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URBAN JUSTICE IN SERVICE PROVISION

HOUSEHOLD WATER ACCESS AND DISPOSAL IN BUJUMBURA, BURUNDI

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URBAN JUSTICE IN SERVICE PROVISION

Household Water Access and Disposal in Bujumbura, Burundi

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Confirmation of Authorship

I hereby certify and that this dissertation “Urban Justice in Service Provision: Household Water Access and Disposal in Bujumbura, Burundi” is my own work and that where knowledge, ideas and words of others have been drawn upon, whether published or unpublished, due acknowledgements have been given. This material has not been submitted in the presented or in a similar form to any other examination authority both nationally or internationally

Erklärung zur Dissertation

Ich versichere hiermit, dass die vorliegende Dissertation “Urban Justice in Service Provision: Household Water Access and Disposal in Bujumbura, Burundi” selbständig und nur unter Verwendung der angegebenen Quellen angefertigt habe. Alle wörtlichen und sinngemäßen Entlenungen sind unter Angaben der Quelle kenntlich gemacht. Die Arbeit wurde bisher weder im In- noch Ausland in gleicher oder ähnlicher Form einer anderen Prüfungsbehörde vorgelegt.

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Darmstadt, 13. June 2018

Anais De Keijser, M.Sc.

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Abstract

Household access to- and disposal of- water is one of the main building blocks of a well functioning society. Sadly, these services remain absent, unaffordable, or of inadequate quality for many of the world's urban populations. This is the case for many households of Bujumbura, where service provision is not as much a question of passive reception as one of active co-provision. Households are actively involved in finding ways to extend the service, creating alternatives, and developing coping strategies through which they try to ensure water can be accessed and disposed off adequately. Without this active involvement of households the state through its public utilities would be unable to reliably provide these services to the city's urban population. Numerous factors have become challenges in the provision of public services. This includes: the pollution of the resource and the environment; high levels of poverty relating to affordability of provided services; and a high degree of infrastructure failures. Within this context, the concept of system-D describes fend-for-yourself approaches that have become crucial in the provision of such services. Planners working in such contexts have to understand such processes in the working of urban systems, as well as the ethical implications they carry. Based on the assumed need for a normative ethical approach to planning this work engages with urban justice debate through an analytical framework developed by a post-colonial translation of the Susan Fainstein's (2010) Just City concept. Through this analytical framework a multi-scalar analysis seeks to evaluate equity, diversity, and democracy in the case of household water access and disposal in Bujumbura. In addition, through an 'Ordinary City' framing the empirical insights from the case study feed back into the urban justice debates, presenting a process of translation and an innovation to the Just City concept. Finally the work proposes action-oriented recommendations that can contribute in steering the ethical development of these services; such as small-scale investments into storage tanks at key facilities (such as local health centers) or introducing the use of appropriate technologies to facilitate water transportation for households (such as the Hippo Water Roller).

Key words: Water and Sanitation, Infrastructure- & Service- Provision, Informality, Bujumbura, Post-Colonial Theory, Urban Justice, Just City, Equity, Diversity, Democracy

Zusammenfassung

Der Zugang und die Entsorgung von Wasser ist einer der Hauptbausteine einer gut funktionierenden Gesellschaft. Leider sind diese Dienste für viele Stadtbewohner der Welt nicht vorhanden. Dies ist der Fall für viele Haushalte in Bujumbura, wo die Erbringung von Dienstleistungen nicht so sehr eine Frage des passiven Empfangs ist, als vielmehr eine Frage der aktiven Mitbestimmung. Haushalte sind aktiv daran beteiligt, Wege zu finden den Service zu erweitern, Alternativen zu schaffen mit denen sie versuchen sicherzustellen, dass Wasser angemessen genutzt und entsorgt werden kann. Ohne diese aktive Beteiligung der Haushalte wäre der Staat durch seine öffentlichen Versorgungsbetriebe nicht in der Lage, diese Dienstleistungen zuverlässig bereitzustellen. Dies ist auf zahlreiche Herausforderungen, sowie die Verschmutzung der Ressource und der Umwelt; hohe Armut; und ein hohes Maß an Infrastrukturausfällen zurück zu führen. In diesem Kontext beschreibt das Konzept von System-D die Selbstansiedlungsansätze, die für die Bereitstellung solcher Dienste entscheidend geworden sind. Planer, die in einem solchen Kontext arbeiten, müssen die Bedeutung solcher Prozesse für das Funktionieren urbaner Systeme, sowie deren ethische Implikationen verstehen. Basierend auf dem angenommenen Bedürfnis nach einem normativen, ethischen Ansatz für die Planung geht diese Arbeit mit der Debatte um urbane Gerechtigkeit durch einen analytischen Rahmen einher, der durch eine postkoloniale Übersetzung des Konzepts von Just City von Susan Fainstein (2010) entwickelt wurde. Durch diesen analytischen Rahmen versucht eine multi-skalaere Analyse, Gerechtigkeit, Vielfalt und Demokratie in der Studie zu bewerten. Darüber hinaus fließen die empirischen Erkenntnisse in die städtischen Gerechtigkeitsdebatten ein und stellen einen Übersetzungsprozess und eine Innovation für das Just City-Konzept dar. Zum Schluß schlägt die Arbeit handlungsorientierte Empfehlungen vor, wie zum Beispiel kleine Investitionen in Lagertanks in Schlüsselanlagen wie lokale Gesundheitszentren oder die Einführung geeigneter Technologien zur Erleichterung des Wassertransports für Haushalte (zum Beispiel Hippo Water Roller).

Schlüsselwörter: Wasser- und Sanitärversorgung, Infrastrukturversorgung, Informalität, Bujumbura, postkoloniale Theorie, städtische Gerechtigkeit, gerechte Stadt, Gerechtigkeit, Diversität, Demokratie

Résumé

L'accès des ménages à l'eau et l'assainissement est l'un des principaux éléments constitutifs d'une société fonctionnelle. Malheureusement, ces services demeurent absents pour de nombreuses populations urbaines dans le monde. C'est le cas de nombreux foyers de Bujumbura, où l'accès à l'eau n'est pas tant une question de réception passive que de co-production active. Les ménages participent à la recherche de moyens d'accéder à une infrastructure, à la création d'alternative grâce auxquelles ils tentent de s'assurer un accès adéquat à l'eau et à l'assainissement. Sans cette participation des ménages, l'État par l'intermédiaire des services publics, ne serait pas en mesure de fournir une prestation fiable à la population urbaine. De nombreux facteurs sont devenus des défis, notamment: la pollution de la ressource et de l'environnement, des niveaux élevés de pauvreté et d'un degré élevé de défaillance d'infrastructures. Dans ce contexte, le concept de système-D est devenu crucial. Les urbanistes qui travaillent dans de tels circonstances doivent comprendre ces processus dans le fonctionnement des systèmes urbains, ainsi que leurs implications éthiques. Basé sur le besoin supposé d'une approche éthique normative pour la planification, ce travail s'engage dans le débat sur la justice urbaine à travers un cadre analytique développé par une traduction postcoloniale du concept de la Just City de Susan Fainstein (2010). À travers ce cadre analytique, une analyse multi-échelle cherche à évaluer l'équité, la diversité et la démocratie. En outre, par le biais d'une "ville ordinaire", les idées empiriques issues de l'étude de cas se répercutent dans les débats sur la justice urbaine. Enfin, ce travail propose des recommandations dirigées vers des actions qui peuvent contribuer à orienter le développement éthique de la ville telles que; des investissements à petite échelle dans des réservoirs de stockage au cœur d'installations clés (comme les centres de santé locaux) ou l'utilisation de technologies appropriées pour faciliter le transport de l'eau vers les ménages (comme le Hippo Water Roller).

Mots clés:

Eau et assainissement, Infrastructure, Informalité, Bujumbura, Théorie postcoloniale, Théorie de Justice urbaine, Ville juste, Équité, Diversité, Démocratie.

Icegeranyo

Mu bintu nyamukuru vyerekana igihugu gisharije, harimwo ukuronka amazi n'ukuba ahantu hafise isuku mungo zose. Mugabo mu bisagara vyinsi vyo kw'isi, iryo terambere ntiriri hose. Mungo nyinshi mu gisagara ca Bujumbura, iryo terambere ntawurironka kuri gusa. Mu banyabujumbura, uwubironka aba yararishye igiciro cashinzwe. Abanyagihugu barafasha mu kurondera uburyo bwo gushika kuri iryo terambere, hamwe no kurondera ubundi buryo bufasha kuronka amazi no kuba heza. Mu gihe abanyagihugu badatfashije, leta ntishobora gushikana iryo terambere mu bantu baba mu bisagara.

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Abbreviations and Acronyms

AREEM	Regulatory Agency for Drinking Water, Electricity, and Mines <i>L'Agence de Régulation des Secteurs de l'Eau potable, de l'Electricité et des Mines</i>
CNCE	National Comity for the Coordination of the Sector <i>Comité National de Coordination du Secteur Eau</i>
EDF	European Development Fund
EU	European Union
FBu	Burundian Francs
GIRE	Integrated Water Management Scheme <i>Gestion Intégrée de la Ressource en Eau</i>
GIZ	German Technical Cooperation <i>Deutsche GESELLSCHAFT für Internationale Zusammenarbeit</i>
GSEAE	Sectorial Group for Water, Sanitation, and Environment <i>Groupe Sectoriel Eau, Assainissement et Environnement</i>
IFDD	Francophone Institute of Sustainable Development <i>Institut de la Francophonie pour le Développement Durable</i>
ILO	International Labour Organisation
ISTEEBU	National Institute of Statistics and Economic Studies of Burundi <i>Institut de la Statistique et des Etudes Economiques du Burundi</i>
KfW	German Government-owned Development Bank <i>Kreditanstalt für Wiederaufbau</i>
MDG	Millennium Development Goals
MEEATU	Ministry of Water, Environment, Spatial Planning and Urban Development <i>Ministère de l'Eau, de l'Environnement, de l'Aménagement du Territoire et de l'Urbanisme</i>

MEM	Ministry of Energy and Mines <i>Ministère de l'Énergie et des Mines</i>
MININTER	Ministry of Internal Affairs <i>Ministère de l'Intérieur</i>
MSPLS	Ministry of Public Health and for the fight against AIDS <i>Ministère de la Santé Publique et de Lutte contre le Sida</i>
NGO	Non-Governmental Organisation
ONL	National Bureau of Housing <i>l'Office National du Logement</i>
pH	Potential of Hydrogen
PNEau	National Water Law <i>Politique Nationale de l'Eau</i>
PPP	Public Private Partnership
PROSECEAU	Sectorial Water Programme <i>Programme Sectoriel Eau</i>
PRSP	Poverty Reduction Strategy Papers
SDG	Sustainable Development Goals
REGIDESO	Utility for the Production and Distribution of Water and Electricity <i>la Régie de Production de l'Eau et de l'Électricité</i>
SETEMU	Technical Municipal Services <i>Services Techniques Municipaux</i>
SNEau	National Water Strategy <i>Stratégie Nationale de l'Eau</i>
STS	Science and Technology Studies
UN	United Nations
UNDP	United Nations Development Programme
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development

1 INTRODUCTION

1.1 Water, Sanitation, and the Ethical Dimension of Service Provision

On 28 July 2010 the United Nations General Assembly explicitly recognised water and basic sanitation as a human right. Many have argued that providing these services could be humanity's best investment to achieve development and sustainability (Tipping, Adom, and Tibajuka 2005; UNICEF 2007; United Nations 2015). It could increase potentials in – education, health, employment, safety, etc. The aim is clear, Sustainable Development Goal 6, to ensure universal and equitable access to safe and affordable drinking water and sanitation for all by 2030 (United Nations General Assembly 2015). However, the current situation is such that many households around the world do not have safe, affordable or reliable access to these services. Globally, 1 in 10 people lack access to safe water and 1 in 3 lack access to adequate sanitation (UNICEF and WHO 2017). The situation is most severe in Sub-Saharan Africa. Here, 3 in 10 lack access to safe water and 2 in 3 lack access to adequate sanitation (World Bank, 2017; World Health Organization, 2017). Such geographical variations in access to services equally manifest between the urban and the rural, as well as within the geographical boundaries of a single city.

Many of Africa's fastest growing cities do not provide universal service coverage. Due to the sometimes limited availability of resources, authorities are forced to decide how water is to be rationed and how a limited budget is to be invested. Deciding to invest into one area can have the unintended consequence of excluding in another. Such decisions are based on planning tools and strategies that carry certain values. A popular example is the use of a cost-benefit analysis, where the costs and benefits of alternative decisions are compared to assist the decision making process. The broad interpretation of what costs and benefits are provide a certain leeway in what is to be prioritised. Under the influence of power dynamics and political interests, the decision is made as to how units that cannot be measured along a common scale, can be compared. This enables specific agendas to be followed or priorities to be set, be it environmental protection, economic gains, voter support, job creation or others. This stresses that planning decisions are often already based on normative choices. Starting from this assumption the work presents an approach that can help ensure that planning decisions and goals are not to the disadvantage of those less fortunate. As stated by Franklin D.

