

Dilemmas of Implementing Climate Change Adaptation Policies: The Prospects and Constraints of Multilevel Governance

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Abstract: Globally, climate change has become a serious environmental problem within a development discourse. Most government structures have put in the initiatives to circumvent these harsh environmental realities without any success. This is due to the complexities surrounding climate change adaptation and mitigation. Literature provides pragmatic evidence that without collaboration between the governments, including public and private sectors, at the national and local level (i.e. Multi-Level Governance) mitigation of climate change will never be realised. Multilevel governance is based on the principles of collaboration, coordination and cooperation in implementing climate change adaptation. Thus, the multi-level principles can help in the promulgation and implementation of policies at both the national, local and global level that can be used as measures to adapt to climate change. The recent work on multi-level governance indicate that government are continuously challenged with the notion to merge different actors, either state or non- state to address climate change adaptation which leaves a huge gap in most countries. Although, the adaption of multilevel governance may seem to have left some few important facts, but the approach tends to be more arguable in its positive effectiveness for addressing climate change. Multi-level governance approach may have some limitations and constraints when coming to the involvement of the local people but can still play a pivotal role as one of the climate change adaptation strategies. Theoretically, with literature based analysis, the paper reviewed Integrated Development Plans (IDPs) of selected municipalities within Capricorn District Municipality to uncover the level of integration and stakeholder engagement within local government in the quest to address climate change. The paper concludes that various local municipalities continue without proper plans, capacitated personnel and institutions for the implementation of climate change adaptation plans which derail the potentialities that multilevel governance holds in addressing urban challenges.

Keywords: Multilevel governance, Local government, Climate change, Integrated Development Plan

1. Introduction

The global crisis of climate change has been common in the past years, and still constitutes enormous impacts in most developing countries (Gunster, 2017) such as South Africa. According to the Department of Environmental Affairs (DEA), climate change can be understood as an ongoing trend of changes of earth's general weather conditions that courses a rise in atmospheric temperatures which sometimes referred to as global warming (Department of Environmental Affairs, 2011). The present of greenhouse gases (GHGs) in the atmosphere as a result of human activities has resulted in climate change. These gases intensify a natural phenomenon called the "greenhouse effect" forming an insulating layer in the atmosphere that reduces the amount of the sun's heat that radiates back into space (DEA, 2011). One of the resultant effects of climate change is the rising sea level, melting of polar ice, snowfall patterns,

change in rainfall patterns, droughts, frequent floods and amongst others, that poses a disastrous effect in for the lives of people (DEA, 2011; Abraham, 2018). Policies were formulated and implemented to prevent or mitigate the level of climate change in most of developing countries. However, some policies were a bit equivocal and dwindled during its formulation and implementation (Boyd, 2012). Therefore, climate change has become increasingly imposed in South Africa. Regardless of the formulation of policies to address climate change adaptation and mitigation, there were some momentous factors that were left behind, that possessed a very important role in strengthening and addressing such issues of climate change (Lobell, Burke, Tebaldi, Mastrandrea, Falcon & Naylor, 2008). For climate change adaptation strategies to be effective, there were a need for adopt the interaction and decentralisation of powers from national, regional and local levels (Lobell *et al.*, 2008).

In chapter 3, section 40(1) of the Constitution of the Republic of South Africa has adopted a system of multi-level governance divided into three 'spheres' of government – national, provincial and local, that are to be 'distinctive, interdependent and interrelated' (The Constitution of the Republic of South Africa, 1996). This article interrogates the importance of interacting and decentralising powers from national to local to address the adaptive capacity of the local government towards climate change. Further, local government needs facilitate and execute powers so that can also adapt to ensure that climate change policies are effectively implemented in South Africa. However, the implementation climate change adaptation plans through multilevel governance is not as straightforward process. This is because climate change is not only an environmental issue, but it is also political. Furthermore, IDP and municipal plans play a role in adapting to climate change and thus providing South Africa climate policy context that drives and tries to balance the adaptation. Consecutively, article will also deliver the constraints and prospects that are associated with practicing multi-level governance and reaching paramount recommendations on how climate policy adaptation can be improvised in practicing multi-level governance in South Africa.

