Exploring perspectives that underpin decisions for southern African urban development

Insights from Lusaka, Zambia

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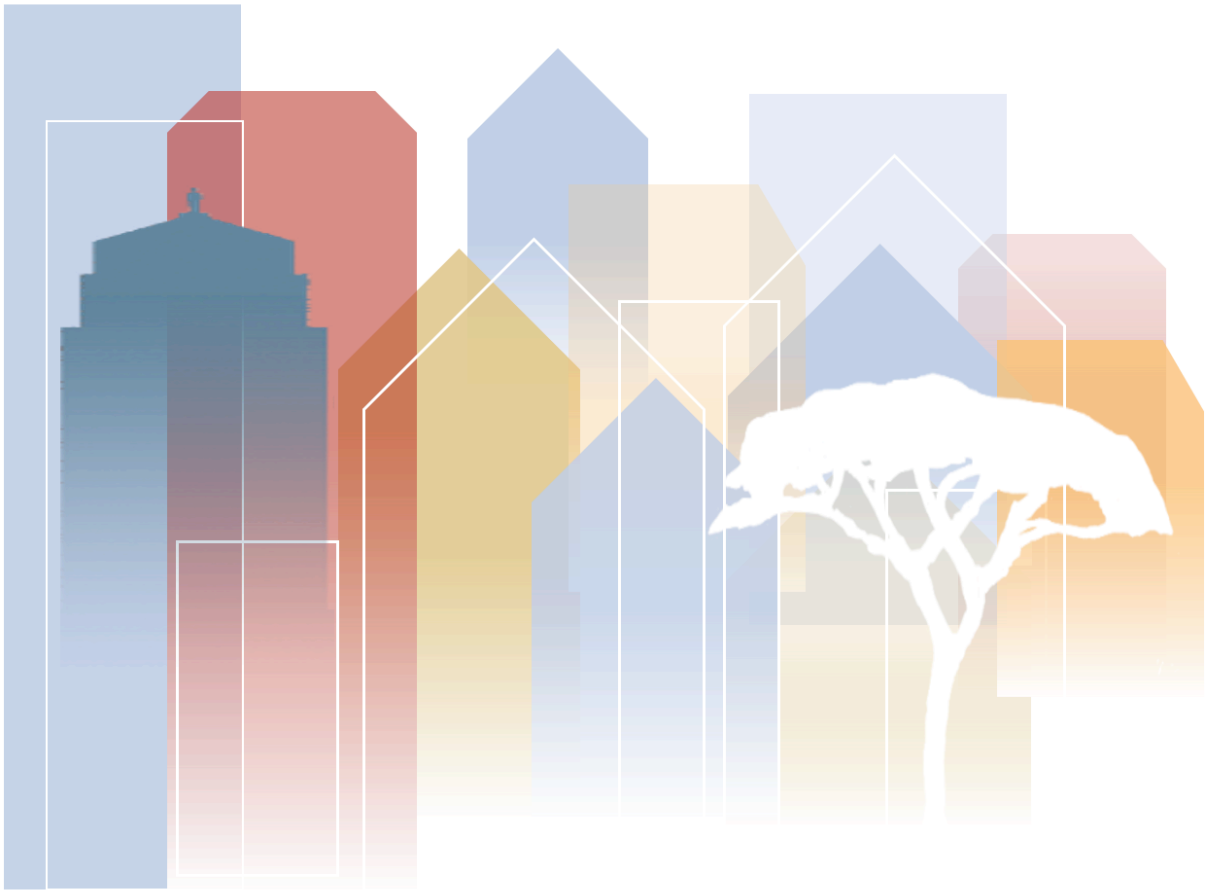

FRACTAL Think Piece | April 2019 | Produced by FRACTAL Embedded Researchers

Part of the CDKN-funded research within Future Climate For Africa (FCFA)

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Background

This is a discussion piece on the preliminary findings of a research process and activity around the values and perceptions of decision-makers on the Kafue Bulk Project. The Kafue Bulk Water Infrastructure project was chosen because of its compelling relative magnitude and scale in relation to the existing and planned water infrastructure in Lusaka. The city of Lusaka relies on both ground and surface water. Ground water is abstracted using both domestic and industrial boreholes while surface water is sourced from the Kafue river. Water is uplifted in bulk from the Kafue River, treated at the Iolanda treatment plant then transported about 45 kilometres to the city via a pipeline. The treatment plant was built after independence in the 1970s after the realisation that the city could no longer rely on ground water sources alone. Apart from a few refurbishments over the years, the plant had not been expanded whereas the city population and economic activities have been growing over the years. Thus, the demand for water and sanitation services outstripped the supply, prompting increased investments in the water sector by both government and various cooperating partners.

