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Editorial

V Jarbandhan

Chief Editor

Against the background of major corruption scandals in South Africa, for example the 'Arms Deal' (1999), 'Travelgate' (2005), Nkandla (2015), State Capture (2016) and 'tenderpreneurship' in national, provincial and local government, Maurice Dassah, in his article **'Effectiveness of South Africa's Legislative and Institutional Architecture to Combat Public Sector Corruption'** investigates the effectiveness of the existing legislative and institutional architecture to combat public sector corruption. The author argues that South Africa has in place well-developed anti-corruption legislative and institutional architecture to combat public sector corruption; although it is operationally ineffective.

In **'The Re-demarcation of Municipal Boundaries: Perceptions of Members of the Malamulele Task Team'**, Barry Hanyane focuses on the daily struggles of the old Malamulele Township (now referred to as Collins Chabane Local Municipality) and the immediate surrounding communities in the Limpopo Province who demand that their respective municipalities re-demarcate from the existing local demarcation arrangements in South Africa. The article reports on the perceptions of the Malamulele Task Team that was established by the same community to facilitate the establishment of a new municipality in the area in 2015.

City governments' capability for resilience is seen as the ability to adjust or recover rapidly from stress and shocks. In **'City Government's Capability for Resilience: Towards a Functional Framework'**, Louis van der Merwe and Gerrit van der Waldt uncover the factors that influence the overall capability of cities to become more resilient in general and the resilience capability factors (RCFs) in particular. The article reports the findings of an empirical study conducted within metropolitan municipalities in South Africa. It was established that various internal and external dynamics influence cities' ability to improve their resilience. Specific factors were identified for each governance domain. The article found that a systemic perspective of a city's resilience capability must consider the interdependence of RCFs in a national, regional, continental and global context; to uncover important interconnections and interfaces between the different layers or levels of resilience and to provide useful insights for executive, political, and administrative leadership, helping them improve city governments' overall capability for resilience.

Harlan Cloete and Frederick Uys, in their article **'A Collaborative Approach for the Management of Human Resource Development in Local Government'**, present a collaborative framework for Human Resource Development (HRD)

in terms of a Triad Approach to implement an effective HRD programme in a municipality. In this approach the organisational actors work collaboratively, with the internal organisational actors as well as external agents having the competence and performance commitment to change the HRD culture in municipalities. HRD implementation is collaboratively undertaken with the HRD facilitator in the human resource department, line manager and employees. In this framework, the employees are not passive recipients but participate actively in the process, thereby entrenching internal democracy. The authors argue that municipalities should invest resources (time and budget), with external support to redefine roles and implement the recommended collaborative structural changes in order to ensure that an enabling HRD culture is created.

In **'Local Government Democratisation and Service Delivery in South Africa: Quo Vadis? The Case of Ndwedwe Local Municipality'**, E Msomi, P S Reddy and S Zondi investigated the impact of local government reorganisation and transformation on basic municipal service delivery and the resultant impact on the quality of life of local communities in the Ndwedwe local municipality in KwaZulu-Natal. The article analyses basic service delivery, and identifies and highlights the root causes of the problems hindering the qualitative discharge of municipal services to rural communities. The article found that the Ndwedwe local municipality has benefitted from the democratic and transformation processes; however, basic service delivery obligations and communication with local communities have to be given urgent attention.

A conceptual clarification to understand the risk management process in general and to be familiar with risk reporting requirements in particular, is important. It is also important to develop a common risk language and conceptual framework to better align risk management and the organisation's strategic objectives. Carmen Joel and Danielle Nel in **'Contextualising the Factors Influencing the Development of a Framework for Risk Management'**, contextualise the factors influencing the development of a conceptual risk management framework for the sustainable implementation of risk management in the public sector. Their article found that risk management practices such as risk dialogue, communication, awareness, and understanding the organisation and its risks should be encouraged; risk reporting practices should be strengthened, and operational efficiency reinforced. It is also important to develop a common risk language and conceptual framework to better align risk management and the organisation's strategic objectives.

The use of social innovation as a remedy for South African local government service delivery challenges appears to be a much-needed approach amid municipal service delivery protests. According to Maréve Biljohn and Liezel Lues the success of social innovation depends heavily on the type of governance system (open or closed) employed. They add that in an open governance system, service delivery is citizen centric, whereas a closed governance system is dominated by administrative hegemony. In **'Using Social Innovation in Open and Closed**

Governance Systems: Considerations for South African Local Government', the authors argue that using social innovation in an open governance system will require citizens to participate in the four stages (co-planning, co-design, co-delivery and co-evaluation) of a co-production service delivery cycle. They found that it is within this apparently closed governance system that South African local government experiences service delivery challenges. In light of this, this article explicates using social innovation as a remedy for local government service delivery challenges in the context of open and closed governance systems. Attention is drawn to the significance of underscoring social innovation in the relationship, interactions and communication between municipalities and citizens. The authors found that unless work practices are adapted, optimally utilising social innovation in governance systems as a remedy for municipal service delivery challenges in general and citizen participation in particular; interactions, communication and collaboration between municipalities and citizens will remain a pipe dream.