2. Multi-Level Governance Approach

The concept of multi-level governance finds its etymology in political science and public administration theory in European integration (Piattoni, 2009). It was developed by political scientist Liesbet Hooghe and Gary Marks in the early 1990s (Bache & Flinders, 2004). Multilevel governance can be described institutionally as a new concept to encompass overlapping competence and interactions amongst actors across various levels of governments, private sector, communities and civil societies (Stein & Turkewitsch, 2008). Multilevel governance is about the creation of institutions and decision reallocation upwards to the supranational level and downwards to the subnational level in order to effectively address developmental problems (Bache & Flinders, 2004). Multi-level governance strengthens the relationship and interactions of different government levels. In this sense, multilevel governance was essentially a broadening concept of federalism to include more than two levels of government and autonomous policy-making structures (Stein & Turkewitsch, 2008). However, there are four drivers of multilevel governance. Firstly,

the tendency over time to increase participation of non-state actors such as the NGOs, corporation and unions in government functions. Secondly, the growth of the overlapping decision making networks engaged in such functions. Thirdly, the change in the role of the state from command and control to steering, coordination and networking. Lastly, the challenges multilevel governance confronts in assigning responsibilities and exercising democratic accountability in governance (Bache & Flinders, 2004).

According to Bache and Flinders (2004), multi-level governance is being built on a number of foundations. Firstly, European integration means that capacity to make decisions in the European Union (EU) rests at different levels. The most important of these is the supranational level of EU institutions, the national level of governments and the sub national of sub-state actors such as local government and interest groups (Bache & Flinders, 2004). The European integration has also meant a loss in the supreme power of authority of the state (Hooghe & Marks, 2001; Bache and Flinders, 2004) within the multilevel governance context in order to ensure decentralised decision making. The supranational, national and sub-national level of government are seen to be interconnected with political development at one level impacting on the other levels (Hooghe & Marks, 2001). However, the state centric model that sees state as the sole controller in the European politics and the channels through which actors engage in the European sphere (Hooghe & Marks, 2001) is nullified by the application of multilevel governance.

There are two types of multi-level governance; the first type is the more traditional form, which is built upon the general purpose or the jurisdiction at different levels (Bache & Flinders, 2004). The traditional form of multilevel governance is mostly interested in the interaction between these levels of governments and the sharing of competence between them (Bache & Flinders, 2004). Thus, this type of MLG is attached to a state-centric concept of politics. Hence, the intellectual home base for this type of governance is federalism, which is concerned with power sharing among a limited number of governments operating at just a few levels (Benz, 2000; Bache & Flinders, 2004). The unit of analysis is the individual government, rather than the individual government (Benz, 2000). The second type of multi-level governance is the one in which

the jurisdictions is broad, rather than being limited. Jurisdictions are not aligned only to just a few levels, but rather operate at diverse territorial scales (Hooghe & Marks, 2001). These types are functionally specific rather than multi-task. This type of multi-level governance is intended to be flexible rather than fixed. The conception is predominant among neoclassical political economists and public choice theorists, but it also summarizes the ideas of several scholars of federalism and international relations (Stein & Turkewitsch, 2008). This type of multi-level governance embraces the capacity to take collective decisions and make them stick in order to be shared among various actors. The use of multi-level governance approach has expanded well beyond the study of the EU (Bache & Flinders, 2004). It reflects that international, national and more local political dynamics simultaneously matters, and that their ongoing interaction also critically matters.