Roosevelt (January 20th, 1937) “the test of our progress is not whether we add more to the abundance of those who have much, it is whether we provide enough for those who have too little.”

This dissertation argues that regardless of set priorities, issues of justice cannot be undermined. It therefore calls for the need to evaluate urban service provisioning systems through a justice lens, thus providing an informative basis to assist in decision making and to provide an understanding of related ethical implications.

1.2 A Call for Justice is a Call for Action

Within urban studies, one of the main limitations of the many ethical frameworks is that they are often on a normative theoretical level, offering few solutions for implementation on the ground. The concept of justice on the other hand, is one that calls for action. It calls for changes in this world, to the advantage of the disadvantaged (Fainstein 2010). This work aims to create an outcome of practical value. As such, it can be classified as action research. This is a form of research that seeks to bring together action and reflection, theory and practice (Ison 2008). “Action research embraces the notion of knowledge as socially constructed and, recognises that all research is embedded within a system of values” (Brydon-Miller, Greenwood, and Maguire 2003, 11). Action research acknowledges that it takes an ethical stance and challenges all unjust economic, social and political systems and practices (Ibid).

Taking on an ethical stance can be particularly useful when assessing an infrastructure system. Infrastructure is often considered a ‘black box’, provided by highly technical professionals (Graham and Marvin 2001). Where ‘black box’ refers to an “item whose users (human and non-human) interact with it in ways which are unchallenging to the technology” (Hinchcliffe 1996, 665). This results in often overlooking values and assumptions linked to the infrastructure and its planning process. Science and Technology Studies (STS) have identified critical reflections on infrastructures as a powerful and dynamic way of seeing contemporary cities (see Dupuy, 1991). As stated by Graham and Marvin (2001, 17) “Infrastructure networks unevenly bind spaces together [...] whilst helping also to define the material and social dynamics, and divisions, within and between urban space.” Decisions that affect who is connected to the infrastructure and who is by-passed creates and sustains what is sometimes referred to as ‘socio-technical geometries of power’ (see Massey, 1993).

Taking an ethical stance means importing certain values into the planning process. These values are based on assumptions about the role and nature of societies, the state, cultural needs, and so on (Geyer et al. 2011; Marcuse et al. 2009; McDonald 2012; Watson 2006). Due to these assumptions, there is a need for dialogue between philosophical justice-thinking and the analysis of real world situations (Fincher and Iveson 2011). Thus, this work argues that a justice concept should be translated and contextualised when being transferred from its place of conceptualisation to its place of implementation. The main argument here is that a contextualised justice framework can contribute to guiding the ethical orientation of a city's development.

1.3 Reducing the Unequal Gap between Theory and Practice

Within a framework of action research, a theory is only useful insofar as it is of practical use to help create positive social change (Brydon-Miller et al., 2003). The main problem when working in cities 'beyond the West', is that many of the frameworks of justice within urban debates have been developed in the West and have been criticised as being inadequate to explain the empirical realities of non-Western cities (McLees 2012; Robinson 2013; Watson 2002). Two main streams of thought have developed from such critiques. On the one hand, academics have been trying to build up theories from the South (Simone 2001; Watson 2009; and more). On the other hand, academics have been trying to expand existing theories to be of relevance in a larger number of cities worldwide (Edensor and Jayne 2012; Robinson 2013). In both cases, the goal is the same, to diversify and extend the number of cities that are contributing to urban theory development. Ordinary city approaches start from the premise that all cities are ordinary, and that they can all contribute to the development of theory (Amin and Graham 1997). Building on such ordinary city approaches, Robinson (2002) argues that analysing cities 'off the map'¹ can contribute to broadening planning theory. This could contribute to a broader understanding of 'cityness', which is more inclusive to a diversity of experiences and which will contribute to lessening the uneven gap that exists between theory and practices in various geographies.

¹ this refers to cities that have not been contributing to the production of mainstream planning theory

1.4 The Case Study: Household Water Access and Disposal in Bujumbura, Burundi

Gisèle lives in Kanyosha. From her shack she looks down to the Kanyosha River and hears the animated sounds of the densely populated neighbourhood. At the age of 17 she moved to this place with her husband and child, away from the poverty, the famine, and the conflicts on her native hill - her 'colline'. Starting a new life, she set up a modest vegetable vending business. Every morning before sunrise she travels to the outskirts of the city to buy vegetables from farmers, which she then sells for a meagre profit at the Kanyosha marketplace. Her husband is a poor mason who does not own his tools. So he hires them from the down payments he receives for his jobs. Their income varies depending on how business is, on the season and on the country's economic condition. In crisis times, Gisèle often needs help from relatives to pay the monthly 50 000 FBu rent for their 2-room home, in which she lives with her husband and 5 children. The dwelling has no running water, yet Gisèle does not consider this to be a problem. With her eldest daughter, she buys water from a close-by kiosk daily. This neighbourhood kiosk is only open from 5 to 8 AM so Gisèle prefers to purchase the water before procuring her stock of vegetables. Mother and daughter carry 2 jerry cans and a bucket, approximately 70L. This suffices their household water needs as long as Gisèle does not have laundry to do. The disposal of water is not considered a problem either, as the plot has a gutter that evacuates the used water. In order to do her laundry Gisèle descends to the Kanyosha River, as cleaning clothes requires a lot of water and the river offers just that. However, going down to the river can be a real hassle. As a result, she rarely cleans the children's clothes, as they will only just get dirty again. (Based on Interview 1, 2017)

Gisèle is not alone. She is one of approximately 284,000 people² in Bujumbura, that is not directly connected to the city's centralised water infrastructure. As highlighted through her testimony she, like many others, relies on varied coping strategies to access and dispose of water. Such 'fend-for-yourself' strategies play a key role in determining

² based on numbers by Bideri (2008) and the CIA factbook (2015)

the ethical implications of the system. Yet, little justice research has focused on these strategies.

The city of Bujumbura has been mostly absent within Anglophone urban planning debates. Although the scope of this study will limit itself to household's water access and disposal in Bujumbura, through the ordinary city framing, the research will discuss the relevance of the findings in a wider context.

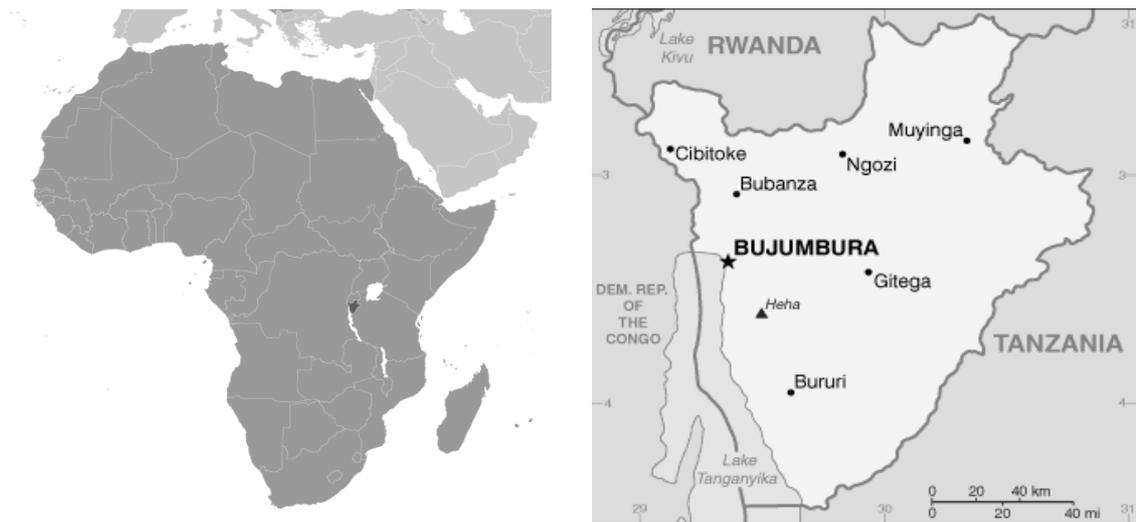


Figure 1: Maps of Burundi (CIA Factbook, 2017)

Burundi is one of the world's poorest countries. Its recent past is marked by ethnical war, cyclical violence and a series of political, social and economic crises. It is a country that is, and has always been, one of the most densely populated countries in Africa (Nduwumwami 1999). With a high population density and limited resources, it is important for the country to use its resources as effectively and sustainably as possible (Ibid). Justice is key in such contexts, as matters of social division, exclusion and inequality present a fragile base for development.

1.5 Theoretical and Practical Relevance

Contextualised empirical research in an under studied city is significant for two main reasons. Firstly, it is significant because of its practical use and relevance in the context of its case study. It assesses justice in service provision and proposes a list of remedies to the main identified sources of injustice. Pieterse (2011) supports the need for such

ethical approaches to planning in urban African. Yet, no prominent research in the African context has been made that evaluates urban service provision through a justice lens.

Justice is a powerful term, that carries political, ethical and mobilising power (Harvey 1973, 202, 398). Within the Burundian context, its importance is accentuated through its presence in key texts. An example is the Arusha Peace and Reconciliation Agreement signed on August 28th 2000. Which states Burundi's engagement to "construct a political order and a system of government inspired by the realities of our country and founded on the values of justice [...]" (Gouvernement of the Republique of Burundi 2000, 14). This work looks into how "the realities of the country" and "values of justice" can be understood in this context. The Burundian Government has made it one of the national priorities to reorganise the water and basic sanitation sector and use it to boost the economic development of the country (Republique du Burundi 2009, 3). This reorganisation follows the basic hypothesis that there is a need to restore the natural link between water and basic sanitation in urban areas in order to help minimise the environmental impacts of the system. This accentuates the local relevance of the case study and of looking at both water access and disposal simultaneously.

Secondly, contextualised empirical research on Bujumbura is theoretically significant because the generated empirical insights can contribute to extending the understandings of concepts of cityness, service provision, justice as well as existing relations between formality and informality in such contexts. Through its unique urban, social, political and cultural past, the case provides new insights to urban justice debates. The work paves the way for other academics and practitioners eager to adopt urban justice concepts as analytical tools for evaluation. It shows how to develop contextually relevant indicators for justice. Additionally, it contributes to extending the body of knowledge associated to the city of Bujumbura and strengthening its role as source of knowledge production within the field of urban studies.

1.6 Research Objectives and Research Questions

The research has two main objectives. On a theoretical level, the work contributes to reducing the unequal gap that exists between theoretical justice thinking in urban debates and justice practices in geographies 'beyond the west'. This is done by developing a translation process that can be used for different concepts in different

geographical and contextual fields. On an empirical level, the research makes specific action-oriented recommendations based on an analysis of justice in household water access and disposal in Bujumbura.

As argued by various scholars (Parnell and Oldfield, 2014; Irazábal, 2009; Thrift, 2000), for cities and urban planning, ‘one size does not fit all’. Thus in order to develop an analytical justice framework, existing concepts have to be translated and contextualised. This dissertation focuses on the following four main research questions:

1. What urban justice concept can be used to evaluate justice in urban service provision?
2. How can that concept be translated in order to provide contextualised and measurable dimensions of analysis in the case of household water access and disposal in Bujumbura?
3. What are the governance structures for household water access and disposal in Bujumbura?
4. How can household water access and disposal in Bujumbura be made more just?

These questions provide an understanding of who is benefitting and who is burdened in the current system and to what degree and why. These will support the hypothesis that justice thinking has its place within the planning and development processes.

1.7 Dissertation Outline

The research is divided into three parts, each containing between one and three chapters (Figure 2).