In **'Alternative Service Delivery Mechanisms within the City of Johannesburg Metropolitan Municipality'**, Njabulo Maseko and Shikha Vyas-Doorgapersad contextualise the use of alternative service delivery mechanisms in general. More specifically, the article investigates the City of Johannesburg Metropolitan Municipality's use of e-government to establish a direct line of communication and interface between government and citizens to develop a 'smart city' with better service delivery. The article addresses the issues, concerns, challenges and solutions to introducing e-government as an alternative service delivery initiative to create smart cities and offers policy implications and suggestions to improve this service delivery mechanism.

In **'Evaluation of the Effectiveness of Public Participation in the Gauteng Electronic Tolling Programme'**, Thaboni Khanyile and Shana Mavee discuss the public participation process concerning the electronic tolling (e-tolling) system in Gauteng. They state that the primary issue associated with the e-tolling project emanates from complaints by various interest groups, political parties and civic organisations regarding public participation in the planning and execution of e-tolling. This has resulted in public protests and court cases and subsequently, in delays, suspension and postponements. Their study aimed to assess the effectiveness of the public participation process in the initial stages of the e-tolling project.

The research found that the public participation process that was undertaken was ineffective due to the required procedures that were not followed. The public participation that took place was merely viewed as legislative compliance, rather than a consultative tool. The article recommends that the South African National Roads Agency Limited (SANRAL) should conduct far more comprehensive and detailed public participation procedures. More time should be allowed to maximise public input. The researchers advocate numerous strategies and changes, including policy amendments relative to the timeframe allocated to gather sufficient public input. They also recommend that the Department of Transport (DoT) should develop a

public participation policy framework to drive and guide implementing agents with a proper stakeholder consultation strategy in place.

In terms of co-published contributions with international authors and focus areas, Ramadhani Marijani and Christelle Auriacombe in **'Re-examining Five Behavioural Dimensions of Public Leadership : Perspectives from the Tabora and Singida Municipal Councils in Tanzania'**, validated five public leadership behavioural dimensions proposed by Tummers and Knies (2014), with a sample of 139 respondents from Tabora and Singida Municipal councils in Tanzania. The article focused on four factors, namely lawfulness leadership, accountability leadership, political loyalty leadership and network governance leadership. The findings made in terms of the responses of the participants in these municipal councils in Tanzania, demonstrated a high degree of convergent validity between these leadership dimensions and their assumed theoretical construct, the behavioural dimensions proposed by Tummers and Knies (2014).

In the article **'The Social and Political Conditions of Corruption in Brazil: A Complexity Approach'**, Kai Enno Lehmann and Firoz Khan's investigation of the so-called 'Car Wash' corruption scandal in Brazil, involving both high-ranking politicians and some of the country's most iconic companies; brought this into sharp relief. Using the conceptual framework of complexity and human systems dynamics, this article asks what conditions make Brazil so vulnerable to corruption. Furthermore, the article considers whether this public scandal that has rocked the political system will lead to any profound and sustainable changes. The central argument the authors forward is that as long as the underlying conditions, which incentivise corruption, are not addressed, any such changes are unlikely because corruption is the expression of incoherent social development that has persisted in the country for centuries. The article made some tentative suggestions by using a complexity approach; how this situation can be changed.

D Mwesigwa and Betty Mubangizi in their article **'The Contribution of Voter-Linked Expectations to Voter Turnouts in Mid-Western Uganda'**, examine the contribution of voter-linked expectations to voter turnouts during the 2016 elections in mid-western Uganda. Using the Expectancy theory, the article considers seven factors that sway turnouts in a democratic election. The article found that voter-linked factors, namely: physical infrastructure, gender equality, agricultural extension services, universal education, peace and security, accountability in governance and youth employment; contributed to turnouts during the 2016 national elections in mid-western Uganda. The article recommends that attempts should be made in mid-western Uganda to assess the trend of voter-linked expectations prior to and between elections, to raise turnouts.

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City Government's Capability for Resilience

Towards a Functional Framework

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ABSTRACT

The capability of city governments to cope with environmental stresses and internal dynamics is commonly regarded as a key success factor for such governments' overall resilience. The formulation and execution of urban policies and development strategies, local leadership, and service excellence all depend on cities' capability to respond to environmental dynamics. Cities are increasingly regarded as national growth hubs and make a significant impact on national socio-economic growth trajectories, political power undercurrents, and utilisation of resources. Resilient cities should be able to leverage their capabilities to deal with realities of sustainable development, encourage socio-economic growth, and promote the living conditions of its citizens.

The purpose of this article was to uncover the factors that influence the overall capability of cities to become more resilient. A mixed-method research design was employed to probe the capabilities of metropolitan municipalities in South Africa. The article concludes with empirical findings culminating in outlining key capabilities that should be incorporated into a comprehensive resilience framework for cities.