3. The South African Climate Change Policy Context

Climate change is a key concern in most developing countries like South Africa (Ziervogel, New, Archer van Garderen, Midgley, Taylor, Hamann, Stuart-Hill, Myers & Warburton, 2014). South Africa falls within the top 20 globally in terms of carbon emission, and thus is one of the key contributors towards global climate change (Bryan, Deressa, Gbetibouo & Ringler, 2009; Cobbinah & Darkwah, 2016). It has been estimated to be the thirteenth largest emitter of carbon dioxide in the world (Cobbinah & Darkwah, 2016; Cobbinah & Nimminga-Beka, 2017). Due to an increase in changing weather conditions, the South African government formulated policies that aimed at addressing and avoiding climate change and problems associated with it (Erasmus, Van Jaarsveld, Chown, Kshatriya & Wessels, 2002). Section 24(a) of the South African Constitution (1996) stated that everyone has the right to an environment that is not harmful to the well-being of the South Africa populace. Section 24(b) states that everyone has the right to the environment that is protected for the benefit of current and future generation, through reasonable legislative framework and other measure that prevent pollution, ecological degradation and the promotion of conservation. The Constitution provides a legislative significance as an enablement to achieve sustainable development. Within environmental discourse, climate change has the potential to derail plans to provide a developmental need of the entire populace which can result in food

insecurity. Climate change represents an additional stress to South Africans already struggling with the challenges posed by environmental degradation (Bryan *et al.*, 2009). Climate change has a detrimental effect on biodiversity and biome which are threatened by the increased temperature and rising carbon dioxide levels (Ziervogel *et al.*, 2014).

With all this multiplicity of climate change effects, South African government has promulgated various pieces of legislations with the purpose of managing the environment. South African government promulgated National Environmental Management Act (NEMA), National Environment Management: Air Quality, National Climate Change Response (NCCR) White Paper (2011), Integrated Urban Development Framework (IUDF) (2014) and other pieces of legislation to address the undying effects of climate change. In order to address climate change and adapt it, the Department of Environmental Affairs (DEA) held successive workshops towards sustainable development and green economy. The workshop resolved to place major focus on the Sustainable Development Goals (SDGs) for which the environmental sector holds primary responsibility. Objective 12 (response consumption and production), 13 (climate action), 14 (life below water), 15 (life on land) and 17 (partnership for the goals) are centrally aimed adapting and mitigating climate change. Further, the white paper on NCCR presents the South African Government's vision for an effective and efficient responds to climate change and towards a low carbon emission economy and society (NCCR, 2011). Climate change also affect agriculture, it affects staple crops such as maize and on the forest industry (Ziervogel *et al.*, 2014). The white paper stated that the achievement of climate change response objectives is guided by various principles set out in the Constitution, the Bill of Rights and NEMA. The principles include amongst others: common but differentiated responsibilities and respective capabilities; equity; special needs and circumstances; uplifting the poor and vulnerable; intra- and inter-generational sustainability; the precautionary principle; the polluters pay principle; informed participation; and economic, social and ecological pillars of sustainable development. The government's national climate change response policy was approved and gazetted in October 2011 (Erasmus *et al.*, 2002). The white paper represents the culmination of an iterative and participatory policy development process that was started in October 2005 (Ziervogel *et al.*, 2014).

Table 1: CCAAP for the City of Polokwane

Project Name	Activities	Location
Development of a Climate Change Adaptation Action Plan (CCAAP) for the City of Polokwane	Development of a Climate Change Adaptation Action Plan (CCAAP) for the City of Polokwane	Municipal wide

Source: Authors

The white paper prioritizes climate change responses that have significant mitigation and adaptation benefits, and further have a significant contribution on economic growth, job creation, public health, risk management and poverty alleviation (Ziervogel *et al.*, 2014). The white paper on NCCR ensures equity through a fair allocation of efforts, costs and benefits in the context of the need to address disproportionate vulnerability, responsibilities, capabilities, disparities and inequalities (Ziervogel *et al.*, 2014). It also involves considering the special needs and circumstances of the localities and people that are vulnerable to the adverse effects of climate change, including vulnerable groups such as woman, especially rural poor woman, children, child head families, the aged, the sick and the physically challenged. Another principle is to uplift the poor and the vulnerable. This could be done through ensuring that climate change policies and measures should address the needs of the poor and vulnerable and ensure human dignity (Bryan *et al.*, 2009). It is therefore clear that climate change is not only an environmental problem, but also political, social and economics factor. This principle also introduces the polluters pay principle. This will ensure that those who harm the environment pay the cost of remedying pollution and environmental degradation and supporting any consequent adaptive response that may be required (Bryan *et al.*, 2009). All of the factors and legislations framework demonstrate the commitment of South African government to ensure environmental protection and adapt to climate change. Local government in constitutionally mandated to ensure the formulation of IDP as an operative plan to address that developmental needs of the community. Therefore, it is important this important local government plan embrace the notion of climate change adaptation in order to improve the capacity to be adaptable.

