that where regulations are not in place, ways are found to provide enabling spaces that allow for creative and useful activities to continue, rather than placing onerous requirements that hamper or stifle them. More focus could and should be placed on determining what is needed to enable and encourage both large and small scale economic activities. The latter is often most affected by attempts at regularisation and bureaucratic red tape. Policy and strategy aimed at encouraging and boosting dynamic and innovative activity is needed.

Decentralise for real

While local authorities may have their challenges, they remain the best location for responding to specific local concerns, including guiding and informing what interventions could assist local economic development. They are also best placed to help strengthen and connect local innovation systems. Central governments should devolve powers and functions to strengthen local government's role in building inclusive local economies.

Cities themselves should own their role by acknowledging and supporting innovation. This includes bringing the various actors – or Q4 actors as noted earlier – together to play a role in innovation and knowledge clusters. National governments have begun to create national systems of innovation that encourage competitiveness and encourage boosting their country's innovation. But it cannot do this from a national perspective only. The national system of innovation should, in turn, be devolved to a local level. Frameworks should be created for the various actors to come together at the local space – the local system of innovation (LSI). Because innovation has a spatial dimension, this is where all actors are in close proximity; they can leverage this proximity and location.

Education and skilling

The move to more service-based economic activity, as highlighted by the Nairobi respondents, has significant consequences for African countries that continue to have low levels of skills and educational attainment. This causes a mismatch between the skills required and what exists in the country; and it points to the need to focus on education. However, this should include the broad-based development of entrepreneurs in the types of skills that can also be used for new industries and technologies. Furthermore, having the necessary know-how for entrepreneurial activities will advance especially young entrepreneurs and small business developers operating in the informal sector.

Strengthen ecosystems and multi-stakeholder alignment

It was clear from interviews that there is insufficient alignment and little cooperation between various actors. For markets to be accessible and new innovations and ideas to be taken up requires especially the private sector to play a role, and government to facilitate this. Innovation is already taking place across these sectors, but everyone is operating in silos: private sector, government, and communities. Very little recording, analysing, and connecting up is happening. For effective innovation and inclusive economic outcomes to occur there must be connections between the various actors, and between formal and those deemed informal.

Sector-specific enablers or barriers

Finally, it is also important to identify the specific areas for improvement or leverage, for example pooling resources; making processes less onerous; providing support such as insurance; and how to harness and protect specific niche industries that raise a city's competitive advantage.

We hope this exploratory research will lead to further studies and thinking about the roles of African cities in facilitating and enabling innovation-driven responses that lead to inclusive economic development.

References

Adesida O. and Karuri-Sebina G. 2013. Building Innovation Driven Economies in Africa. *African Journal of Science, Technology, Innovation and Development* 5(1).

Adesida O., Karuri-Sebina G. and Kraemer-Mbula E. 2021. Special Issue: Can innovation address Africa's challenges? *African Journal of Science, Technology, Innovation and Development* 13(7).

Backhouse J., Karuri-Sebina G. and Guya J. 2020. A South African Approach to Smart, Sustainable South African Cities and Settlements: Towards a SACN response to the COGTA National Smart City Framework. Johannesburg: SACN and SmartCity.ZA.

Brookings Institution. 2019. Foresight Africa: Top priorities for the continent in 2019. Washington DC: Brookings Institution

Cassiolato J. and Lastres H. 2020. The framework of 'local productive and innovation systems' and its influence on STI policy in Brazil. Economics of Innovation and New Technology 29(7).

Cassiolato J. et al. 2018. Local innovation and production systems: RedeSist's conceptual framework and. analytical methodology. In: 2018 Globelics conference, Accra, Ghana, 25 October 2018.

Cassiolato J and Lastres, H. 2005. Innovation Systems and Local Productive Arrangements: New Strategies to Promote the Generation, Acquisition and Diffusion of Knowledge. *Innovation: Organization & Management* 7(2).