INTRODUCTION

The influence and impact of cities in nation states (e.g., metropolitan municipalities in the context of South Africa) increasingly receive scholarly attention due to

their economic, political, and social significance. Cities generally function as economic growth hubs, centres of power and influence, and experiments in social interaction. The overall resilience of a city will thus also ultimately impact the resilience of the country concerned. The concept of city government resilience generally refers to a city's ability to adapt continuously to environmental stresses and recover rapidly from internal and external shocks. Thus, serious attention should be paid to uncovering the factors that may inhibit or hamper cities' capability to become more resilient.

Based on Smuts's (1925) and Von Bertalanffy's (1968) holistic thinking and a theory of systemic interconnectedness, Forrester (1969) applied systems dynamics (SD) modelling, which uses so-called "feedback loops", to study urban dynamics. The dynamic elements he identified are useful when developing an instrument to gauge the resilience of city governments. By uncovering the interconnectedness between these dynamic elements, researchers gain an understanding of how a system such as a city may behave when one or more of its constituent parts changes. This in turn leads to the identification of the most effective place of intervention within a system. These points of intervention, commonly known as "leverage" points (Senge 1990:64), provide the basis of the design for an instrument to help determine capability and thus promote the resilience of city governments.

The purpose of the present article is to report on the findings of an empirical investigation conducted with selected metropolitan municipalities (i.e. cities) in South Africa. This was done to uncover factors impacting cities' capability of responding successfully to environmental dynamics. The content of a capability framework is proposed to enable the design of appropriate resilience strategies in cities.

CITY GOVERNMENT'S RESILIENCE IN FOCUS

According to Braes and Brooks (2010:16), resilience will be "an imperative for the 21st century as the occurrence of unforeseen, low probability high impact events increases". Resilience may be defined as the quality or fact of being able to recover quickly or easily from, or resist being affected by misfortune or shock. This implies robustness and adaptability (Gibson and Tarrant 2010:5). Resilience is generally viewed as those qualities that enable an individual, community, or organisation to cope with, adapt to, and recover from a disaster event (Endres 2005:40). Resilience has become a widely-used term resulting in a catch-all terminology, which attempts to encapsulate a complex multidimensional and multi-functional concept under a single banner.

Organisational resilience remains theoretical. Thus, methods to achieve improved resilience at both operational and strategic levels still challenge academics as well as practitioners (Braes and Brooks 2010:16). Resilience capability is generally embodied in organisational systems and processes through which it continually prepares itself to overcome the potentially incapacitating consequences of disruptive shocks.

Duit (2015) regards the rising interest in city resilience as a need among scholars and practitioners to understand the conditions better for effective governance in a complex, interconnected, and volatile world fraught with a new class of poorly understood systemic risks due to turbulence in the environment. Orr (2014:5) describes cities in general as, “Organised complexity where a half dozen or more quantities are all varying simultaneously and in subtly interconnected ways.” De Weijer (2013:iii) adds that city resilience is rooted in understanding the complexity, and that “when viewed as socio-ecological systems, cities are not deterministic, predictable and mechanistic”. She explains that a city is “organic in nature and its structures are intricately connected with each other”. In the same vein, Marcos and Macauley (2008) frame resilience in terms of three key domains, namely anticipation, adaptation and recovery (AAR). This gave rise to the design of the AAR framework as an outline of the key properties and processes of a resilient organisational system.

The AAR framework proposed by Marcos and Macauley (2008), and expanded by Katz and Bradley (2013) in the context of cities, was adapted for the present study. Thereafter, it was used as parameters to pinpoint and map the elements and dimensions for a resilience-capability framework. This framework needs to start off by mapping the different dimensions impacting city governments’ resilience. In this respect, Flannery (2005) analyses city resilience from the perspective of it being an ecosystem. Flannery points out that global climate change will severely test the ability of city governments to adapt and recover. He argues that cities are the most vulnerable ecosystem, which is subjected to global climate change. According to Flannery, this is due to cities’ complexity, as well as the numerous “invisible” interdependencies within cities as such and between cities and their external environments.

From their side, Wack (1985) and De Geus (1988) accentuate the dimensions of strategic planning and policy formulation that affect a city government’s resilience. Wack (1985) in particular, emphasises the role that scenario planning as a learning instrument should play. Of necessity is a learning process taking into account assumptions about the future in the minds of decision-makers, and in city government by policy-makers such as executive leaders and executive managers. The mentioned learning would provide the basis for deeper learning in all three of the AAR meta-categories: anticipation, adaptation, and recovery (Wack 1985; De Geus 1988, 2002; Katz and Bradley 2013). Whybrow

(2015:301) provides a further global perspective on sustainability and resilience, by postulating: “Within an evolutionary framework, our circumstances are best described as a decline in adaptive fit – a growing mismatch between what we do and the sustainable well-being of ourselves and the planet”. He argues further that this shift in adaptive behaviour stands between global resilience and a sustainable future. He refers to this process as “re-tuning our brains for a sustainable future” (Whybrow 2015:293).