4. IDP and Climate Change Adaptation

Local governments in South Africa are constitutionally mandated to formulate Integrated Development Plan (IDP). Durban city has formulated an integrated

assessment framework in order to provide an integrated development initiative in addressing climate change. Such an integrated assessment framework helps to provide a strategic input into an ongoing development of the city's IDP (Roberts, 2010). This will allow the municipality to inculcate climate change considerations into its long-term planning and budgeting, and to develop appropriate responses in terms of adaptation and mitigation plans (Roberts, 2010). Thus, it is important to interrogate selected municipal IDPs to evaluate their role in integrating climate change adaptation in planning.

4.1 Polokwane Local Municipality

Scholars have over the years argued that cities are vulnerable to climate change and Polokwane city in different (Roberts, 2010; Cobbinah, Ardiaw-Kwasie & Amoateng, 2015; Cobbinah & Nimminga-Beka, 2017). Therefore, stringent development of climate change adaptation strategies is eminent if the city is to continue to be operational post climate hazards. Polokwane local municipality IDP (2017-2018) stated that 'as part of Free Basic Electricity, the municipality has provided households with solar Panels. Plans are in place to increase the provision of solar Panels to other parts of the municipality'. The provision of solar panel aims to reduce the level electricity consumption within the municipality. This is part of climate change mitigation approach that promotes the use of energy mix to abate burning fossil fuel for energy use. Despite this commitment by the municipality to abate carbon emissions, it must also put in place measures to adapt to climate change.

It is stated in the IDP (2017-2018) that Polokwane local municipality has put in place budget for the formulation of CCAAP for the city of Polokwane. However, to date, the formulation of the plan is yet to be realised. Polokwane local municipality in its IDP stated that they have developed new parks in 'Sebayeng and the Oos-skool Park, 3 Entrances: Westernburg, Ga-rena and Blood river. The beautification of the Nelson Mandela road (island) new

extension using the remnants of materials from other parks and maintenance programmes'. This is another way of adapting to climate change through process called greenery development. However, in the midst of various effects of climate change, Polokwane provides an insufficient climate change adaptation measures within the city. These measures that are implemented coupled with some of the challenges that local municipalities (funding, human capacity and lack of local knowledge) are facing paint a blurry picture in the quest to adapt to climate change. The city cannot adequately adapt to floods, heatwaves, rising temperature and draughts using this conventional adaptation measure.

4.2 Blouberg Local Municipality

Adaptation to climate change measures are important for all municipalities to undertake in order to abate the harsh realities of this environmental problem. Blouberg local municipality IDP stated that the 'municipality has embarked on environmental campaigns to educate communities about issues of climate change, its adaptation and mitigation programmes'. This is important in ensuring that the locals are well aware of the environmental problems and to ensure the development of local knowledge about climate change. Scholars have identified local knowledge as one important factor to ensure that various plan to adapt to climate change are successful. However, local knowledge is not the end to it all, there is a requirement for appropriate intervention to adapt to climate change. 'A programme on tree planting is done with stake-holders such as Venetia mine, DWA and private donors'.