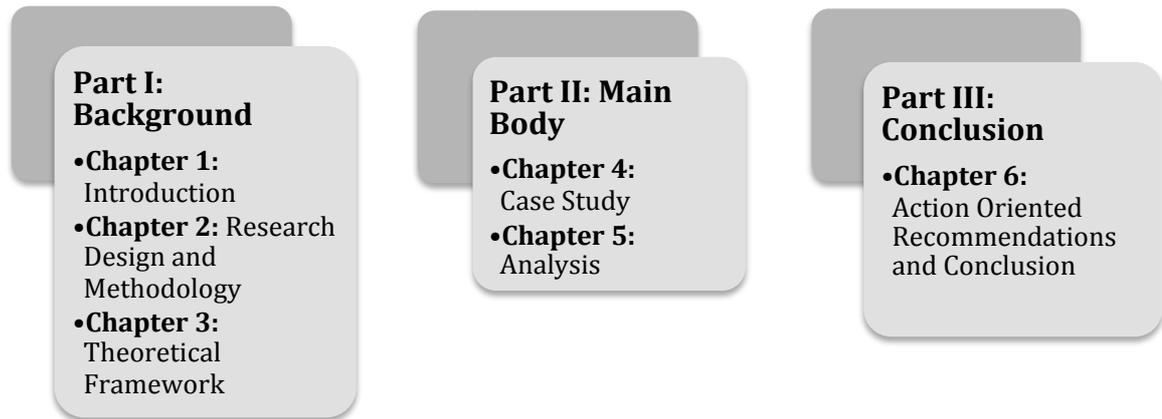


Figure 2: Dissertation Structure (Author's own)

Part I introduces the research with its methodological and theoretical background. It is built up of three chapters. The introduction exposes the research, its relevance, its focus as well as the work's leading research questions. Chapter two explains the methodology and presents the rationale for the selected research methods and design. It discusses the specific methods used during the data collection and analysis. It highlights the options chosen as well as their limitations and challenges. Additionally, this chapter reflects on the positionality of the researcher. Due to the important normative dimension of this work, it is important for the reader to be aware of the assumptions and values that the author carries. The third chapter digs into the theoretical and conceptual framework of the research, discussing the current state of the literature in relation to urban justice and post-colonial debates. Furthermore, it explains why the 'Just City' concept is selected for translation.

Part II is the heart of the work. Chapter four dissects the case study, its historical and socio-political context highlighting the need for a multi-scalar analysis. This analysis is then presented in Chapter 5 where the dimensions of equity, diversity and democracy are analysed through contextualised indicators of justice in the case study.

Finally, Part III summarizes the research, draws the theory and empirical evidence together in order to provide action-oriented recommendations. It then concludes by discussing the relevance of the research findings to urban justice debates and presents potential directions for future research.

2 RESEARCH DESIGN AND METHODOLOGY

This predominantly qualitative research relies on a mixed method design that can be illustrated through 4 phases (Figure 3). These phases, despite being portrayed in this section in a simplified form, do in fact represent an iterative process where the different phases continually inform one another.



Figure 3: Research Phases (Author's own)

2.1 Phase 1: Exploration

“Without flexibility, the path of exploration is likely to become set too firmly in its direction, closing off areas of investigation that might have proved to be illuminating – possibly crucial – to the eventual explanation of the situation being studied.”
(Denscombe, 2007: 97)

The first phase, the exploration, consists majorly of a literature review analysing urban justice debates. Different streams of thought are identified, as well as the critiques and arguments they bring forward. This explorative phase looks into which concept or theory might be of practical use to developing a contextualised analytical framework. Susan Fainstein's (2010) 'Just City' concept is selected as it is an action-oriented concept that brings together the main ideologies that can be found in urban justice debates. It links the ideas that planners should look at both the justness of planning processes as well as the justness of planning outcomes. In addition, the concept presents a multi-dimensional structure of justice with the dimensions of equity, diversity and democracy. This illustrates the complexity and multi-faceted character of the justice. Fainstein (2010:5) admits that her concept as elaborated in her 2010 book is not applicable for poor cities around the world. Yet, she and researchers working in African cities, such as Vanessa Watson (2012), Patric McAuslan (2013), Susan Parnell and Edgar Pieterse (2016), argue that just-city thinking is relevant in these contexts. This work is

of the same opinion, and thus presents a method for translation, through which such concepts can be adapted to different contexts.

2.2 Phase 2: Translation

“Translation brings together things that are separate; it establishes a relation and mediates between multiple elements and makes them comparable.” (Rottenburg 2009:xxxi)”

The methodological approach of translation as used in Science and Technology studies (STS) elaborates how ideas and concepts have to be adapted and appropriated in order to fit to local circumstances. By translating the ‘Just City’ concept, this work illustrates how it can be made relevant to a larger number of cities worldwide. This work proposes new boundaries to the just-city concept, which can contribute to, and inspire new insights into justice thinking in non-Western cities of the world. Naturally, these boundaries can in turn, be subjected to further refinement, validation or rejection.

For the translation process, this work proposes an abductive qualitative analysis of the ‘Just City’ concept. The use of such analysis helps foster theoretical innovation based on surprising research evidence (see authors such as: Coffey and Atkinson 1996; Kelle 2007; Locke 2007, Timmermans & Tavory, 2012). Peirce (1934) distinguished two such types of surprising evidence. The first, novelty is when the analysis points to something that had not been included in the original theory but that seemingly do affect the research problem. The second, anomaly is when the data contradicts the original theory. Based on novelties the ‘Just City’ is expanded, while based on anomalies, specific ideas and assumptions, the concept is built on can be adapted or rejected.

A particular approach that has amassed a significant body of literature contributing to the translation of original theories through non-Western case studies is that of postcolonial theory.

2.2.1 The Post-Colonial Critique of a Concept

Through a post-colonial critique of the concept, insights can be gathered on existing debates that could be of relevance in the case study, but that are outside the scope of

the original concept. In this case, and looking into these debates, insights were acquired as to the relevance of urban studies debates (including: development, informality, African urbanism, complex socio-technical systems, critical infrastructures, resilience, appropriate technologies, etc;). These insights, that have already become part of a more global body of knowledge, are important to consider in order to avoid reproducing the exclusion of this knowledge by accentuating the ‘sameness’ rather than the ‘exceptionism’ of such experiences. Not only academic debates, but also the analysis of the case study have contributed to the identification of novelties and anomalies in the ‘Just City’ concept.

2.2.2 A Qualitative Empirical Investigation of an ‘Ordinary City’

Beyond its role in identifying ‘surprising’ research evidence for the translation of the ‘Just City’ concept, the case study, through an ‘Ordinary City’ framing, can contribute to a more general knowledge production. In addition, it is also the object under analysis in the main body of this dissertation. It is therefore used both as a tool of analysis, as well as an object of analysis. When used as a tool of analysis, data that provides surprising insights into the debates are given special attention as they, rather than the data that confirms what is already known, enable the creation of new scientific knowledge (see Timmermans & Tavory, 2012).

2.2.2.1 Data collection

In relation to the case study, the research analyses a variety of grey literature. This includes: secondary literature, official documents (policies, reports, strategies, etc;) from organisations or governments, websites, newspaper articles, geographical data, maps and visual material.

Secondary literature was collected on the urban development of the city of Bujumbura, on the water supply system, on sanitation, on infrastructure development and on inequalities in relation to water supply and disposal in the city. The larger part of this literature was collected at the university libraries of different campuses at the University of Burundi in Bujumbura. Considering that much of this work has not been digitalised, or distributed abroad, time was made for literature search during both field visits.

Visual evidence was collected during both the first (16th – 29th March 2015) and second (13th February – 17th March 2017) field visits. One of the main data collection methods used within this work are the 31 qualitative semi-structured interviews that were held. These were equally conducted during both field visits with experts with the aim of gathering insights into the formal and institutional structures of the system; service providers to understand their role in the system; and with households in order to get insights into their everyday practices.

Eleven experts were interviewed, representing the following institutions:

- The Ministry of Energy and Mines (responsible for water),
- The Department of Hydraulic Infrastructure and Basic Sanitation within the Ministry,
- The Planning and Research department of SETEMU (responsible for sanitation in the city),
- The REGIDESO (responsible for water provision in the city)
- The Department of Urban and Regional Planning at the University of Burundi,
- The Department of Geography at the University of Burundi,
- The Department of Biology at the University of Burundi (Environmental hazards and Lake water pollution),
- The German Technical Cooperation (GIZ) in Bujumbura (responsible for Planning and investment in Water and Sanitation services in urban areas).

These were one-to-one interviews conducted in French.. The data was collected through a tape recorder or interview notes. The sampling of the experts consisted of purposeful theoretical sampling (see Bhattacharjee, 2012). Before the field research, a list was made of key institutions to be interviewed based on a literature and document analysis.

The expert interviews included 4 interviews with technical staff of the REGIDESO, the public utility responsible for the provision of water in Bujumbura. A representative of the REGIDESO, Willy Manirombona, led a field visit to different sites of the REGIDESO in March 2017. The following facilities were visited: the pumping station at the Tanganyika Lake, the water treatment plant at the Tanganyika Lake, the main laboratory of the REGIDESO, storage facilities and the pumping and treatment facility of a surface water source. The following technical staff of the REGIDESO were interviewed: Engineer, Chemist, Site Manager and a Technical Water provision expert. These interviews were conducted in French whilst being recorded with field notes.

In relation to the households and service providers, a purposive but non-probability sampling was done (see Flyvbjerg, 2016). This means that different areas in the city were identified in which the interviews were made. Remeny et al. (1998) argues that looking at multiple areas can offer a robust framework for data collection and can help make generalisations about the ‘how and why’ of a system under analysis (Miles and Huberman 1994). The following areas were selected (Figure 4): Buterere (1), Cibitoke (2), Kamenge (3), Gihosha (4), Bwiza (5), Buyenzi (6) and Kanyosha (7).



Figure 4: Selected Sampling Areas in Bujumbura (Author's own, based on googlemaps.com)

The selection of the areas has to be of high quality (Kelly 2011, 56) and has to provide a structural representation that matches the purpose of the study (Remeny et al. 1998; Yin 1994). Based on these insights, the selected samples are a collection of areas facing the most severe challenges within the case study with very different characters (older (5,6), peripheral (1,4,7), along rivers (4,5,6,7), in the slopes (4), along the lake (1,7), etc.). This enables an understanding of how such characteristics affect the system under analysis.

Before being able to start with the process of household interviews, a research permit provided by the Mayors Office was required (see Appendix). This caused considerable delay as the Mayor's Office, situated in the Bwiza area, suffered severe electricity cuts at the time (February 2017, as many as 5 days in a row). Once the permit was in hand, access to households was granted after its presentation to the 'Chief of Zone' (chef de zone) in each area. They are the lowest level of city administration and were able to propose a certain starting point for data collection in their area. Focusing on the available infrastructure, households and service providers were selected for interviews based on their presence and acceptance to contribute to the research. In total, 16 households and 5 service providers were interviewed during the second field visit (February – March 2017). While most interviewed household representatives were woman, all but one of the interviewed service providers were men.

The interviews were semi-structured meaning that there was a clear list of issues needing to be addressed while at the same time leaving room for interviewees to develop their own ideas and issues. The interviews enabled a collection of insights like people's opinions, experiences and privileged information (Denscombe 2007, 175). Most household interviews were conducted in Kirundi and instantly translated by a research assistant, Jean François Régis Sindayihebura, and recorded through field notes.

The first step in the interpretation of the data was in the translation. As languages are extremely complex socio-cultural constructs related to culture and history, each language has a way of painting a context around what is said.

Transcribing the data was the second step in the interpretation of the collected data. In order to represent the audible talk as a readable and meaningful written text that can be analysed, it requires a certain amount of reduction, interpretation and representation. As argued by Julia Bailey (2008), despite seeming to be a straightforward technical task, transcribing data in fact involves judgments about what

level of detail to choose which makes it an interpretive process and thus can be considered as the second step in the analysis of the data.

The third step in the interpretation of the interviews was that of coding the transcripts. This was done with the help of the MAXQDA, which is a computer assisted qualitative data analysis software. Segments that might be valuable for the research were identified based on the highest analytical interest. As stated in Bailey (2008), methodological assumptions have direct implications on the data that will be kept. This is very important to keep in mind as the different research phases each have specific aims and thus, from the same raw data, different content will be considered to provide the highest analytical interest. Considering the semi-structured format of the interviews, the coding was equally semi-structured. This means that on the one hand, part of the code was based on the interview questions and the research questions. On the other hand, the remaining code was not predetermined but rather derived from the data, based on statements and ideas that were brought up during the expert interviews. The research considers that issues that were brought up and accentuated the most are of significant importance and of high relevance on the ground (this brought certain themes to light that gave form to the research, for example, the concept of System-D). Some of the most important ‘non-predetermined’ codes that were used were grouped into themes, descriptive data, data that needed further research and data that enabled further research (contacts, administrative procedures etc.). This enabled both a relational and a thematic analysis of the data. More detailed outcomes, discussions and conclusions of this analysis have been incorporated in this work.

2.3 Phase 3: Explanation

“The aim is to arrive at a concept that helps to explain the phenomenon - basic ideas that encapsulate the way that categories relate to each other ... it provides an account of things and in some sense or another, explains why things happen as they do.”
(Denscombe 2007, 98)

Phase 3 describes when the case study is used as the object of analysis. Through a qualitative assessment (see Lynch, 2014) of the collected data key quotes, concepts, processes, numbers and statements are identified that are of value to the research.