Gibson and Tarrant (2010) present a number of conceptual models to clarify organisational resilience. They focus on the range of interdependent factors that must be considered when managing resilience and constructing a resilience framework. These conceptual models illustrate that effective management of resilience may be built on a range of different strategies that enhance both so-called “hard” and “soft” organisational capabilities. In this regard, Gibson and Tarrant (2010:6) formulate “the Principles Model of Resilience” derived from common themes emerging from comparisons of resilience in different disciplines. The six key principles of the model provide a guiding foundation for conceptualising city resilience and the required associated capabilities. These principles are:

- “resilience is an outcome: it is a trait that can be observed following and in response to a substantial change in circumstances;
- resilience is not a static trait: it is dynamic and will increase or decrease as the context changes;
- resilience is not a single trait: it arises from a complex interplay of many factors;
- resilience is multidimensional: there is currently no single model that describes resilience, but all available models describe some aspects of resilience from complementary viewpoints;
- resilience is founded upon good risk management: developing resilience may be founded upon the sound assessment, treatment, and monitoring of risks; and
- resilience exists over a range of conditions: as an organisation focuses on and invests in resilience it should see an increasing maturity over time in its resilience capabilities from the low-end reactive to a high-end adaptive level of maturity”.

Ensuring city government resilience by adapting rapidly to and recovering from resilience challenges, can be seen as the capability to manage change effectively (Kotter 1995; Endres 2005:40). It is, however, important to distinguish city resilience from city government resilience. City resilience is a broad concept that incorporates the total environmental, social, and economic dimensions of the urban setting. City government resilience, in turn, refers to the organisational, administrative, managerial, and leadership dimensions of a metropolitan municipality as

a complex organisation. In other words, it focuses on the structural, systemic and administrative responses of a city when dealing with those areas that may influence and challenge its resilience.

CONTEXTUALISING CITY GOVERNMENTS' RESILIENCE CAPABILITY

Fukuyama (2011) traces the emergence of the modern nation state to the early origins of trade in city states. He identifies the requirements for modern government as the rule of law, accountability, and capable government. These requirements also apply to city government. Ultimately the purpose of a government is limited to specific responsibilities, which may best be discharged on behalf of and funded by taxes on its citizens. These responsibilities are determined by the context within a specific government functions and may be limited by what it is capable of executing. Also, Katz and Bradley (2013:144) have identified the growing importance of cities globally. In emerging economies such as South Africa, cities form the backbone of national resilience and the execution of policies and strategies geared for sustainable economic development. Their influence rival those of the nation state.

City capability as means to increase resilience is emphasised from multiple angles and approaches. Below, some of the most significant approaches and dimensions are highlighted:

- Yew (2000) posits that human talent, as a city's most precious asset, should be attracted and nurtured to make it more capable.
- Cronje (2014:7) underlines the influence of widespread unrealistic expectations in South Africa, which negate city capability.
- The United Nations Economic Commission for Africa (ECA 2014) focuses on credible urban governance to boost industrialisation.
- The Institute for Race Relations (IRR 2014) accentuates the fact that increasing service delivery protests and instability undermines the capability of cities.
- The ISS (2016) underlines cities' capability to deal with rapid urbanisation.
- Schwab (2016) and Van der Waldt (2016) focus on technological convergence, e-governance, and "SMART" applications to improve the capability of cities.
- Bohatch (2017) highlights climate volatility and water insecurity, which cause influx to urban areas, thus impacting a city's capabilities.
- Fabricius (2017) stresses the role of cities to achieve the Sustainable Development Goals.
- Harvey (2017) advocates that cities should improve its organisational capability to deal with sustainable technologies and greener energy dynamics associated with the "Fourth Industrial Revolution".

- The Rockefeller Foundation (2017) emphasises the capability of cities to deal with cyberattacks, natural disasters, and economic or social upheaval.
- The World Cities Report (2017) focuses on institutional capability and capacity building to improve a city's resilience.

The different vantage points above illustrate the complexities associated with the building of adequate capabilities in cities or increasing resilience to deal with environmental stresses and shocks.

In the public service of the United Kingdom (UK), the dimensions and approaches to city capability led to the development of "Capability reviews" in 2005. This was viewed as a way to "hold local government accountable for improving their capability to deliver" (Institute for Government 2005:1). From their side, the Australian Public Service (APS) adopted a capability assessment model to promote local government capability. A further initiative in this regard is the "80/20" report by the IRR (2014:16) which identified "root problems" that face capable local government. These initiatives serve as valuable instruments to gauge city government's resilience in general and to highlight the required capabilities that cities should develop in particular. The mentioned initiatives also accentuate the fact that organisational capability extends beyond that of employees; it also combines people skills with the organisation's processes, systems, culture, and structures to deliver required outcomes. In addition, the initiatives as instrument helps identify high-leverage areas of capability and key enablers of successful performance such as city leadership, strategy, and service delivery.

Capable city government is generally associated with city performance, which in turn could increase its attractiveness for direct foreign investment, general job creation, industrial development, and job creation in urban areas. This, in turn, would improve the terms of trade on a national level (Osborne 1993:349). Furthermore, Osborne and Gaebler (1992:ix) established that capable local governments show the following characteristics:

- "catalytic and empowering;
- community owned;
- competitive;
- mission driven;
- results and customer driven;
- market-orientated and enterprising;
- anticipatory and pro-active; and
- decentralised and participative".