4.3 Lepelle-Nkumbi Local Municipality

Though Lepelle-Nkumbi local municipality does not have a bigger city like Polokwane, it is vulnerable to climate change effects as well. In its IDP (2016-2021), Lepelle-Nkumbi local municipality recognised that 'rainfall and river flow are unpredictable in time and unevenly distributed in space, with only 12% of the land area generating 50% of stream flows. The main users of surface water resources are agricultural irrigation, domestic, industrial, mining and power generation. This planning capacity will be a key capability for adaptation planning under ongoing and future climate change.' This awareness of the availability of surface water is important in order to adapt to climate change, but it is not adequate. Lepelle-Nkumbi local municipality in its IDP

(2016-2021) has put in place climate change adaptation interventions as follow:

- Sustainable water resource use and management including catchment management.
- Maintenance and climate-resilient restoration of ecosystem services.
- Sustainable farming systems including integrated crop and livestock management.
- Community-based forestry and diversification of livelihood skills.
- Climate resilient forestry options.
- Climate advisory services and early warning systems for extreme weather events.
- Fire mitigation including burning fire breaks and reactive firefighting.
- Climate change integrated into agricultural curricula.
- Integrated water use planning.
- Integrated, simplified and unambiguous policy and effective governance systems.
- Sustainable urban expansion including, where possible, ecosystem-based solutions.
- Awareness, knowledge and communication on climate change and adaptation.

Climate change adaptation within local government is very important towards the achievement of sustainable development. Polokwane Blouberg and Lepelle-Nkumbi local municipalities have all recognised the importance of climate change in their IDPs. Polokwane and Blouberg local municipality IDPs do not have interventions on how the municipality will ensure that they are adapting to climate change. Blouberg is predominated by rural areas with high level of service delivery backlogs. Further, rural municipalities are always characterised by lack of financial resources, capacitated human resources and other challenges which derail the quest to implement climate change adaptation intervention. On the other hand, Lepelle-Nkumbi local municipality has put in place various interventions to implement

climate change adaptation. However, it is important that the local government delegate department who will be able to carry through the adaptation plans. Furthermore, due to the multiplicity of climate change, it is imperative that local government should be able to collaborate with departments, private sector and public sectors. Therefore, multilevel governance is very important to ensure the implementation of climate change adaptation objective.

5. Multilevel Governance Prospects and Constraints for Climate Change Adaptation

Multi-level governance is an important theory to perform and nourish the implementation and development of policies, especially climate change adaptation. This concept is important as it assures decentralisation of powers in participatory and interactions between different actors, either state or non-state (Miller, 2002). This section will then provide the prospects of this concept and thus diagnose the limitations evolved during its processes within local government planning.

5.1 Prospects of MLG at the Local Government Planning

Numerous actions have been made since the adoption of the multi-level governance in south Africa (Boyd, 2012). In the application of multilevel governance, different powers are shared amongst different administrates to ensure concerted efforts to address climate change. South African local government tries to respond to exclusion and undemocratic governance that was imposed for the past years. There are 9 provinces, 8 metros, 44 districts and 278 local municipalities that tries to bridge the gap and formulate policies that will develop the country by improvising on the minimum standard of living as well as coming up with mechanisms to improve socio-economic issues (Boyd, 2012). This interaction indeed plays a pivotal role in ensuring solidarity among such stakeholders (Boyd, 2012) and thus creates the potentiality to address the developmental challenges facing the country such as climate change. The motive of practicing multilevel governance in planning deepen accountability, transparency and openness between actors, which help bridge some of the challenges local government are facing such as financial and human resources. Therefore, this is important in climate change adaptation objective in South Africa.

Decentralisation of powers amongst different actors assures that all sectors are accountable. Further, the multilevel governance enhances the municipalities to have responsibilities in implementing and formulating policies on climate change adaptation within the country (Miller, 2002). This drives efficiency and effectivity in policy implementation and municipal plans and IDPs (Miller, 2002).