The Bulk Water Project for the development of a water pipeline from the Kafue River to Lusaka aims to improve access to water for residents and businesses in the city of Lusaka. It is an infrastructure project that was funded using a loan from the Africa Development Bank (ADB), the World Bank (WB), the German Development Agency (GIZ), European Investment Bank and the Government of Zambia. The project is being implemented by Lusaka Water and Sewerage Company (LWSC). The project comprises several components. One part of the project is the installation of submissive pumps that will increase the abstraction at the Iolanda Plant. This involves the replacement of pumps that were installed as far back as the 1950s – before independence. The other component is the laying of a pipeline from Kafue to Lusaka and connecting several households on the already existing grid. This means that new connections will be of a limited number. The third component was outsourced to the Peoples Process on Housing and Poverty in Zambia (PPHPZ), who were responsible for facilitating community buy-in and the construction of about 800 waterborne toilets for about 1000 households in Mtendere.

Literature debates on decision-making in urban infrastructure

This section reviewed literature on decision-making in relation to the Kafue Bulky Water Project. The study of the bulk water project sought to consider the values and perception of the decision-makers involved in the large infrastructure projects like the one under study. According to Dietz (2012), in decision-making science, social learning takes place within a scientific community and this guides science communication. Thus, decision-making is ideally supposed to be driven by science communication and behaviour modifications due to social learning. Science communication provides facts while social learning illuminates contextual issues shaping phenomena. Thus, decision-making is intrinsically shaped by how facts and values are integrated to inform choice of action. The value aspects of decision-making introduce the idea of economic incentives, disincentives and opportunities for personal gain (Chiodelli, 2018). Thus, decision-making on large urban infrastructural investments tends to assume the political economy of decision science in urban development and infrastructure development (Chiodelli, 2018). Ran and Qi (2018) emphasize that social framework of norms and values, impact decision-making in institutions in development and governance institutions. Thus, values and perceptions are significant structuring elements of public decision-making systems, processes and outcomes. Poortinga et al. (2011) argue that with public policy, decision-making in resources allocation depends on the political values that form the governance infrastructure for a group or individuals. The degree to which values and perceptions align themselves in support of the public value dictates the attention it will receive. Corner et al., (2014) argue that in public engagement, values play a central role for effective interaction, which philosophically are a form of ethics. In their study, it is concluded that willingness to accept policy measures was positively related to self-transcendent values (care for the "other" and not the "self"), and willingness to support specific policy prescriptions from the state or a governing entity within the grouping. They contend that the values we hold influence how we interpret the information we are exposed to, in ways that lead us to either accept or reject the need for engagement or to act.

Values are filters of interpretation of information that individuals are exposed to and as such it determines the effectiveness of engagement strategies. The challenges often arise when reconciling positions across diverse values that any given group of individuals holds. It is however, a necessary step to explore these values and perception diversities and understand the congruence of their actions. Thus, to holistically understand the project impacts on different stakeholders, the study included representatives from the districts through which the bulky water infrastructure passed. McDonald et al. (2015) make a note

that the proximity to the phenomenon affects the response and degree of attention the phenomenon receives in the decision-making circles as it has attitudinal and behavioural implications. Even though the water is solely meant for Lusaka, it passes through other districts and jurisdictions. These districts may not necessarily have a say during the planning and implementation process of such a large project. However, because it passes through their jurisdiction, they can express an opinion over the project. It was therefore imperative to find out the levels of involvement of these districts.

In decisions that address a public problem should endeavour to learn the intricacies in societal values and norms to become relevant. The Kafue Bulk Water Project deals with a type of infrastructure that has seen a significant amount of literature on its role in the social and economic urban processes. Infrastructure has become an influential factor in defining urban space fundamentally regarding its functions, transcending the definitive perception of physical services that aided production in the urban economy, to include social and cultural factors. Attempts on improving infrastructure should possess a level of nuance about the social and cultural urban dynamics (Kodongo and Ojah, 2016). McFarlane and Rutherford (2008) have thus argued that decisions on urban infrastructure is more than the physical process of deploying network and services in the urban fabric and is a negotiated process that blends the social cultural and political factors. It becomes necessary that decision-making on public network infrastructure as is the case in the project under review, should at all stages attempt to explore the values of the people they intend to impact.