The Australian Public Service Commission (APSC 2017) asserts that consistent delivery of services depends on performance management through an organisation-wide framework. The aim would be to build a performance culture

that is responsive and aligned with the strategic direction of the organisation. Performance management underpinned by sound, well-resourced service delivery models that enable innovation are required to build an organisation's capability. The APSC framework points out that cost-effective delivery of services is carried by leadership and strategy. They describe leadership as setting direction as well as motivating and developing people. The APSC posits strategy as an outcomes-based, evidence-based process, which is collaborative and builds common purpose among stakeholders in strategies to enhance cities' resilience.

Conventionally, the global discourse on city capability often focused on aspects such as "efficiency", "effectiveness", and "equity". On the other hand, more contemporary debates show an increasing concern for "robustness", "flexibility", and "adaptability" (Duit and Galaz 2008:312). Glaeser (2011) confirms that these "new" capabilities reflect the global concern for good and resilient urban governance. Glaeser (2011) furthermore, provides an overview of the aspects that make cities more successful, resilient, and sustainable. He places resilience in the context of both short-term crises as well as long-term sustainability. In addition, he provides guidance on particular aspects that can cause cities' downfall (i.e. through non-resilience). Glaeser asserts (2011) that the primary function of a city is to bring people and their needs closer together more cost-effectively and conveniently. In this regard, Katz and Bradley (2013) demonstrate the growing capacity for resilience by city governments, compared to the declining national government. They explain that this capacity is due to cities' relative proximity to its citizens and the significant political and economic influence it exerts on the national sphere.

African cities face several difficulties in developing adequate capability to become more resilient is demonstrated further in the "Ten essentials" pilot study, conducted by the United Nations Office for Disaster Risk Reduction (UNISDR 2012:10–11). Ten of the essential issues identified in this pilot study are:

- institutional and administrative frameworks;
- financial and other resources;
- multi-hazard risk assessment;
- infrastructure protection, upgrading and resilience;
- protection of vital facilities and supplies (e.g. education, health, food and water);
- building regulations and land-use planning;
- training, education and public awareness;
- environmental protection and strengthening of ecosystems;
- effective preparedness, early-warning response; and
- recovery and rebuilding communities.

The organisational dimensions include these "ten essentials" and provide a basis for responding to resilience challenges. A holistic construct such as the AAR

meta-framework is required to map these essentials and other dynamics, which may impede cities' capability to become more resilient. Such a framework could provide a useful, holistic basis for sense-making in general, and enable observers to gauge city government's capability in particular.

According to Duit (2015:3), most definitions of resilience that currently circulate in the social sciences imply the ability to handle shocks and surprises. He adds that, "beyond that, there is a plethora of varieties of this basic conceptualisation". The implication of his assertion is that scholars and research institutions globally, including South Africa, have responded with a matching plethora of solutions, frameworks and capacity-building programmes to address the capability of cities to be more resilient. Among the multiple conceptualisations that Duit (2015) highlights are a number of research institutes and networks with resilience as their core activity and research focus. These institutions track the rapidly evolving field and usually focus their research on the needs of a local geographic area or a specific constituency.

The Institute of Risk Management South Africa (IRMSA 2015:11), for example, provides a list of risks coupled by their estimates of "likelihood and consequences". These risks are compared with a similar list from the World Economic Forum (WEF). Similarly, the Disaster Risk Reduction Forum (UNISDR 2012b:14) has produced a handbook for local government leaders to deal with environmental risks. Furthermore, the Institute for Social and Environmental Transition (ISET 2010) analyses cases from Asian cities to map appropriate city planning endeavours.

A further example of global initiatives to improve a city's resilience capability, is the annual Resilient Cities Reports from the Resilient Cities Group, which describes global developments in urban adaptation and resilience. The IRR (2014) further provides a useful comparative analysis between municipalities in South Africa. The performance indicators and measures utilised for the IRR report overlap with several areas of organisations' resilience. The IRR (2014:16) identifies the "root problems" facing local government as "political appointments ... lack of capability ... and lack of accountability". The concepts, lack of capability and lack of accountability, can be grouped under the heading of "competence deficits" which are mostly the result of political appointments.

The South African Cities Network (SACN 2014) describes its mission as identifying and enabling city policy-makers to learn from cities in general, including resilience in city government. However, in spite of the multitude initiatives outlined above, not a single diagnostic instrument has emerged by which to measure the various dimensions of city governments' capability for resilience. An extensive literature survey and Internet search revealed that to date, no instrument could be found that provides a holistic perspective to ascertain the emergent dimensions of city government resilience. The construct that resembles such an instrument most closely is the emerging Global Reporting Initiative (GRI 2013), which aims

to make reporting on sustainability mandatory for all organisations, including city governments. This report includes dimensions such as “green economics” and “green growth”.

Further risks are documented based on the findings in the Institute of Risk Management South Africa (IRMSA) report and reflected in Table 1. This identifies important risks in South Africa, which are ranked by “Likelihood” and “Consequence” (IRMSA 2015:8–9).