Different forms of analysis in Chapters 3 and 4 contributed to this explanatory phase, aiming to understand what affects justice in the case study.

- Chapter 3 makes a critical postcolonial analysis of the ‘Just City’ concept based on the case study. It highlights the issues of: assumed universality; the role of the development discourse; informality as the status quo; the environment; the need-driven nature of civil society in Africa; and the rural nature in Africa all affecting justice in the case study.
- Chapter 4 makes a case study analysis that is built up of 3 main components:
 1. A contextual analysis; that looks at the historical and socio-political context of the case study.
 2. A governance assessment; inspired from Bressers et al.’s (2003) governance assessment tool. This was based on a multi-scalar analysis of stakeholders and strategies.
 3. Identification of main challenges; as these have an important influence on injustices in the system.

All three of these components have an important effect on justice. They are key in understanding the case study. They shed light on the structures and processes that are responsible for major instances of structural, institutional, physical and socio-political injustice.

2.4 Phase 4: Evaluation

The work comes to an end by evaluating the case study, making it possible to start remedying the identified causes of injustice. While the analysis in Chapters 3 and 4 feed mostly into the translation process, the analysis in Chapter 5 provides an in-depth evaluation of injustices in the case study. Chapter 5 makes a multi-scalar and multi-criteria analysis of the case study. The analytical framework developed makes for an analysis where each dimension of justice is represented by multiple-indicators. These are: benefits and burdens for equity; recognition of people and logics for diversity; and decision-making and the appropriation/production of space for democracy. A complex interaction exists between the indicators. This results in the impossibility of predicting the exact effect of proposed actions. Yet the evaluation accentuates which indicators need to be strengthened in order to achieve a more balanced justice condition to the benefit of the less well off households.

2.5 Limitations and Challenges

Different challenges have come up during the research. A first challenge is that of language, as the research is written in English whilst all case study related documents and field research are in French or Kirundi. Many concepts do not have 100% correct translations and thus a complex level of interpretation was added to the research (see Bielsa, 2011). The researcher herself made French to English translations whilst the research assistant translated Kirundi to French.

The political situation in Burundi also formed a challenge as questions of safety kept coming up during the research period, especially during the 2016 presidential election. The political situation brought up different challenges in the conduction of field research. Field research in such a scenario can put the researcher in physical danger, or at least in fear of it. As stated by Daniel (1996) this engagement in the field may be difficult, particularly if the researcher feels that she is in danger. He argues that such fears lead to the taking of a certain amount of security measures, potentially distancing the data collection from the problem areas. However, being aware of this risk, specific attention was paid to include problem areas in the sampling process. In order to minimise the potential consequences of risky encounters three measures were taken. Firstly, the research permit and the contacts of the local sub-zone chiefs were carried at all times. Secondly, a local male research assistant accompanied the researcher. Finally, the researcher carried only the minimum required material along, including: phone; research permit; copy of identification documents; notebook and a minimal amount of cash money.

A large amount of taboos within the Burundian context was another obstacle to overcome. This includes things such as; ethnicity, politics, and perhaps above all - a direct reference to injustice. These taboos have certainly affected the findings, as many factors that might have an important effect on justice, remained unsaid during the interviews. The researcher was informed that the adherence of the research assistant, as well as his ethnicity, would have a substantial influence on the data collection. However, the scale of this potential bias remains unknown.

Due to the limited availability of recent documentation, older sources were used to fill the void. This points to the need for additional research in the future.

2.6 Positioning the Researcher

“There is no neutrality. There is only greater or lesser awareness of one’s biases.”

(Rose 1985, 77)

Researchers should be aware of the advantages and disadvantages that are created through their ‘researcher positionality’ (Sikes 2004, 17). As argued by Jackson (2013) “Consideration of the philosophical assumptions and researcher positionality is [...] crucial to methodological decision making in research” (Jackson 2013, 50). Through reflection on ones ‘position in the web of reality’ (Kincheloe and Berry 2004) the researcher can make the reader aware of the intrinsic biases built into the research design and methodology. As the work is written in Germany affiliated to a German University, by a young Belgian and Burundian woman, the researcher experienced both challenges and opportunities as a result of her positionality within the broader research context.

The author can be neither classified as an insider nor an outsider, but rather as a combination of both. As argued by Alzouebi (2016) the positionality of a researcher is often not one-dimensional. Rather, it is uncertain and in constant need of negotiation (Alzouebi 2016). On the one hand, being an insider enhances the depth of understanding that may not be accessible to a non-native scientist, yet questions about objectivity, reflexivity and authenticity are raised (Kanuha 2000). Having an extensive network of relationships to locals, a certain facility was met in setting up meetings for expert interviews, however, in many other dimensions the researcher’s positionality, as an outsider, was more prominent. This facilitated the identification of ‘surprising research findings’ as what is locally considered mundane and ordinary, can be seen as novelty.

Another aspect influencing positionality is the relationship between the research and the researcher’s political views. Researchers such as Gergen and Gergen (2003) have studied this relationship and argue that total separation of the research focus from the researcher’s political ideologies is impossible. Rather than considering the value-laden approach of this research as an unwanted side effect, the work considers it a starting point.

3 A POSTCOLONIAL TRANSLATION OF THE 'JUST CITY'

3.1 Literature Review: Postcolonial Urban Theory

While the notion of postcolonial has been used in varied ways in urban studies (see Brenda Yeoh's (2001) extensive list of examples). The current work builds on streams of postcolonial thinking that have originated in cultural and history studies (A. Scott and Storper 2015). Here, the postcolonial is considered a conceptual framework that enables a critical engagement with dominant Western-centred discourse, by challenging their assumptions (Crush 1994). Within urban studies, this translates into three major types of critiques. Firstly, critiques on the Western-centricity of how theory is created. Secondly, critiques on the universality of theories. Thirdly, critiques on the inappropriateness of theories to analyse non-Western case studies.

3.1.1 A Western Centric Geography of Knowledge Production

The first critique, related to how theories are created, supports that the confined geographical locatedness of data used in theory development, creates a Western centric geography of knowledge production (see authors such as AbdouMaliq Simone, Ananya Roy, Garth Myers, Jennifer Robinson). In order to reconfigure this geography of knowledge production, postcolonial scholars argue that non-western knowledge is needed to develop a more multi-faceted and contextualised understanding of the urban. This has resulted in many efforts to develop 'non-Western' contributions to global knowledge. However, much of this input has been marginalised (Robinson 2002). Often at times, these contributions have been tagged as cases of exception and have failed to come into dialogue with the dominant 'Western' body of knowledge.

Today, we recognise that most urban growth takes place in cities of the south, and that it has become the new epicentre of urbanism (Parnell and Oldfield 2014). This means that, "cities that are highly profiled in the canon of urban studies no longer reflect the hubs of urbanisation or the most critical contemporary global urban problems" (Parnell and Oldfield 2014, 2). We can no longer overlook cities where tribalism and informality are central to legitimate urban narratives (Parnell and Oldfield 2014; Pieterse and Parnell 2014). As stated by Edensor and Jayne (2012:3) there is a need to "de-colonise

imaginations of city-ness in order to break free of the categorising tendencies which dominate urban theory”.

Building on Mabin (2014), Vainer (2014) and Robinson (2013) the present work argues that there is a need to study cities that have not been contributing to the production of urban theories. By doing so, academics can help shift the geographies of knowledge production. One method of achieving this is through an ordinary city framing. ‘Ordinary cities’ is a term introduced by Amin and Graham (1997) and further developed by Jennifer Robinson (2006) as a tool through which cities can contribute to theory building within a neutral analytical field. Academics can take on a dialogical approach through which the internal and external workings and flows of urban spaces beyond that of global, mega, or worlding-city networks are revealed (Amin and Graham 1997). It highlights limitations of theories in varying contexts of time and space (Vainer 2014) in order to contribute to their refinement and validation.

As illustrated by Roy’s (2015) research on Calcutta, a single case study can be the basis of new theory. She argues that this has always been the case, but that “those cities never went by the name Calcutta or Cairo” (Roy 2015, 4). As argued by Scott and Storper (2015), Pieterse and Parnell (2010), Roy (2003) and others, the study of urbanisation in the global south provides unexpected insights about the logic and inner workings of urban agglomeration processes. Such insights are built on empirical evidence and intellectual formulations from realities of relatively under documented cities (Parnell and Oldfield 2014). The conceptual frameworks that come out of such research bring in different theories of the urban (Edensor and Jayne 2012). Examples of such conceptual frameworks include the concept of territorialised flexibility of the state (Roy 2003); waste as the ‘political other of capitalist “value” (Gidwani and Reddy, 2011); people as infrastructure (Simone 2004); infrastructure as a divination tool (Trovalla and Trovalla 2014); or the spatial logic of ethnocracy (Yiftachel 2009).

3.1.2 Assumed Universality of Urban Theories

The second main critique of postcolonial urban studies is the (un) spoken assumption of the universality of urban theories. According to Achille Mbembe (2001:9), theory legitimises itself by stressing its ability to construct what he refers to as “universal grammars”. This might explain why many urban theories are often characterised by

their disembodied voices and unmarked locations (Roy 2015). A number of postcolonial theorists have been able to disprove claims on the universality of urban theories (for examples see Robinson (2006, 2011), Roy (2009, 2011), Edensor and Jayne 2012; Myers 2014; Ong and Roy 2011; Patel 2014; Sheppard, Leitner, and Maringanti 2013, etc;).

The basic purpose of a theory is for it to be refined, rejected or validated through scientific research. Considering a theory to be universal therefore seems like an internal contradiction. Therefore, this work argues it is much more beneficial to acknowledge its locatedness and recognise its limitations. By tracing the biography of theories (Mufti 2005) they can be brought into dialogue with evidences from other locations (Vainer 2014). This in turn then enables a refinement, rejection or validation of the theory.

3.1.3 Inappropriate to Understand non-Western Case Studies

The third type of postcolonial critique focuses on the inability of theories to adapt to local realities of the 'South' (Pieterse 2011; Robinson 2002; Robinson and Roy 2015; Silva 2012). This makes it difficult to generate publications that have local traction and practical application (Parnell and Oldfield 2014). To counter this challenge the call has grown to develop what Ananya Roy (2014) calls theories of located urbanism. This has encouraged the growth of a body of southern knowledge that may one day, develop into a truly global body of theory (Patel 2014). However, others have identified this locatedness as limiting (Mabin 2014; Vainer 2014), or even as a 'territorial trap' as it does not allow for theories to travel (Robinson 2013).

This research argues that by understanding why theories are unable to explain realities of the south, it is possible to counter the causes. Based on the literature, it is possible to engage into dialogues with theories, and this can bring innovative insights to the global phenomenon of urbanisation. This can be done on two levels simultaneously. Firstly, through tackling the limited geography of knowledge production, where an ordinary-city framing can help bring a wider range of cities into the discussion (Robinson 2002). Secondly, through tackling assumed universality, where the locatedness of theory must be acknowledged (Mufti 2005), and surprising research evidences from another location (Vainer 2014) can contribute to the theory's adaptation, refinement or rejection. This

work argues that these same strategies can be used for the translation of a theory into a contextualised analytical framework.

3.2 Literature Review: Urban Justice Debates

A general consensus exists on the political and ethical nature of planning processes (Hendler 1995; Low 1991). Whether it is explicitly acknowledged or not, values influence a planners' judgement on what might be considered 'good' (Watson 2006). Urban justice debates discuss how planners can try to shape the ethical implications of their work. Despite existing controversy on what justice is, its value within urban planning and practice cannot be denied. It is a powerful term that carries political, ethical and mobilising power (Harvey 1973, 202, 398). The general understanding of justice is in one clear direction, towards more fairness (Fainstein 2010). Justice is not a call for utopia, but rather for changes in this world for the advantage of the disadvantaged (Fainstein 2010). Nevertheless, quite some divergence exists in its definition, understanding and interpretation.

French philosopher Henri Lefèbvre is one of the most influential thinkers within urban justice debates. His conception of the production of space has undoubtedly changed the way we understand how cities develop. He argues that space itself is both a complex social construct and a means of control (Lefebvre 1974). This accentuates that the spatial outcomes of planning processes affect justice. Additionally, the social dimensions linked to space also affect justice. He argues that there is an inherent link between the social and the physical, and that both social and spatial dimensions of justice must be considered when aiming to understand justice in the city. This works interpretation of this argument leads to an understanding of space as an outcome of institutional and social co-production, that stubbornly tries to shape society and in doing so, influences urban justice. The two main streams of discussions in urban justice debates focus either on how we, as planners, can make the planning process more just, with the conviction that this will lead to more spatial and consequently social justice. Or, on how we as planners, should look at the outcomes of planning processes and how they, under the influence of other factors, are affecting spatial and consequently social justice. Coproductive planning debates, which have build on debates of collaborative and

communicative planning, is a concrete example of planning theory that has come out of case-study research in the global south (Watson, 2014).