Methodological approach and processes

We used qualitative methods to study decision-making processes on the Kafue Bulk Water Project. The study deployed interviews to obtain data and information from all public institutions that have a direct interest in the project. These included the Lusaka South Multi Facility Economic Zone (LS-MFEZ), Lusaka City Council (LCC), Kafue District Council (KDC), Shibuyunji District Council (SDC) and Peoples Process on Housing and Poverty in Zambia (PPHPZ). The discussions focused on the planning and inception phase of the project, covering the engagement process, and prioritization. Further, the study used a discourse analysis approach to critically analyse the text used in project documents and the decisions made. The analysis of the relevant documents involved among others, the Lusaka Comprehensive Urban Development, the Urban and Regional Planning Act of 2015, the Lusaka Water Investment Plan and the project concept. An analysis of city documents was designed to increase nuanced understanding of the various components and expected contribution of the project. The variables used to determine value for the project included financial stability for

the water company, technical, socio-economic benefit and improved social image of the company.

The study also included a session with various professionals from the stakeholder institutions to gain a better understanding of the decision-making processes and the underlying values and perceptions that were at play. The one-day workshop took place in Lusaka and participants enabled the team to have a critical engagement of the findings and digest dynamics that shaped decision-making processes on the Kafue Bulk Water Project.

Findings based on city documents

The project was part of the Comprehensive Urban Development Plan (CUDP) that was launched in 2009 under the Ministry of Local Government. In this plan three (3) components were prioritised for the city, after the study on the development needs of Lusaka by the Japanese International Cooperating Agency (JICA, 2006). The areas prioritised were: urban transportation; water supply and sanitation; and living improvements.

The transportation component involved the Japanese funded inner-ring and the outer-ring road projects. The water and sanitation project prioritised the replacing of submersive pumps, the installation of additional pipelines and the connection of household to sanitation facilities. On the water and sanitation component, the findings of the study were that water consumption demand had increased in accordance with the population growth projection of the city. At the time of the JICA study in 2006, water demand was estimated at 340,000 m^3/day and was projected to increase to approximately 600,000 m^3/day by 2030. It was also anticipated that in addition to domestic water use, industrial water demand would grow due to increased industrial activities and especially in light of the development of the Lusaka South Multi-Facility Economic Zones (LS-MFEZ).

> *"However, looking at the inception of the Kafue Bulk Water Project, Lusaka South Multi-Facility Economic Zone (LS-MFEZ) was not considered despite LWSC having been part of the technical committee for the setting up of the LS-MFEZ. We recently had one meeting and from the look of things LS-MFEZ does not look a likely-target for the project. The questions around this are on whether the expanded capacity following the Kafue Bulk Project implementation meets the water demands for the city and also the zone's needs. LWSC has actually proposed drilling more commercial water boreholes to supply the zone looking."*

The financing of the water and sanitation project was on the basis of the prioritisation in the CUDP. The American government was approached to finance the project through an application by Lusaka Water and Sewerage Company

(LWSC). The agreement of funding escalated to that of a bilateral nature between the American government and the government of the Republic of Zambia. Certain benchmarks were set before the amount of $330,000 was to be released for the works in 2013. This included satisfying certain variables such as transparency, inclusivity and accountability as essential attributes of good governance and democracy.

Through the interviews conducted, it has been established that the main beneficiaries are LWSC, ZESCO and Road Development Agency (RDA). Out of the Millennium Challenge Account (MCA) agreement, the development of a drainage master plan included the components of water and sanitation to deal with wastewater. A Louisiana headquartered engineering firm called Gulf Engineering was engaged in 2008/2009 to undertake a feasibility study and recommended that the component of water and sanitation be prioritised within the available funds as well as a time period of 5 years.

Discussion

To understand the values and perceptions, a recap on the background of the project with stakeholders who were involved in the decision-making process, was undertaken. A discussion with a technical decision-maker from the local authority revealed that the main values considered during the decision-making process were those of having a high-beneficiary, high-impact project that could be undertaken using the available funds. In other words, the project aimed at being of high benefit to ordinary citizens. Finances were considered to be very important for the informants interviewed. Many felt that the level of importance was heightened because the finances had been obtained through a grant. Importance and high value given to implementing a high-impact process was followed by the value of having to increase water supply and access to improved sanitation for low income households. In addition, the decision of both scale and routing of the infrastructure was based on the ecological benefits of the project. This was sought through strategies that aimed to connect thousands of households to networked infrastructures and wean them of on-site pit latrines in informal areas of the City. The overarching motives shaping the decisions were associated with government and funder objectives on improved health in Lusaka. In terms of values, this was the order of priorities:

- To undertake the project within the timeframe.
- To ensure the techniques and technologies used to design and implement would be within the budget of the grant. This also focused on the financial value.