Table 1: IRMSA report – South Africa risks 2015 rank order

By likelihood	By consequence
Corruption	Maladministration
Unemployment	Governance failure
Infrastructure	Unemployment
Political and social instability	Infrastructure and networks
Organised crime	Critical infrastructure
Cyberattacks	Fiscal crisis
Financial mechanisms failure	Financial mechanisms failure
Income disparity	Economic and resource nationalisation
Urbanisation	Cyberattacks
Data fraud	Income disparity

Source: IRMSA (2015:8,9)

The dynamics presented in Table 1 indicate the IRMSA’s perspective on priorities for capabilities most suited to offset these risks. While the IRMSA identifies these as national risks within South Africa, such risks may also impact city governments’ capability for resilience.

Besides “key uncertainties”, another category of forces in the context of cities may challenge their resilience capability. The Rockefeller Foundation identifies generic dynamics, which they have labelled “acute internal stresses” that have become “the new normal” for cities across the globe. These stresses include:

- “poverty;
- endemic crime and violence; and
- failing infrastructure, that weaken cities over time” (Rockefeller Foundation 2017).

Taleb (2007) argues that so-called “black swans” – environmental stresses and shocks that are unknowable risks – may significantly impede the capability of

cities to function more resilient. These black swans represent the impact of unanticipated events, analogous to the unexpected appearance of a black swan, outside of the general awareness of executive leaders and executive managers. Thus, should such a black swan materialise, such a dynamic could have a significant impact on a city government's capability for resilience. For instance, Berkshire Hathaway Chief Executive, Buffet, stated at his company's 2002 AGM that in his view "a nuclear detonation, on a major metropolis, was now a virtual certainty" (Buffet 2002). Another example of a black swan is a matter which has become widely accepted among futurists, namely, a viral attack on humans, similar to the 1918 so-called Spanish Flu epidemic. While this dynamic is seen as predetermined, the timing of such a pandemic may be unknown and unknowable (Influenza Pandemic 2017).

Furthermore, systems dynamics (SD) practitioners are aware that a systemic phenomenon such as climate change may reach certain thresholds after which the dynamic accelerates or declines rapidly and unexpectedly. Thresholds already being breached are reflected in the prolonged, unseasonal droughts in the Cape Province, which threaten water security and expose deficient strategies by the city government to build resilience. Bohatch (2017) explains this phenomenon: "We shouldn't see the current water crisis in the Cape as a temporary phenomenon that will resolve in a year or two. It's a long-term problem." This conclusion may have implications for other cities in the Southern African region as well. Reaching a threshold is also reflected in the exponential increase of the number of cyclones ravaging the United States of America.

A further example of a plausible black swan is an electromagnetic shock pulse or shock, which could inflict permanent damage to a country's electrical generation, transmission and distribution system – which would also affect cities. Certain storm-analysis consultants in Duluth, Minnesota (Economist 2017:12) explains: "Electro Magnetic Shock (EMS) may be caused by a coronal mass ejection from the sun as occurred on 13 March 1989, which had a startling impact on Canada. Within 92 seconds, the resulting geomagnetic storm took down Quebec's electricity grid for nine hours." They warned that the effects could have been even worse if the United States of America was hit – such a geomagnetic storm may have destroyed as much as a quarter of high voltage transformers. The mentioned consultants add that "a prolonged interruption of an electricity supply may be life-threatening, removing up to 90% of the population as a result of the prolonged absence of electricity". The storm-analysis consultants warn that in future, such cataclysmic storms will be inevitable. They go on to point out that "[a] nuclear blast 40km above the earth, over the USA for instance, could also generate an EMS" (Economist 2017:12).

Resilience solutions seemingly depend on their value for the local context. In South Africa, the absence of a comprehensive diagnostic instrument to measure city government's resilience capability is exacerbated by the socio-economic and

political setting of cities in the country. South Africa generally is still in a phase of socio-political and economic transition following the first democratic election held in 1994 and won by the African National Congress (ANC). A coalition was formed between the ANC, the SA Communist Party (SACP) and the Congress of SA Trade Unions (COSATU) which is commonly known as the tripartite alliance. Within this coalition there is a vigorous debate about the preferred economic system for South Africa as well as the policies required to drive such a system's socio-economic development targets.

On the one hand, a policy of national democratic revolution (NDR) is proposed by the SACP, while the National Development Plan (NDP) formulated by the National Planning Commission is posed as the "official policy" of the ANC. The NDR envisages centrally directed policies based on the principles of socialism which, after a national revolution, will lead to a communist state. The NDP on the other hand, advocates respect for the constitution and a liberal approach. Such an approach should lead to investment, functioning markets, the freedom to act, the protection of property ownership, and economic policies that will generate the confidence to attract foreign direct investment (FDI). This ambiguity in national policy generally creates uncertainty within city administrations about their role and functions within the co-operative system of local governance.