3.2.1 Communicative Theorists - Focus on the Process

The communicative theorists emphasise the importance of a fair and open planning processes. This deontological reasoning focuses attention on the rightness of decisions made and action taken (Campbell and Marshall 1999). According to Jürgen Habermas (1990), father of the communicative rationality, processes will lead to just outcomes if they are inclusive, empathic and open. John Forester (1989) among others drew inspiration from Habermas to pose communication as the most important element of planning practice. Here, the role of the planner is more that of a mediator rather than a technical expert driving the planning process. Communicative theorists build on Habermas' belief that inherently democratic human beings can reach a consensus and coordinate action through a process of communication. Thus different stakeholders can communicate ideas, debate differences in understanding and reach a consensus through processes of communication. The advantages of such communicative practices have been discussed extensively (see Healey 1992). It valorises local knowledge, shared understanding and mutual trust, which can create social and cultural capital, which in the long-term can lead to more 'bottom-up' processes of development (Healey 1992).

In order for communicative planning to work, the decision making process must be both inclusive to all stakeholders and power differences between participants must be neutralised (Habermas 1990). This requires the recognition of oppressed groups as well as the nature of their oppression. Factors that can influence such oppressions include: class, ethnicity, race, gender, age, etc; (MacLeod and McFarlane 2014). The feminist concept of intersectionality accentuates that different forms of oppression may affect a group or individual simultaneously (Fincher and Iveson 2011). Recognising the intersectionality of different forms of oppression onto an individual or group, is not a simple matter of affirming an identity or difference, but rather a matter of transforming how these differences are produced (Fincher and Iveson 2011). Influential in this line of thought is Iris Young's (1990:47) who argues that "Social justice [...] requires not the melting away of differences, but institutions that promote reproduction of, and respect for, group differences without oppression". By developing structures to bring out the

voices of affected publics more just outcomes can be created. Concepts that have gained traction in these debates include: transparency, negotiation, communication and democracy.

3.2.2 Just City Theorists - Focus on the Outcome

‘Just City’ theorists emphasise the importance of fair and equitable outcomes during and after the implementation. This teleological reasoning focuses on whether the outcomes of the actions in themselves are good or bad (Campbell and Marshall 1999). The main argument of ‘Just City’ theorists is that a fair process, as proposed by the communicative theorists, is utopic; as questions of power and oppression, rights and opportunities are always present and that even if a fair process could exist, it would not necessarily ensure a fair outcome (Campbell 2006; Fainstein 2010; Watson 2009b; O. Yiftachel 1998). Fainstein (2010) argues that despite a clear global trend of increased participation and decentralisation of authority, these have not been joined with an increase of equality.

‘Just City’ theorists have their portion of utopic thinkers as well. They attempt to envision what a just city would look like and how it would work. John Friedmann sees value in such thinking arguing that a “concrete imaginary of utopian thinking can propose steps that would bring us a little closer to a more just world” (Friedmann 2002, 104). Most prominent examples of utopic visions of cities based on notions of social justice and equality include: Ebenezer Howard with his concept of the Garden City (1898), Frank Lloyd Wright and Le Corbusier (Fishman 1977).

For both utopic and non-utopic ‘Just City’ thinking, active discussions exist on what constitutes justice in relation to the urban. As a result of the complex constellation of the urban, many authors have tried to illustrate justice as an intersection of different dimensions (such as Fincher and Iveson 2011; Moreau and Gardin 2010; Soja 2009). As authors pick and prioritise dimensions to their preferences, the concept comes to mean many different things that may sometimes contradict one another. This explains why the concept has historically been a topic of sustained debate. For this reason, it is important for ‘Just City’ thinkers to be clear about the dimensions of justice they are looking into, how these dimensions intertwine and how they are prioritised.

3.2.3 The Right to the City – the Citizens’ Role in Creating Justice

Beyond teleological and deontological reasoning to how planners can make cities more just. The ‘right to the city’ idea, introduced by Henri Lefèbvre in 1968, focuses on the role of people in making the city more just. The right to the city calls for citizens to take up their rights to participate at different levels of city making. First, by participating on the level of planning and decision-making as discussed by communicative theorists. Secondly, by participating on the level of appropriation and production of space (Fincher and Iveson 2011; Marcuse 2009; Purcell 2002). Through a Lefèbvreian understanding of space this would mean that through people’s production of space, they are ultimately participating in the production of their society.

Right to the city theorists argue that too often the right to the city is in the hands of a small number of political and economic elite who shape the city to their specific desires and that people have to fight for their fair share. This fight should go beyond a fight for fair resource distribution or access to affordable housing. It should include a fight for the right to participate in shaping the city and in having a say in how the city’s surplus should be spent (Harvey 2008).

“The right to the city [...] primarily rises up from the streets, out of the neighbourhoods, as a cry for help and sustenance by oppressed people in desperate times [...] To claim the right to the city in a sense [...] is to claim some kind of shaping power over the process of urbanisation, over the ways in which our cities are made and re-made, and to do so in a fundamental and radical way” (Harvey 2014, 4–5).

‘The right to the city’ has become a catch phrase that has led to an oversimplification of the term (Purcell 2002). While in 2008 Harvey describes it as a call for people to come on the streets and start revolutions, in 2014 he admits that it has become an empty signifier as anybody gets to fill it with any type of meaning (Harvey 2008, 2014). However, the strength of the phrase is that it has the mobilising power to make people speak up and ask for their rights. Fincher and Iveson (2011) identified that such situated struggles against injustice are often the source of more justice. This accentuates that justice and injustice are closely intertwined.

3.2.4 Selecting the Just City concept

Within urban justice debates, the main shared assumption is that there is value in taking an ethical normative framework to understanding urban processes. Through such a framework we can try to ensure that the most disadvantaged populations are not further excluded and oppressed. What makes Susan Fainstein's (2010) concept of the 'Just City' so interesting is that it presents a framework that encompasses the main urban justice debates. Firstly, it focuses on the theological reasoning brought forward by 'Just City' theorists by looking at the outcome and prioritising the dimension of equity in the analysis of justice. Secondly, the dimension of diversity focuses on inclusion, thereby supporting deontological reasoning as done by communicative theorists. Finally, the dimension of democracy considers the role of citizens in producing justice on the decision-making level. Through this multi-dimensional understanding of justice, the concept points to the complexities of justice, its multidimensional character and the tensions and the trade-offs that exist between its different components.

Dimension 1: Equity

Fainstein (2010) accentuates the importance distinguishing between equity and equality. Where equality calls for equal distribution, equity calls for appropriate and fair distribution, to the advantage of those most in need. In a broader sense, Fainstein considers equity "a distribution of both material and non-material benefits derived from public policy that does not favour those who are already better off at the beginning [...]. Furthermore, it does not require that each person be treated the same but rather that treatments be appropriate" (Fainstein 2010, 36).

Dimension 2: Diversity

Fainstein calls for the recognition of differences, pressing for the end of discrimination and the acknowledgement of social differentiation as based on multiple foundations, including race, ethnicity, gender, religion, and culture (Fainstein 2010). She supports authors such as Axel Honneth who call for a shift from simple recognition and fair distribution to social differentiation without exclusion (Fraser and Honneth 2003).

Fainstein appreciates the term diversity for passing reference to the physical environment, the social fabric and the social relations in cities. Whilst she recognises that the use of the term diversity is not without hurdles, she feels that it can be used as

an instrument through which excluded populations can get leverage for a drive for equity. One of the challenges of the term is that it often seems in contradiction to justice, as there are strong tensions between diversity and democracy in the sense that democracy might not lead to diversity. “Some amount of spatial segregation offers the best method of coping with clashing styles of behaviour, provided that sufficient space is allocated to each group. Spatial segregation is, however, at the cost of a wholly shared environment that forces people to deal with difference” (Fainstein 2010, 73). The difference between the ghetto and the enclave illustrates these tensions. “Ghettos are involuntary spatial concentrations of a particular population group, while enclaves are voluntary and promote economic, social, political, and cultural development” (Marcuse and Van Kempen 2002, 111). Marcuse (1997) shows that homogeneity on a micro-level can contribute to diversity on a metropolitan level and thus argues that urban neighbourhoods, characterised by a lack of diversity, may not be desirable depending on their contribution to equity and culture (Marcuse 1997).

Dimension 3: Democracy

“Participation in public decision making is part of the ideal of the just city, both because it is a worthy goal in itself and because benevolent authoritarianism is unlikely.” (Fainstein 2010, 30)

Fainstein’s dimension of democracy enables society to be seen as a whole, beyond just the poor, wealthy, excluded or marginalised. It calls for approaches that benefit the majority of the population. However, Fainstein argues that participation should not be valued in and of itself, but must be evaluated within a broader justice framework (Fainstein 2016). Fainstein’s interpretation of democracy focuses solely on the participation of citizens on the level of decision-making, linking part of the communicative ideas with rights to the city ideas. However, the notion of participating in the appropriation and production of space are missing.

Fainstein accentuated potential weaknesses of the concept of democracy, arguing that democracy is desirable, but not always (Fainstein 2016). She argues that despite the recent increase of institutionalised participation it has become clear that such structures do not necessarily make the outcomes more equitable (Fainstein 2010). Democracy can lead to parochism and corruption (Ibid). It often leads to the continued dominance of the already powerful (Ibid). “Democracy presents a set of thorny problems that have

never been theoretically resolved and can only be addressed within specific situations” (Fainstein 2010, 30).

3.3 Translating the ‘Just City’ – Identifying Novelty and Anomalies

Based on the assumed need for a normative ethical approach to planning, the present work enters urban justice debates through the translation of Susan Fainstein’s (2010) ‘Just City’ concept. A search of the literature reveals that only few studies have explored the concept from a post-colonial perspective. Patric McAuslan (2013) indicates that there is no writing or thinking about ‘the just city’ or ‘the right to the city’ in the African context. A major exception is Vanessa Watson (2002) who has published a paper questioning the usefulness of normative planning theories in sub-Saharan Africa. Watson (2002) argues that the normative concept of the ‘Just City’ provides useful direction for planners in sub-Saharan Africa. However, she states that modifications are required as it is “based on assumptions regarding civil society, identity, and possibilities of ‘bottom up’ development, which are unlikely to hold in the context of large parts of Africa” (Watson 2002, 43).

This section starts the translation process by identifying novelty and anomalies to the original concept. This is done through post-colonial critiques of the concept and popular justice thinking in urban debates.

The key points of critique selected for the following discussion have come out of both empirical findings from the case study and related academic debates. The discussion starts by a traditional post-colonial approach questioning the universality of the original debate. It then goes on to discuss how the development discourse has created structural forces that have been guiding the planning processes in cities of the Global South. It further introduces the discussions on informality within urban debates accentuating how they are underrepresented in many urban debates. The focus then goes to environmental dimensions of justice and how important this dimension is when analysing a case study such as this one. Finally, the section discusses the ‘need-driven’ nature of civil society in Africa, as well as the rural character of urban Africa, and how these affect traditional conceptualisations of justice. Selected examples of Fainstein’s recommendations are equally analysed to point to their specific limitations.

3.3.1 Assumed Universality

Fainstein's work is criticised by authors such as David Harvey and Cuz Potter (Harvey and Potter 2009) for making the assumption that a concept of justice can be universalised. Despite the model's shortcomings, Watson (2012) accentuates that the value of 'Just City' thinking and the general approach to urban planning it provides, is applicable and needed in the developing world. As Watson (2012) puts it "Fainstein's 'Just City' idea remains an ideal worth striving for". For this reason this work argues that, 'Just City' thinking and the use of a normative ethical tool to evaluate justice in cities around the world, can be of value across borders. However, the local understanding and value for justice and the relationship and composition of the different dimensions of justice must be contextually grounded. This accentuates the importance of empirical data collection and of reflecting on the concept's generalisation beyond its context of origin.

3.3.2 The Key Role of the Development Discourse

Robinson (2006) argues that the notion of 'development' is one of the main obstacles that cities beyond 'the West' are facing. "Development discourses have all too often positioned 'non-Western' cities as less 'modern' than those in North America and Europe. Lagging behind universal standards of development" (Edensor and Jayne 2012, 3). The existing separation between the fields of urban theory on the one hand, broadly focused on the West, and development studies on the other, focused on so called 'developing world', is a good example to illustrate how knowledge production and consumption is structured (Edensor and Jayne 2012). In order to close this gap, research has to be done that links the two together.