- Socio-economic benefits: on this one, over 1000 households in Mtendere were provided with flushable toilets.
- Service provision: in terms of service provision, focus and value seemed to focus on the city central points and expansion of the supply to the existing network. Districts where the pipeline passes have not tapped into this expanded infrastructure. These districts include Shibuyunji, Kafue and the Lusaka South Multi-Facility Economic Zone (LS-MFEZ).

The excerpt below is an extract from the discussion with the LS-MFEZ Development Manager – Technical, which reaffirms the value that underpins the project:

> *"The project has a huge potential. Especially when you look at the southern side of the city which has an acute water problem, relying on boreholes. As the zone, we have been approached by the neighbouring properties asking if we could supply them with water. As the bulk water line gets to the zone it becomes easy to extend to these neighbouring properties, especially that as this zone develops the small holdings around us will become a concentration of development providing services to the zone such as accommodation of workers that have jobs in the zone. Overall the project will reduce the huge dependence on underground water which is becoming an observed reason for the sinkholes occurring in the zone. This may extend to other parts of the city."*

In terms of engagement and consultation, some key stakeholders stated that they were not consulted in the process or were only engaged temporarily. This left them with a perception that their institutional plans, which benefit the same people as the Kafue Bulk Project, were considered irrelevant or less important. It was found that consultation and engagement of stakeholders had not occur at a city level as well as with grass roots representatives until a much later time – around implementation stage. Respondents also felt that much of the value was placed on financial capacity rather than multiple types of beneficiaries. Below are some perspectives from some of the discussants.

> *"Also, I can say that we may have not been part of the initial process of the project but at project implementation we are made to become a full participant for the very fact that we are part of SCAP (Sanitation Connection Action Plan) which is the implementation framework that will drive the city towards improved access to clean water and sanitation."*

In some cases, stakeholders were engaged at the inception phase, but ended-up falling off due to various reasons which the researchers aim to tease out during the Focus Group Discussion planned.

The findings in the study show that decisions in the project were made based on the consultant's recommendations for project focus, project financial and geographical scale as well as temporal restrictions and potential benefits to society. This is a five-year project that focused on improving water and sanitation services in Lusaka. Thus, the project framing and management system and structure were pre-determined. Hence, decision-making processes and outcomes seem to focus on the need to complete the project within set time horizon, achieve maximum impact and 'fix' the water-health problem as defined by the consultant. The involvement of National Ministries further indicates the nature of complexity in decision-making on urban spaces. Decision-making on the project was based on more actors spreading from local to international actors. This resonates with the arguments made by Ran and Qi (2017) collaboration is always associated with potential costs, including a loss of decision-making or operating autonomy. Thus, science communication and social learning need to engage in and with shared spaces spreading beyond city decision-making jurisdiction. This is particularly pertinent when one looks at the core role of consultants and project design and operationalisation.

Way forward on probing the values and perspectives of decision-makers on the Kafue Bulk Water Project

Going forward, the discussion piece will attempt to tease out the contradictions between institutions. On the one hand, some respondents felt that the prioritisation and selection of the scope of works was limited to a fixed amount of money and therefore the scope was narrow. The other reasoning is that extreme weather events in Lusaka resulted in the addition of the development of the drainage master plan. It was felt that there was limited coordination and pooling of resources to ensure that areas outside Lusaka and on the periphery could also tap into these new infrastructures and increase/improve supply to areas such as LS-MFEZ.

The decision-makers identified from the utility company and the local authority, all felt that issues of technical capacity and number of beneficiaries were predetermined and out tramped by a fixed amount of funds. Anything out of this scope was not valued as much as the financial capacity of the project. It has also been noticed that many are not familiar with the CUDP which is the key document that prioritised the Kafue Bulk Project. There is a *"silo arrangement"* where respondents are only familiar with the components of the project that concern them without realising that there is a bigger picture. This approach to development planning and decision-making creates a scenario where actors act as though they are in competition with one another. The study established that

the project was largely driven by Lusaka Water and Sewerage Company with significant external input by consultants. This approach to decision-making in the project pushed out other local actors leading to visible and established misgivings on the actual benefits of the project.