Cadre deployment in key executive, managerial, and political positions in metro cities remains ANC policy. This policy, which rewards loyalty to the ANC above managerial competence, can be regarded as one of the root elements that has a negative impact on city governments' capability for resilience (IRR 2014:14). The reason is clear: it is unlikely that cadres will possess the level of insight and competence to steer cities through the complexities associated with resilience building. Policy ambiguity within the ANC at national level filters down to the provincial sphere into the metros. The NDR and the NDP, when fully implemented, may have different impacts on policy and the economy in general, and the resilience of city government in particular. City governments' capability for resilience may vary, depending on the level of centralised policies when compared to liberal market-based policies as outlined in the NDP.

A further problem is what Van der Heijden (1996:93) and Jaques (2013:37) dub the pervasiveness of "short-termism" in city politics and decision-making. Resilience thinking and systems thinking require a short-term as well as long-term horizon. Both forms of thinking require innovation and the dealing with the emergence of adaptive behaviour rather than the design of short-term city programmes. In this regard, Johnson (2015) in his work "How long will South Africa survive?" points out that governments do not create jobs, companies do. This implies that cities' attractiveness to businesses is the key to growth and creating jobs. Konditi (2015) confirms this *de facto* linkage between government policy, economic performance, and city resilience.

RESEARCH METHODOLOGY

This research followed a mixed-method design and employed a case-study methodology to gather empirical data. Baxter and Jack (2008:544) describe a case study as an approach that facilitates the exploration of a phenomenon by using multiple data sets.

Data collection instrumentation for the present study included:

- a robust literature survey to develop a holistic perspective on paradigmatic developments and schools of thought, theories and models of resilience;
- document analyses of official city policies, strategies, and programmes;
- resilience-model assessments to pinpoint city capability factors; and
- semi-structured interviews with purposively-sampled participants in metropolitan municipalities and officials from the South African Cities Network; and
- interview schedule designed as questionnaire sent to international experts.

The findings of the research were based on triangulation of both method and data. Maree (2011:113) confirms that multiple data sets significantly improve the validity and reliability of findings.

An interview schedule was drafted and pre-tested (i.e. pilot) for *ex ante* clarity of wording that apply the criteria for trustworthiness. Feedback obtained from the first round of interviews (i.e. pre-testing) was processed and integrated into the final data-collection instrument. It should be noted that the interview schedule was designed in such a way that it also functioned as questionnaire to obtain input from international experts. The questionnaire was electronically mailed to these respondents.

Sampling

According to Mouton (1996:201), the key concept in sampling is “representativeness”. He explains, “Unless the sample from which we will generalise truthfully or faithfully represents the population from which it is drawn, we have no reason to believe that the population has the same properties as those of the sample.” The present study focused on metropolitan municipalities (cities or metros). The structure of the local sphere of government is regulated in terms of the Local Government: Municipal Structures Act 117 of 1998, which sets out the categories and types of municipalities. Currently, South Africa has eight metropolitan (Category A) municipalities, namely:

- City of Cape Town;
- Nelson Mandela Metropolitan Municipality (Port Elizabeth);
- City of eThekweni (Durban);
- City of Johannesburg;

- Ekurhuleni Metropolitan Municipality (East Rand);
- City of Tshwane (Pretoria);
- Buffalo City (East London); and
- Mangaung Municipality (Bloemfontein).

A purposive sample was taken from the Tshwane, Johannesburg and Cape Town Metros as well as members of the board of the South African Cities Network (SACN). The primary target population consisted of executive leaders and executive managers in these cities, officials responsible for strategic engagement and urban resilience in SACN, as well as targeted international experts. Details of the sampled participants are as follows:

- Members of the Mayoral Committee (MMC);
- Divisional Heads Government, Governance Executive Support, Offices of the Executive Mayor;
- Executive Manager Programmes, South Africa Cities Network (SACN);
- United Kingdom (UK): International Public Servant of the Year, past-Vice-Chancellor, The Open University, Milton Keynes, United Kingdom;
- Europe: past-Director, European Public Policy Advisors (EPPA), Brussels, Belgium; and
- United States of America: Past Commissioner Parks, New York City Government.

Data were collected from the participants and documented verbatim during interviews where possible. Information was also drawn from questionnaires, and through follow-up electronic interactions with international respondents.

FINDINGS: TOWARDS A RESILIENCE CAPABILITY FRAMEWORK

The content and thematic analysis of the literature and participants' responses formed the basis for constructing a framework to assess and enhance resilience capability. The capability framework can be employed to identify "high-leverage" areas and develop positive descriptors for each of the selected capabilities. Numerical scores from 1–4, reflecting a four-point Likert scale, were attached to each item (i.e. capability factor) to enable scoring. Participants were requested to score the indicated resilience capability factors (RCFs) by registering the level of agreement or disagreement on a descending Likert scale:

- "Agree completely": Score 4;
- "Agree somewhat": Score 3;
- "Disagree somewhat": Score 2; and
- "Disagree completely": Score 1

Participants during interviews and international experts (respondents) per questionnaire also had to score items within each RCF. These factors were extracted from the literature review, document analyses, and content analysis of existing resilience models. All items within RCFs were also scored as above and provided for Capability(C) and Cross-cutting competence (CC). These scores could be used by city administrations as self-assessment instrument to determine their resilience capability. In cases where scores fall within the requirements of T-scales, further statistics can be gathered and inferences made. The key RCFs that were tested are:

- Capability (C);
- Cross-cutting competencies (CC);
- Anticipation (A);
- Adaptation (A);
- Recovery (R);
- Sustainable development (SDev);
- Green growth (GG); and
- Smart cities (SC).