Broader structural forces in Africa's development cannot be marginalised as most African cities have been fundamentally influenced by structural adjustment policies and aid programmes. "Few aspects of African economy and society are left untouched by these policies and programmes, and it has been near impossible for local initiatives to work outside them" (Watson 2002, 45). The development discourse has given international institutions and rich countries the power, knowledge and legal authority to decide what is to be done in poor countries (Escobar 1997). As many countries have developed a dependency on such development aid, the development agenda of many

cities in these countries has been following imposed development trends. Many of these strategies share a common goal - economic growth. This has led to decisions to locate facilities such as infrastructures to be wrapped by considerations of their economic and strategic as opposed to their social impacts (Fainstein 2010, 2).

Despite their common goal, these ideals of development have often been unable to fulfil this goal (see Moyo 2009). Corruption is often blamed for the failures of development efforts. Fainstein (2010) postulates that it is one of the major ethical challenges of current development frameworks. Moyo (2009), for example, argues that “In these environments, contracts which should be awarded to those who can deliver on the best terms, in the best time are given to those whose principal aim is to divert as much as possible to their own pockets” (Moyo 2009, 50). This illustrates the differences between what aid is intended for, as opposed to what it is used for, in many of these aid dependent countries. It equally illustrates why such projects do not end up helping the less well off but rather seeming to advantage the local elite. Through un-transparent processes, investments materialise power struggles and prioritise profit over improving the quality of life for the less well off (Fainstein 2010, 2).

Dambisa Moyo (2009) gives an overview of how the development agenda has changed over the years, and how she believes it has led poor countries into downward spirals of poverty, corruption, violence, injustices and dependency. She presents that in the 1960s the focus of development was on the construction of large-scale industrial infrastructure. In the 1970s the focus shifted to tackling poverty. This meant redirecting development aid away from large infrastructure investment and towards projects in social services, education and food for the malnourished. As none of this aid came for free countries where indebting themselves, and so in the 1980s structural readjustments were introduced in order to try and manage the debts. With the growth of neo-liberal thinking in the 1980s (the Washington Consensus) the belief grew that, governments should liberalise their economies in favour of private sector participation, free-market policies and outward orientation (Ibid). Yet, by the end of the 1980s the debt of poor countries had grown to absurd levels, “leading to a net reverse flow from poor countries to rich countries to the tune of US\$ 15 billion every year between 1987 and 1989” (Moyo 2009, 22). Development discourse blamed these failures on a local lack of good governance and democracy, arguing that these development interventions could work if the local political conditions were right (Moyo 2009). However, Moyo argues this points

to the failure of development aid, as it has time and time again been unable to fulfil the promises it has made.

These reflections on the role of the development discourse, highlights the need to consider an international scale in an analysis of justice. International agencies come into the local context with both their own agendas and ideals. They play an important role in countries like Burundi where most infrastructure development and management is dependent on external funding. These processes generate power struggles and affect justice, illustrating why the international scale must be considered parallel to, and in relation to the city scale.

3.3.3 Informality as the New Status Quo

Many of the significant urban transformations of the new century are taking place in the developing world. In particular, informality, once associated with poor squatter settlements, is now seen as a generalised mode of metropolitan urbanisation. Planners must think about how to deal with what Roy (2011) refers to as the “unplannable”. Many urban theories have faced difficulties in managing or classifying informality. Supporting authors such as Ananya Roy (2005), the present paper reinforces the argument that informality is of primordial importance when considering justice in cities of the South. Informality is often identified as one of the main challenges that urban planning has to deal with in African cities (Silva 2012). Ananya Roy (2009) argues that a high degree of informalisation in an urban system creates ‘the territorial impossibility’ for justice. This paper does not support this claim, but rather argues that cities have an inherent ‘territorial impossibility’ for justice as they are but a physical representation of society itself. Informality can have both a positive and negative effect on justice, but before discussing this further, the work presents a few key insights of the large and vibrant informality discourse.

The informality discourse is expanding fast, and as new definitions of informality compete with old ones, a certain conceptual incoherence can be found in the literature. We find two main streams concerning informality, policy-oriented literature and critical literature (Ahlers et al. 2014). A key component of the policy-oriented literature is that it makes a clear difference and divide between the formal and the informal. The formal is defined as everything inside the regulatory influences of the state and the informal as

everything outside those influences (Ahlers et al. 2014). The problem when it comes to urban service is that the service modality is often taken as a basic unit of analysis (Ibid). So, an in-house or yard connection would be considered formal, while a water vendor would be considered informal. However, as argued by Ahlers et al. (2014:5) this “obscures the complexities of service provision processes”.

The critical literature acknowledges the need to focus on the political nature of processes and practices. Assaad (1996) argues that informality is not the property of actors or locality, but concerns social transactions and the institutions that shape these transactions. "Transactions are informal when they do not rely on standardised bureaucratic rules and procedures for their execution or enforcement, and are not legally recognised by the state" (Assaad 1996, 117). This would thus require a reflection on how a service modality was provided. This could mean that an in-house or yard connection in itself might not be informal, but the process through which it was acquired might be.

Within, across, and beyond these approaches to informality, different categorisations exist. The informal economy for example plays an important role, as it employs the majority of the urban labour force. The concept of the informal economy has proven to be of great use to policy makers, activists and researchers because of the reality it captures – the large share of economic units and workers that remain outside the regulated economic activities and formally protected employment relationships (Chen 2007). Originally, academics predicted the eventual demise of the informal economy as countries modernised and formalised, but recent debates have stepped away from that and are now calling for the need to support informal enterprises and improve informal jobs as key pathways to promoting growth and reducing poverty (Chen 2007).

The informal economy’s definition has thus broadened from a primarily policy-oriented approach considering the enterprises as the mode of analysis, to a more critical stance focusing also on the employment relationships. This highlights the complex relations between formality and informality. “While production or employment arrangements in the informal economy are often semi-legal or illegal, most informal workers and enterprises produce and/or distribute legal goods and services [...]. Also, many formal enterprises hire wage workers under informal employment relations” (Chen 2007, 2). Chen (2007) calls for the need to promote more equitable linkages between the formal and the informal. He highlights the need to “balance the relative costs and benefits of

working formally and informally” (Chen 2007, 10). According to the International Labour Organization, there is a strong correlation between operating in the informal economy, poverty, and the dependence on informal service provisions (International Labour Organization 2013). For this reason, understanding informality can contribute insights into the employment conditions of the poor as well as the socio-technical solutions and logics that they rely on.

In relation to the construction of cities, the idea of informal urbanism is recognised. The dilemma with this concept is that it has no clear delimitations and that there is no general consensus on what it covers. Informal urbanism can consist of both policy-oriented and critical understandings of informality, and ranges from squatter settlements to high-income constructions of villas or hotels. Some academics have also considered questions of construction, densification of buildings, non-respect of regulations (build up area, height, size of housing units, etc.) as informal urbanism.

A final category of importance is that of informal participation. This covers all the processes and actions through which citizens participate in urban development outside formal, legal, and regulated structures. Due to regularised structures for citizen participation, many particularities of social interactions find themselves between the white of legality and the black of illegality. Deal making and exchanging of favours or payments in non-monetary forms are popular ways in which citizens can articulate their right to the city. These are informal lobbying strategies used as ways through which citizens can participate in the urbanisation processes (Scott et al. 2016). Conventional wisdom states that corruption is harmful to income equality and justice (Dobson and Ramlogan-Dobson 2012). Corruption is often blamed for distorted prices and raised transaction costs (Dutta, Kar, and Roy 2011). However, a growing body of southern scholars is showing that a complex interaction of trade-offs exists between corruption and inequities (Ibid). They argue that Western scholars often fail to interpret differences between gifts, favours and bribes (Wei 1999). Or that they often have challenges understanding corruption as an “alternative means of interest articulation” (Scott et al. 2016, 1142). It is used as a tool through which groups can participate in the decision making process, especially during the phases of implementation and enforcement of legislation (Scott et al. 2016, 1142).

Just as groups can use informal processes to participate in the production of space, so can the State. Roy (2009) argues that informality is "at the very heart of the State and is

an integral part of the territorial practices of State power" (Roy 2009, 84). Through its regulatory power, the State may selectively formalise certain informal practices (Roy 2005). Through this, the State uses informality as a tool to delegitimise unwanted services, whilst legitimising others through which even the State itself can bypass the formal system (Roy 2009). Similarly, by allowing informal practices to influence the implementation and enforcement of legislation, the State enables alternative forms of citizen participation. This flexibility of governance frequently caters to particular social hierarchies (Ahlers et al. 2014). These processes have an important effect on justice and must be considered in the analysis of the case study.

3.3.4 The Environmental Dimension

Justice also has an environmental dimension. Disparate exposures to environmental pollution are a major contributor to health inequities (Brulle and Pellow 2006; Evans and Kantrowitz 2002). It is often the marginalised populations that live near hazardous facilities that bear a larger share of the health burden from pollution and toxic waste (Ibid). Debates on environmental justice seek to address both the underlying systematic causes of environmental inequities and the inequalities of outcomes both good and bad (Haughton 1999, 233). The main insight that comes from these debates is to focus on the just distribution of both benefits and burdens. This in turn, contributes a novelty to the dimension of equity of the 'Just City' framework.

3.3.5 The 'need-driven' Nature of Civil Society in Africa

The faith that normative theories show in the ability of civil society to promote democracy, a faith shared by mainstream development theory, fails to see the complexity of civil society in Africa. Civil society in Africa is seriously at odds with the ideal of an independent civil society that brings pressure to bear on governments to act more democratically and equitably (Watson 2002). As pointed out by Henrik Secher Marcussen (2002) there is a huge difference in the conceptualisation and development of civil society in relation to the state between the West and Africa. In the western world, the development of civil society occurred organically and in cooperation with government, while in Africa this has been an artificial and externally driven process that

has often seen the state as part of the problem leading to direct competition and conflict with the state (Watson 2002, 37).

Watson (2012) equally brought up the criticism that the ideal of democracy is based on assumptions on the nature of civil society, which she describes as highly dysfunctional in countries of sub-Saharan Africa. She argues this makes it extremely difficult for such “democratic” processes to occur, as such processes are based on the assumption that “Organs of civil society are sufficiently organised to be able to: recognise the need for planned interventions, commit themselves to an organised process of planning which is accepted as well by those who will ultimately be affected by action; engage in a process of consensus-seeking which is democratic and equitable; negotiate any processes or outcomes with formal structures of government; mobilise resources and capacities to carry forward decisions; and maintain involvement with processes of implementation” (Watson 2002, 43).

Bartlett (2000) correctly states that many cases of “multi-party democratic” political systems exist in Africa. This however, should not simply be equated to the establishment of either democracy or civil society. The state often represents just one of the many bodies of authority along with traditional chiefs, warlords and mafias (De Boek 1996, 93). This is interesting as legitimisation and laws are continually under transformation and in line with the relations between the groups in power. Participation is seen as something for the rich, as people fighting in a state of survival are “unlikely to be concerned with the place-bound and long-term issues that usually occupy planning. Populations in constant movement, in constant search of ever shifting opportunities, are not well positioned to commit themselves to lengthy processes of debate and engagement in localised planning initiatives” (Watson 2012a, 43).

Yet, insights from the field have pointed to the existence of instances of need-driven civil society efforts. Where based on a very specific identified need, a group of individuals relationally bound to that need, might come together to tackle the issue. However, these need-driven collaborations are fluid as changing conditions influence the composition and involvement of such efforts.

3.3.6 The Rural Nature of 'urban' Africa

Sub-Saharan Africa is the least urbanised region in the world. Much of its urban growth is due to internal migration from rural populations to the cities. Rural-urban linkages remain strong as people, money and things are in perpetual motion between the urban and the rural. As stated by De Boeck (1996), life in cities becomes increasingly precarious, rural resources assume greater importance and rural survival strategies penetrate the urban areas. From a Lefèbvrian approach to space the city can neither be interpreted as a Euclidian space nor as the sole responsible in the creation and maintenance of (in)justice. Through a relational understanding of space, what happens within the geographical boundaries of a city, cannot simply be detached from the relations and effects of actions happening outside the city boundaries (Jacobs, 2012). This equally supports the need for a multi-scalar approach when analysing justice in the city.