Below is the narration of the think tank session that established the values and perceptions that decision-makers in the water sector had. During the think tank, participants drawn from Lusaka Water and Sewerage Company, Lusaka City Council, Kafue District Council, Shibuyunji District council and the Lusaka multi facility economic zone confirmed that the rationale behind the Kafue Bulk Water Project was aimed at improving quality, quantity and access to water in Lusaka from the Kafue River. The project is being implemented by Lusaka Water and Sewerage Company and is funded using a loan from the Africa Development Bank, the World Bank, the German Development Agency, European Investment Bank and the Government of Zambia. Overall, the project was segmented into three parts, which are:

1. Improving the uptake by changing the general infrastructure at Iolanda treatment plant in Kafue. This involved the replacement of submersive pumps at the pump station to improve the water abstraction.
2. Improving access, quality and quantity by laying the bulk-pipe line from Kafue to Lusaka.
3. Improving sanitation facilities in Mtendere. People's Process in Housing and Poverty in Zambia (PPHPZ) sub-contracted to construct over 1000 waterborne toilets. This component followed the realization that Mtendere was sitting on one of the city's underground aquifers.

Based on data obtained through key informant interviews and a half a day think tank session, the following values have been established as being a priority for decision makers, and are listed in order of priority

Discretionary and Differentiation - Governments power of intervention and by who/how

1. In (Differentiated) assignment of advantages and disadvantages.

2. Integrity and honesty – levels of transparency and opportunities for accountability in the process.

3. Sustainability in all forms – financial, ecological and social sustainability of the project. How did the decision-making process take this into account?

4. Extent of Legislative and Bureaucratic deficiencies in decision-making process.

5. Inclusiveness – who participated in the decision-making process.

The think tank participants were of the view that there was a need to implement the project within the anticipated time frame. There is also a need to ensure the technique and technology to be used to be included in the budget of the grant. This aspect reinforces the aspect of financial value of the project. Socio economic benefits were also a huge value for decision makers. For instance over 1000 waterborne toilets were to be constructed in Mtendere compound, which would result in improved service delivery by Lusaka water and sewerage company.

After discussing the values and perceptions, the following were the agreed upon first steps by participants of the think tank session.

The Next Steps

Kafue Bulk Water Project

The first team identified the following as the next steps for the Kafue Bulk Water Project:

- Collaboration among the different stakeholders in terms of research. This might cut down on consultancy fees, which projects of this kind usually incur.
- Reduce over reliance on consultants and invest in local capacity development for collaborative decision-making. This should involve creating opportunities for effective science communication and social learning.
- Collectively source for funding on future water projects in the city. This block-funding-type of model allows accessing of finances at reduced costs as compared to contracted loans
- Work closely with each other in terms of planning, designing and implementation of projects.
- Identify and strengthen Public Private Partnerships (PPP) in service delivery to the community.
- Effective stakeholder mapping so as to ensure inclusiveness on future projects.
- There is a need for the team to create a business model for non-revenue water.
- There is also a need to review the projects being spearheaded by The Lusaka Water Security Initiative.

The Iolanda Water Project

As stated by representatives from Lusaka water and sewerage the following were the next steps proposed to build on the Iolanda treatment plant project with contributions being made by individuals from other organizations**.**

The team identified the following as the next steps for the Iolanda Water Project:

- Addressing the challenge of non-revenue water is one of the major steps going forwards for the team.
- Incorporating Public Private Partnerships (PPP) in service delivery must be strengthened for the project to record even greater successes.
- Local authorities and water utility firms must partner with real estate developers in providing comprehensive services to new housing developments across the city.
- There is an urgent need to improve water and sanitation in and around the city.
- Institutions on the project must apply for block funding through the Lusaka Water Security Initiative (LuWSI).
- Collaboration from the inception of projects to their completion must be prioritized.
- Investment in sustainable acquisition of water for other uses must be prioritized e.g. rain harvesting and channelling of storm water to agricultural uses.
- There is a need to scale up information sharing among the organizations that are actively participating on the project.
- Local authorities must upgrade legislation on septic tanks from the primary types to the secondary types so as to reduce contamination of ground water sources.
- In the near future the Iolanda Water Project must connect the Lusaka South Multi Facility Economic Zone to the network so as to protect the ground water on which the zone sits.
- Research institutions such as the University of Zambia must model future demand for water in the city to help for planning purposes.
- There is need to increase sensitization of beneficiaries of the project.
- Shibuyunji district must be incorporated in to the Kafue Bulk Water Project and the Lusaka Water Security Initiative (LuWSI).

With this being done, the participants were thanked for attending the think tank session and were advised that the fractal project was ending in June 2019. Before the end of the project, the Lusaka team intends to hold a conference in Lusaka where the other eight FRACTAL cities will be in attendance, showcasing their research around integrating climate information into decision-making.

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