Substantively, multilevel governance widens the political participation and participatory planning approach in the government structures. Moreover, multilevel governance in the local played an enormous role in facilitating sustainable development and promoting good governance (Matthew & Hammill, 2009). Multilevel governance significantly guides sustainable development goals in such a way that climate change adaptation and any other policy formulated are sustainable. This practice automatically assured good governance solely because such policies aligned are effective in a way that they will be on a sustainable basis. Miller (2002) states that Multi-level governance ensured local people in planning to make their own initiatives in development related goals (Miller, 2002). This gives local planning the drive to implement their own policies that are effective in preventing climate change, hence, there were loopholes revolved around the policy adaptation for climate change. All policies are bound and directed by the Constitution which promotes the notion of participation (Boyd, 2012). Local municipalities draft their own policies for climate change, focusing more on the level and the context of their jurisdiction. It makes it even more simple to articulate and implement such policies necessarily because a single group in the government cannot maintain and provides interests of the total population (Miller, 2002). In this manner, Greenhouse gases may be reduced due to the effectiveness of such policies (Boyd, 2012).

Multi-level governance promotes efficiency in service provision for local people. This would mean that decentralisation of powers creates recognition for services to be provided by the state as it assures the welfares of civil society as well as engaging diverse stakeholders that may be more operative in service provision (Boyd, 2012). Multi-level governance which is best manifested in strong, autonomous and vibrant systems of local government reduces the cost of resources for locality through accountability and transparency (Lobell *et al.*, 2008). In this regard, authorising other stakeholders in decision making

for policy formulation and implementation is effective in assuring that resources are well managed and that of accountability is easily monitored in order to ensure climate change adaptation. Different engines in participatory processes for local planning have been beneficial because it promoted policy influence and decision-making during participatory processes that indeed improved the developmental goals.

5.2 Constraints of Multilevel Governance at the Local Government Planning

There are numeral constraints that local government planning is faced with, that may include; destabilization and intra-regional inequalities. The authority of giving away powers to local people may create gaps from region to region. Since different regions are differently endowed in terms of natural resources, level of economic activities, land values (Miller, 2002). For some local jurisdictions, this may cause them to produce more revenue than others and afford their populations more or better quality services than is provided in poorer jurisdictions (Miller, 2002). It has also brought higher risks of resource or power capture, in a sense that different elites and stakeholders have authority or power to make some decisions that may only benefit them. This creates the action of mismanagement of resources which promote corruption and fraudulent within government structures (Murray & Simeon, 2011). The increment in the level of corruption limits the amount of money that can be used for developmental needs. Therefore, local government will not have enough budget to undertake climate change adaptation policy implementation. Weak accountability and supervision creates a bold risk in resource use and facilitation, necessarily promoting policies to fail (Murray & Simeon, 2011). Multi-level governance in most cases is seen as unrealistic in local planning for South Africa, solely because the national government may still have power over every decision taken at the local level. This shows that despite the decentralization of governance from the upper echelon of government, national continues to influence the decision making at the local level. Thus, the implementation of climate change adaptation will continue to be a pipe dream in South African local government. Nevertheless, this will have a negative effect in planning for locals since the interests of the local people are sometimes not given superiority, which may mean that some plans may be poorly implemented (Murray & Simeon, 2011). Multi-level governance tends to be more multifaceted, as it

maneuvers from different levels of governance that in most cases cause discrepancies aligned with different interests for different developmental goals. This then promotes confusion and lack of direction in the local planning government (Murray & Simeon, 2011).

6. Conclusion

South Africa is currently experiencing the effects of climate change and Cape Town and Johannesburg are the cities that are most hit. Adaptation to climate change is very important to ensure that cities are operational post disaster. Multilevel governance gives local government with the potentiality to facilitate the implementation of climate change adaptation policy. However, from the three local municipality's IDPs, it is clear that the effects of climate change are recognised. To a greater extent, the municipalities do not have strategies that must be put in place in order to ensure that they are adaptable to the effects of climate change. Therefore, it can be concluded that local government within Capricorn district municipality do not play central roles in ensuring that their areas are adaptable to climate change. Further, the lack of cooperation and collaboration between municipalities in terms of implementing adaptation objectives derail the efforts to address climate change. It can be noted that most local municipalities are not embracing multilevel governance in order to circumvent some of the challenges they are facing. Therefore, local government should start to enforce the notion of collaboration and coordination in the quest to address climate change adaptation objective. Local government should embrace the notion of multi-level governance in order to circumvent challenges such as financial and capacitated human resources.

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