Despite being so densely populated, pre-colonial Burundi did not have any settlement that would fall under today's understanding of a city (Ndikumana and Nthakabiri 1981). Baeck (1956) proposes three factors that explain this total lack of urbanisation in this area. Firstly, settlements in the region have always been of rural typology. Baeck describes this typology as a logical adaptation to the high density and physical geography of the country. The only settlements were isolated to agricultural plots dispersed on the hills (Ibid). Such settlement typologies are referred to as Rugo (Ibid). Secondly, the lack of agricultural surplus created few opportunities for people to live from a non-agricultural activity (Ibid). The country lived in autarchy for centuries, without any noticeable trade. The absence of industrialisation left no incentive to aggregate the population into cities (Ibid). On a national scale the vast majority of Burundians still survive as small scale subsistence farmers (World Bank 2016). According to the 2015 CIA fact book, Burundi has an urbanisation rate of hardly 12.1%, making it one of the world's least urbanised countries. This rural heritage has left its mark on the country's cities today.



Figure 5: Pictures visualising the rural character of Bujumbura (Author's own)

3.3.7 Fainstein's List of Recommendations

Fainstein (2010) goes beyond theoretical justice thinking and develops specific action-oriented recommendations for cities within a contemporary system of global capitalism. A selection of the proposed recommendations is now discussed and contextual limitations are singled out.

Equity

Not everybody has equal rights to the city, and that is why planners and practitioners have to evaluate policy outcomes through a criterion of equity. As argued by Fainstein (2010:37) this “represents a particular concept of fairness in which policy aims at bettering the situation of those who, without state intervention, would suffer from relative deprivation”.

Among others Fainstein makes the following recommendations:

- “Planners should take an active role in deliberate settings in pressing for egalitarian solutions and blocking ones that are disproportionately benefitting the already well off.” (Fainstein, 2010, recommendation 7, p. 173)
- Affordable services should remain affordable (Fainstein, 2010, recommendation 2, p. 172)
- There should be no relocation, if there is, there should be adequate compensation regardless if they are tenants or owners. (Fainstein, 2010, recommendation 3, p. 172)

Some non-generalisable assumptions come to light. This includes that: planners do not always have the power to block certain solutions backed by power and funding; or that there might not be such a thing as affordable in areas where people live under the poverty line of 1 dollar a day; or yet that there might not be a clear understanding of ownership and what it entails.

Diversity

In relation to diversity, Fainstein emphasises that groups with clashing lifestyles cannot be forced to occupy the same location, but also that people cannot be differentiated and excluded according to a descriptive characteristic such as gender, ethnicity or homelessness. Among others she makes the following recommendations:

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- “Boundaries between districts should be porous.” (Fainstein, 2010, recommendation 3, p. 174)
 - “Public authorities should assist groups who have historically suffered from discrimination in achieving access to opportunity in housing, education and employment.” (Fainstein, 2010, recommendation 6, p. 174)
 - “Households should not be required to move for the purpose of obtaining diversity, but neither should new communities be built that further segregation.” (Fainstein, 2010, recommendation 1, p. 174)

These recommendations are formulated plainly, to make them easily ‘digestible’ for professionals and politicians. However, these simplifications could lead to incorrect interpretations. Diversity is indeed a difficult concept to work with. It is far from being politically neutral and partly goes against the human tendency of sticking with your own. Fainstein’s discussion on diversity was much more promising and comprehensive than some of the plain recommendations that have come out of it. The discussion on diversity made clear that homogeneity on certain scales does not have to be detrimental to justice as a whole.

Democracy

Fainstein (2010) agrees that one cannot force people to participate if they do not want to participate. Nevertheless, the interests of all groups should be fairly represented. She states that democracy is mainly instrumental in the goal for justice and that without it, those without power, will most probably not profit from the decisions made. This starts from the assumption that there is such a thing as a well functioning democratic system. This is, as argued by Watson (2012), far from the reality in cities of sub-Saharan Africa. Fainstein makes the following recommendations:

- “Groups that are not able to participate directly in decision-making processes should be represented by advocates.” (Fainstein, 2010, recommendation 1, p. 175)
- “Plans should be developed in consultation with target populations. [...] Citywide consideration must also apply.” (Fainstein, 2010, recommendation 2, p. 175)

The first recommendation seems to set aside the intersectionality of systems of oppression, it equally takes for granted that it is possible to identify these homogenous groups and that an advocate would be able to make a fair representation of a groups

priorities. This assumes that there are no internal power dynamics within such a group. It also assumes that everybody would agree on what is considered a group that should be represented. With the current high degree of mobility of citizens between the rural and the urban, the local and the global, many temporary citizens reside in the city, whose right to participate in the decision making process may not exist within the legal framework. The concept of democracy seems to bring more questions than answers. Yet, Fainstein defends its use even beyond the West as she states “despite the contention [...] that the concepts of democracy and rights comprise western values, the very active global human right movement and the rapid spread of democratic ideas throughout much of the non-western world indicates widespread acceptance of these values” (Fainstein 2010, 34).

3.3.8 Conclusion

The main aim of Susan Fainstein’s ‘Just City’ is to integrate abstract justice thinking and practical real world situations by providing a set of principles that planners can apply in their activities (Fainstein 2010). Fainstein does not claim to have figured out a way of developing ‘Just Cities’, but rather introduces a framework that encourages a continued local pressure for justice through which the system can incrementally become more just. As she illustrates with the case studies in her book, urban systems can be examined in relation to their local political regimes. As illustrated through the literature review and the discussion in this chapter, much of urban theory on justice has been developed in the West. This includes the concept of the ‘Just City’ that was developed based on the case studies of Amsterdam, New York and London. Interesting critiques and limitations of the concept have been discussed, but in order to move on to the second step of translation, the concept has to be contextualised and this means justice must be understood in the Burundian context, and that additional novelties and anomalies must be identified based on the workings of the case study.

3.4 Contextualising the Just City

Within the Burundian context, questions of justice have been central in the running of many grassroots movements, NGOs, civil and political efforts. This might be magnified as a result of the countries recent past of cyclical violence and crisis (1962, 1965, 1972,

1988, 1993, 2005). Considering a history of ethnic warfare, people are fast to read into decisions. They search for hidden political agendas that might, or might not be there. For this reason, extra efforts must be made in order for the people to believe that no ethnic or political group will unfairly benefit from decisions made.

3.4.1 A Constitutional and Legal Call for Justice

Article 7 of the Arusha agreement (Gouvernement of the Republique of Burundi 2000) presents the principles and measures relative to the exclusion of certain segments of the population. Like the constitution, it accentuates that all citizens have equal rights irrespective of their ethnic, political, regional or social standing within the Burundian society. It equally calls for the fight against injustices of all kinds. The agreement bans the existence of any group, political or other, that discriminates based on ethnic, religious, or political ideologies. In addition, section 4 specifies the need to promote marginalised groups, in particular the Batwa (minority ethnical group) in order to correct the imbalances that exist in all sectors. This is in line with concepts of justice, which requires that the disadvantaged are not further disadvantaged. Within the section on good governance, it is stated that justice for all has to be founded on the values of unity without exclusion. The Arusha agreement highlights that dimensions of equity and diversity as framed by the 'Just City' concept are considered national priorities. The authorities recognise that Burundi needs to consider justice in its development and governance objectives.

3.4.2 The Bashingantahe: Those Who Plant the Stick of Justice

The origin of the institution of bashingantahe – those who plant the stick of justice - dates back to the Burundian monarchy. As sages, bashingantahe played a vital role in the administration of justice. The bashingantahe (sing. mushingantahe) were entrusted with the task of settling disputes among families or individuals, from the lowest echelons of society all the way up to the royal court. Even though their functions were essentially judicial, they could wield considerable political influence. They were often selected on the basis of their personal merits regardless of their social background, and so formed the democratic core of Burundian society (Lemarchand 1970). Within the Burundian tradition a Mushingantahe is “a man responsible for the order, the calm, the

truth and peace in his area. And this, not based on an administrative power attributed to him but rather by his being, in part his individual and family life, that the community wanted to recognise to his person by investing him with this honour” (Ntabona 1999, 9–10).

They play the role of judge, advisor and mediator and constitute more a factor of cohesion within the country (Gouvernement of the Republique of Burundi 2000). As formulated by Deslaurier (2003) they have a moral purpose, a social function and a political mission essential at the heart of Burundian society. They are recognised as being inspired by values of equity and justice, and are considered as models of virtue for the population that selected them based on their humane qualities such as those of maturity, dignity, wisdom and modesty (Deslaurier 2003). They assure peace and order in the communities they are responsible to represent in front of the authorities (Deslaurier 2003). With the arrival of the colonial powers and the following one-party political system that reigned, the *bashingantahe* power has been reducing gradually (Ibid). However, despite the decreasing importance they played in formal systems, their role of importance as actors of moral authority continues in the eyes of the local population (Ibid). This realisation has since the 1980s started a process of ‘reinvention’ and ‘revalorisation’ of the *bashingantahe* into the official structures (Deslaurier 2003). In accordance with the 2000 Arusha Peace Agreement, several projects aimed at rehabilitating the traditional institution were initiated.

This rehabilitation has been led by a historical idealisation of the *bashingantahe* (Deslaurier 2003). This idealisation from both a local and an international perspective has been the cause of various challenges in the ‘reinvention’ process. There has been a lack of critical reflection of the traditional structures as well as a lack of understanding of the complexity of these structures. Three examples discussed by Deslaurier (2003) illustrate these challenges.

Firstly, the traditional *bashingantahe* were rural individuals who in the reinvention are being replaced by urban citizens. Originally, the *bashingantahe* worked on a local scale representing the rural community they represented in front of the authorities (Deslaurier 2003). Ideally they were able to resolve all conflicts within their area of intervention (Ibid). Now, the *bashingantahe* have faced national, provincial and communal extensions. They are often urban citizens far from the rural villages that they

are meant to represent (Deslaurier 2003). This reduces the diversity of these individuals and lessens the voices of the urban poor.

Secondly, the traditional *bashingantahe* were selected by the community they represented, while the new *bashingantahe* are elected through a more top-down logic imposing them to the local communities (Deslaurier 2003). A large percentage of these new *bashingantahe* are educated male Tutsis (Ibid). This illustrates the lack of diversity in this structure and the risk it presents of selective representation of the public through these individuals.

Finally, in the past the *bashingantahe* were independent from the authorities and a large part of the authority and the respect that they received came because of their autonomy in the face of power (Deslaurier 2003). Many examples can be found of when they opposed the authorities if the verdict was not in their favour (Ibid). This is very different from the new *bashingantahe*, many of who are politicians, ministers, people from the church and so on (Deslaurier 2003). As a result, rather than redistributing decision-making power, this structure is reinforcing the existing power structures.

Despite these challenges the very positive mental representation that exists around this system plays an important role in the local conceptualisation of justice. Deslaurier (2003) thus calls for the need to stop the delegitimisation of the system and to take into account questions of legitimisation and representativeness that are currently sources of conflict within the reinvention process of this traditional structure. By improving these issues it can then be possible to rely on the structure of the *bashingantahe* to enable the people to participate in the decision making process. Beyond these formalised structures for participation, citizens are additionally involved in the appropriation and the production of space. A concept with local traction, that can be used as a conceptual framework through which to interpret these efforts, is the concept of System-D.

3.4.3 Introduction to the Concept of System-D

System-D is a coping mechanism, an ability to get out of a mess even when the contextual conditions might not be perfect. Within service provision, people rely on system-D from the moment they cannot merely be passive receivers of a service provided to them. When people have to rely on their own engagement in the planning,

management and execution of service delivery, they are engaging in what is locally referred to as system-D.

The term system-D has its origins in a French military context of the mid-nineteenth century (Murphy 2015). It was considered essential to thrive within challenging situations, such as conflict, and seen as source of ‘out of the box’ solutions that could be achieved with limited resources. In more recent francophone debates, it has come to be seen as a powerful interdisciplinary concept helping to better understand how much of the world works (Murphy 2015). This vision is equally supported by Neuwirth (2011), who introduced the concept into Anglophone debates and describes it as “how much of the world survives, and how many people thrive, yet it is ignored and sometimes disparaged by most economists, business leaders and politicians” (Neuwirth 2011, 43). System-D fits in the socio-spatial context of this research, as it is part of the everyday reality of many, if not all, of Bujumbura’s residents. Neuwirth (2011) stresses that the concept itself - how it is called, how it is framed - is very context dependent. He states that the concept has been sculpted by former French colonies to fit their own social and economic reality.

The current work argues that through the use of the concept system-D as a lens of understanding of the observed realities, the differentiation between legality and illegality makes no more sense. This enables a focus on all processes whether formal, informal, or both. Neuwirth (2011) calls system-D a product of intelligence, resilience, and group solidarity, and further states that it follows a number of well worn, though unwritten rules, through which he argues it is in that sense a system.