De Matos M., Cassiolato J. and Lastres H. 2018. Windows of Opportunity and Death Valleys in STI Policy Construction: Policy Dialogues in Brazil. *Science and Public Policy* 45(3).

Department of Cooperative Governance and Traditional Affairs (COGTA). 2016. Integrated Urban Development Framework: A New Deal for South African Cities and Towns. Pretoria: COGTA

Francis D., Valodia I. and Webster E. 2020. Preface. Inequality Studies from the Global South. London: Routledge Inequality Studies

Freeman C. 1995. The national system of innovation in historical perspective. *Cambridge Journal of Economics* 19.

GERA (Global Entrepreneurship Research Association). 2017. Global Entrepreneurship Monitor (GEM) Global Report 2016/17.

Hall P. 1998. Cities in Civilization: Culture, Innovation, and Urban Order. London: Weidenfeld & Nicolson.

Johnson B. et al. 2011. Cities as Development Drivers: From Waste Problems to Energy Recovery and Climate Change Mitigation. Aalborg University, Denmark.

Karuri-Sebina G. 2017. Entrepreneurship, Innovation-Driven Economies & Emergence. Second edition of the International Conference on the Emergence of Africa (ICEA), Abidjan, 28-30 March 2017.

Koyama N et al. 2021. Kenya's Digital Economy: A People's Perspective Report 2021. Nairobi: Dalberg. https://www.digitaleconomy.ke/assets/download/Kenyas_Digital_Ecomony_Full_report_Aug_2021.pdf

Kraemer-Mbula E. and Wamae W. (eds.). 2010. Innovation and the Development Agenda. OECD / IDRC.

Lal B. and Shipp S. 2013. 'National Innovation Systems: Invention to Innovation', in Stirling-Woosley et. Al. (eds), Unlocking the Potential of the U.S. – Japan – Europe Relationship. German Marshall Fund of the United States.

Lundvall B. (ed.). 1992. National innovation systems: Towards a theory of innovation and interactive learning. London: Pinter.

Mazzucato M., Qobo M. and Kattel R. 2021. Building State capacities and dynamic capabilities to drive social and economic development: The case of South Africa. UCL Institute for Innovation and Public Purpose, *IPP Working Paper 2021/09*.

Muchie M., Gammeltoft P. and Lundvall B. (Eds.). 2003. Putting Africa first: The making of African innovation systems. Aalborg: Aalborg University Press.

Muller J. 2013. An Other Path: Local Systems of Innovation in the South. In Forum for Development Studies 40(2).

Nelson R. (ed.). 1993. National innovation systems. A comparative analysis. New York, NY: Oxford University Press

Owusu S., Ndubuisi G. and Mensah E. 2022. Import penetration and manufacturing employment: Evidence from Africa (No. 2022-007). United Nations University-Maastricht Economic and Social Research Institute on Innovation and Technology (MERIT).

Petersen I. and Kruss G. 2021. Universities as change agents in resource-poor local settings: An empirically grounded typology of engagement models. *Technological Forecasting and Social Change* 167.

Rantisi N. 2002. The Local Innovation System as a Source of 'Variety': Openness and Adaptability in New York City's Garment District. *Regional Studies* 36(6).

SACN. 2017. BRICS Cities: Facts and Analysis 2016. South African Cities Network and University of the Witwatersrand: Johannesburg.

SACN. 2012. State of Cities - Tshwane Regional Report. Prospects for South African Cities: From Incremental Change to Transformation. South African Cities Network. Unpublished.

Schumpeter J. 1934. The Theory of Economic Development: An inquiry into profits, capital, credit, interest and the business cycle. Oxford: Oxford University Press.

Sharma A., Sousa C. and Woodward R. 2022. Determinants of innovation outcomes: The role of institutional quality. *Technovation* 118.

UN Habitat. 2018. The State of African Cities 2018: The Geography of African Investment. Nairobi: United Nations.

Wilson S. et al. 2020. Formalising the National Innovation System in a Developing Country. *The West Indian Journal of Engineering* 42(2).