The findings were used to construct a resilience capability framework, which was divided into internal and external city capabilities. Internal capabilities refer to organisational structures, systems, policies, strategies, processes, procedures, and methods. External capabilities entail the cities' ability to adapt and adjust to macro, environmental dynamics that influence their overall resilience. A detailed exposition of the resilience capability framework depicting all the identified RCFs falls outside the scope of this article. Thus, only the identified main capability factors are expounded below.

Resilience capability factors for city government

Based on the input obtained from the participants and respondents, Table 2 reflects the RCFs identified in the present study that influence a city's capability for resilience.

These domains and associated factors, as identified by participants and respondents, were juxtaposed with the content from resilience models and the literature review. The factors should be used to populate the broad resilience dimensions linked to the RCFs as identified previously:

- Capability;
- Cross-cutting competencies;
- Anticipation;
- Adaptation;
- Recovery;

Table 2: Towards a resilience capability framework for cities

Resilience capability domains	Capability factors (C)
Political	<ul style="list-style-type: none"> • political factional divisions • dysfunctional competition for jobs • interpersonal conflict • patronage politics • trust deficit and paranoia
Social interaction/ community engagement	<ul style="list-style-type: none"> • erosion of public responsiveness • low levels of accountability • non-adherence to the principles of rule of law • limited trust in city councils and administrations • escalating levels of community needs and aspirations • health and safety concerns
Financial/economic	<ul style="list-style-type: none"> • corruption, tender fraud, and maladministration • fluctuating property prices • low tax base • accelerating irregular expenditure and qualified audits • inability of council to interpret financial statements and perform their oversight function • differing rates of economic prosperity in regions where cities are located
Organisational	<ul style="list-style-type: none"> • erosion of city structures and system capability • uneven capability between different city departments to execute plans on time, on budget, and according to quality specifications • inflexible organisational arrangements and bureaucratic practices • limited resources, equipment, and instruments • lack of capability resulting in unreliable service delivery • outdated technology, procedures and tools
Human resources	<ul style="list-style-type: none"> • low skill levels and limited experience • political influence/interference in city administrations • institutional nepotism • high levels of staff expectations • limited investment in personal growth opportunities • low individual commitment levels (absence of a sense of responsibility and accountability) • demands by city officials and workers for higher wages and decent work conditions • high levels of corruption, maladministration and nepotism • deteriorating personal safety and security • decline in health and life expectancy caused by e.g. increasing HIV/AIDS infection levels

Resilience capability domains	Capability factors (C)
Leadership/managerial	<ul style="list-style-type: none"> • insufficient strategic perspectives and limited understanding of trends and events that will confront the city • inability to envision the future • inability to align the various organisational sub-systems, thus affecting organisational responsiveness • limited political and administrative leadership capability • limited management capacity and competence • policy ambiguity and unresolved issues
Service delivery	<ul style="list-style-type: none"> • housing • public transport • energy supply • low levels of citizens' service satisfaction • project management capability
Environment	<ul style="list-style-type: none"> • migration into cities and high rate of urbanisation • environmental stewardship, including waste management and pollution control • security of water supply and other natural resources • difficult to balance economic/urban growth with environmental concerns

- Sustainable development;
- Green growth; and
- Smart cities.

These dimensions may be populated according to the domains presented in Table 2 as guide. Once these dimensions are outlined, it is recommended that cities design a comprehensive strategy, based on these outlines, to enhance their resilience. A further recommendation is that cities conduct regular, robust assessments of their resilience capabilities and adjust their strategy accordingly. The unique circumstances and particular environmental setting of a city should also be considered in this regard.

CONCLUSION

City governments' capability for resilience can be regarded as the ability to adjust or recover rapidly from stresses and shocks (e.g. the so-called "black swans"). The purpose of this article was to uncover the resilience capability factors (RCFs) that influence the overall capability of cities to become more resilient. The article

reports the findings of an empirical study conducted within metropolitan municipalities from South Africa. It was established that various internal and external dynamics influence cities' ability to improve their resilience. Specific factors were identified for each governance domain. These RCFs should be used to design a comprehensive resilience strategy for cities.

A systemic perspective of a city's resilience capability must consider the interdependence of such resilience with those of cities in national, regional, continental and global context. This could uncover important interconnections and interfaces between the different layers or levels of resilience and provide useful insights for executive, political, and administrative leadership, helping them improve city governments' overall capability for resilience.

NOTE

- * Dr Louis van der Merwe is Managing Partner of the Centre for Innovative Leadership Ltd (CIL), an international consultancy for strategy and training. This article is based on his doctoral thesis under the supervision of Prof Gerrit van der Waldt titled: City government resilience: Towards a diagnostic instrument completed at the North-West University, Potchefstroom.

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