The ‘D’ in system-D stands for ‘débrouillardise’ which based on a Dictionary definition (Larousse 2016) refers to:

- Finding whatever way possible to arrange something
- Sorting things out with your own means
- Being content with what you have
- Arranging something with someone
- Being able to cope - to be okay

As can be seen from the broad scope and variety of what the concept covers, it is clear that the simplified, official translation into English of the word ‘resourcefulness’ does not encompass the entirety of the term’s meanings. The term refers to a manner of

responding to challenges through adaptation and improvisation to ensure that what needs to be done is done. The advantages of the term in comparison to other similar terms is that it covers both the formal and informal practices and brings insights into power relations and cultural habits on a micro-scale. System-D is a system in which all stakeholders are responsible to figure out whatever way possible, to provide a needed service through whichever available means. Often system-D can be executed by a single individual but often it requires discussion, deal-making, exchange, favours and other forms of collective effort.

While both the concepts of the right to the city and System-D describe how people can participate in both the level of decision-making and the level of appropriation and production of space. These terms differ majorly in their approach to these processes. While they may rely on the same strategies, the right to the city makes a call for change, to stand up and to start a revolution. In contrast system-D asks that you accept your lot, and try making the best with what you have. System-D thus does not have the transformative potential that can be found in right to the city thinking. This might explain why the concept of system-D is attractive for authorities that wish to keep the status quo. In both the case of current day Burundi and Mobutu Congo the idea of system-D can be found institutionalised and tactically approved by the authorities in one form or another. In neighbouring Democratic Republic of Congo the concept is coined as Article 15. According to Congolese popular imagination Article 15: fend for yourselves, “was added to the fourteen real articles of the constitution, and represents the essence of thirty-two years of Mobutu dictatorship” (Vlassenroot and Raemakers, 2004). It can be considered an implicit social pact between the state and its citizens (Vlassenroot and Raemakers, 2004:170). A clear influence on the Burundian sculpting and understanding of system-D has come from the frequent references to Congo’s famous Article 15.

3.5 The Just City - Translated

To finalise the translation of the ‘Just City’ (2010) concept, for each dimension (Equity, Diversity and Democracy) measurable, contextual and relevant indicators are identified. In addition, the scale of the framework is adapted. While the original concept presents a tool for analysis solely on the city scale, the debates on the development discourse, informality, the *bashingantahe*, and system-D, all highlighted that processes on other

scales of governance undeniably affect justice in urban systems. For this reason, the translation proposes a multi-scalar framework for analysis.

When it comes the dimension of equity, the translation concludes that the focus should not only focus on who benefits, but also consider who suffers the consequences and to what extent. These insights have been highlighted by the environmental justice debates. This equally affected the selection of the case study, where analysing justice with regards to water supply alone might blind the work to the negative consequences that can result of a lack of managing the disposal of that supplied water.

In relation to diversity, the translation proposes the concept be interpreted in a broader sense. It can go beyond considering the diversity of 'groups' of people (gender, ethnicity, race, socio-economic class, etc.) but also in relation to diversity of logics of organisation. Diversity should recognise and be inclusive of different processes and strategies. This is where considering informality becomes important. Informal structures often develop as a result of existing needs for services, opportunities and flexibilities that are otherwise not available. This work argues that informal organising logics have to be recognised if the citizens rights to the city are to be respected. Indicators for diversity should include the diversity of people and their logics. This enables people with diverse lifestyles and needs to find ways to appropriate - and be appropriated by - the system. Thus, diversity should be measured on two axis - one in relation to the recognition and inclusion of people (through the concept of intersectionality); and the other in relation to the recognition and inclusion of logics. These provide people with the choice, alternatives and the possibilities that they might otherwise lack.

Finally, the dimension of democracy is measured based on the understandings of citizen participation such as the right to the city and system-D. The dimension of democracy is thus divided into two levels, the level of decision-making (across the formal-informal divide), as well as on the level of appropriation and production of space. This is a concept of democracy detached from traditional democratic theory and popular understandings of democracy.

The translation thus provides a tool of analysis through which the case study can be ethically evaluated. The analytical framework that has come out of this translation can be seen hereunder (Table 1). The bold cells show the dimensions of analysis that existed in the original concept. The additional cells are novelties that have been added through

the translation process. This illustrates that a more differentiated and multi-scalar understanding of justice is proposed, as compared to the original concept.

		Local	City	National	International
Equity	Benefits				
	Burdens				
Diversity	Of people				
	Of logics				
Democracy	Decision making				
	Appropriation and production of space				

Table 1: Analytical Framework for Case Study Analysis (Author's own)

4 HOUSEHOLD WATER ACCESS AND DISPOSAL IN BUJUMBURA

This chapter explores the key processes and actors that are involved in household water access and disposal in the city of Bujumbura. It consists of four sections aiming to understand: the historical context, the socio-political context, the governance structures and the main challenges the case study is facing. According to David Nilsson (2006, 2011) understanding the challenges socio-technical systems are facing, requires looking into the past. Systems put in place in colonial times have long-lasting effects on societies today. He particularly stresses the significance of this time element regarding large-scale infrastructure (Nilsson 2011). Problems in the water and sanitation systems today and the general inability to cater for the most vulnerable in society are said to have their roots in the way large scale infrastructure has developed in the past (Nilsson 2006). This chapter therefore, commences with an introduction to the city's historical context.

4.1 The Historical Development of Bujumbura

Literature generally states that prior to the arrival of the colonial powers, the area where Bujumbura is now situated was uninhabited. Located at the shore of Lake Tanganyika, it was said to be an inhospitable area invested with malaria. However, in his historical analysis on the origin of the city Sylvestre Ndayirukiye (2002), identified a Muslim settlement here since 1844. Here the Zanzibari, under the rule of Saïd Ben Habib, they were involved in slave and other trade (Ibid). By 1878, English missionaries started to settle in the region, then referred to as Buzige (Ndayirukiye 2002). The exploration of the Tanganyika Lake and the quest of the Nile's source brought explorers to the region, such as Burton and Speke in 1858, Stanley and Livingstone in 1871 and 1876 respectively, and Oscar Baumann in 1892 (Ibid). Co-habitation between missionaries, explorers, traders and local populations was not always easy (Ndayirukiye 2002). Tensions escalated in 1880 when the indigenous populations killed catholic missionaries (Ndayirukiye 2002). However, this is often left out of the narratives of the city's past that mostly starts with the official creation of Bujumbura by the German coloniser under the name of Usumbura in 1897 (Ndikumana and Nthakabiri 1981:5).

4.1.1.1 The City's Origins and German Rule (1897–1916)

At the Berlin Conference (November 1884 to February 1885) Ruanda-Urundi and Tanganyika, current day Tanzania, were assigned to Germany as colonial land. This land was known under the name German East Africa (Deutsch-Ost-Afrika). In 1897, the first colonial military post was created in Kajaga (Ndikumana and Nthakabiri 1981), North-West of Bujumbura's current location. This military post served to insure order and control at the border with the Belgian colony, Congo (Ibid). However, the location was far from ideal as it was on low-lying land that was prone to flooding and hard to defend (Ibid). The settlement also faced difficulties with regards to sanitation and the strong presence of malaria. For these reasons, it was abandoned in 1899 and Usumbura was created (Ibid). Usumbura was on a slightly higher altitude, better placed for both military and sanitary reasons. As argued by Ndayirukiye (2002) a large future extension of the city was not considered. Hence as the city started to grow, it became clear that its geographical location caused a number of challenges. The topology limited the expansion of the city as it was bordered to the West by the lake and to the East by the steep slopes of the East African Rift (Ndayirukiye 2002).

Bujumbura started off as a military base surrounded by administrative and military quarters reserved for whites (Ndikumana and Nthakabiri 1981). Between 1897 and 1914, Bujumbura attracted Europeans, Asians (mostly Indians, Pakistani and Arabs) and Africans (mostly Swahili³ and Askari⁴ - but no autochthonous Burundians) (Kagabo 2002; Ndayirukiye 2002). There was a strict racial divide (Ndikumana and Nthakabiri 1981). The African neighbourhood created to quench the need for labour force in the city, was separated from the other areas by a green space and public buildings (Ndikumana and Nthakabiri 1981). This sanitary separation between the colonial white core and the rest of the city, often referred to as a "cordon sanitaire", was a popular urban planning logic in colonies across the globe (Curtin 1985). Their role was "to restrict contamination of the former [white] areas by African disease" (Swanson 1977, pp. 387–389). Despite being considered 'natives', most Africans in Bujumbura at that

³ Bantu that share a common culture (Uswahili), language (Kiswahili), and religion (Islam)

⁴ A local (in this case East-African) soldier serving in the armies of the European colonial powers

time were Swahili from nearby Ujiji (Tanzania) because the Germans considered them to be better labourers than the Burundians (Ndikumana and Nthakabiri 1981). Today, this area is still referred to as the “Swahili quarter”. It has a high degree of Swahili speakers and an important Muslim population. A similar chronicle applies to the Asians. When they first arrived in the city in 1908, they were not allowed to settle within the exclusively white areas (Ndikumana and Nthakabiri 1981). They therefore settled to the West of the military post, between the lake and the city (Ndikumana and Nthakabiri 1981). This area too has kept its name, “Asian quarter”, as well as its role as a business and commercial hub of the city. The “cordon sanitaire”, however, is no more than the city filled the space in periods of densification and growth.

The inherited racial division in the urban fabric is equally transcribed in the infrastructure provision. The Misumba River, up in the mountains at an altitude of 1600 m, is the city’s oldest water source (Nzeyimana and Manangirakamaro 2003). It was exploited by the Germans for the exclusive service of the white residential areas and the urban centre (Ntibakivayo 1983). It was a gravitational system, with a production capacity of 700 m³/day (Ruzima, Nintunze, and Nyamuhwata 2012). This infrastructure still exists and continues to provision majorly high-income residential neighbourhoods as well as the city centre. The advantage for households connected to this Misumba line is that it is fully gravitational, independent from pumps and the difficult situation of erratic electricity provision.

By 1912 the Germans decided to move the capital to Gitega, in the centre of the country, where both the climate and the geography were better (Ndayirukiye 2002). However, the German rule did not last long enough for this idea to become a reality.

4.1.2 The Belgian Period (1916–1962)

From 1916 onwards Burundi found itself under Belgian rule. After the First World War the city really started to grow (Ndikumana and Nthakabiri 1981). Despite this growth, the urbanisation rate stayed low as the colonial powers imposed all kinds of barriers to restrain people from moving towards the centres (Bideri 2008). The Belgians followed rules of racial segregation even more strictly than those implemented by the Germans before them. The city was developing according to a functional dichotomous morphology in accordance to the wishes of the colonial powers (Ndikumana and

Nthakabiri 1981). This morphology is very characteristic for colonial African cities, with a clear divide between the 'white' and the 'native' areas. 'Native areas' were considered equivalent to virgin land, free for development of any kind. As a result, Africans had to move a lot, depending on the needs and fantasies of the colonial elite (Ndikumana and Nthakabiri 1981).

After the second world war, Bujumbura became the economic hub for the entire Great Lakes region (Ruanda, Urundi, and Kivu) (Ndikumana and Nthakabiri 1981). A 10 year economic and social development plan was created for the period 1950-1960, in which Bujumbura was selected as a commercial and industrial centre with the aim of creating industrial growth in the entire region (Bideri 2008). Until 1960, Burundi, Ruanda and the Kivu were linked through a military, economic and border union of which Bujumbura was the political and economic capital (Ndikumana and Nthakabiri 1981). The Belgians imported Congolese labourers to the city. Similar to the German preference of the Swahili's, the Belgians considered the Congolese a superior labour force to the Burundians (Ndikumana and Nthakabiri 1981). As a result Bujumbura has always been an extremely diverse city, with an influx of different European, Asian and African migrants.

The first African quarters in the city inhabited by Burundians were those of Kabondo and Bwiza (Ndikumana and Nthakabiri 1981). Constructed informally, they were legalised in 1941. By 1951, the African settlements became saturated because of the growing influx of migrants (Ibid). This led to the growth of spontaneous settlements on the city's outskirts such as Ngagara, Kamenge and Kinama (Ibid). The term spontaneous is important here, as this is the official term used to refer to such urbanisation practices in this context. These are settlements built through fend-for-yourself urbanisation processes. These settlements include an element of surprise; they come up unexpectedly through self-initiation of the population. The term makes no allusion to the legality of the structure nor to the status of land-ownership, and so cannot simply be equated to 'informal' settlements.

Part of the expansion was planned, such as the 2,500 houses, schools and social structures build in Ngagara as part of a global programme for construction of housing for the working class in the cities of Belgian Congo and Ruanda-Urundi, while others were unplanned (Ibid). Ngagara is an interesting case as it was originally constructed as the ideal urban African village (Kagabo 2002). It is nicknamed the 'garden town' and

was the first settlement for the African population that was carefully planned, implemented and provided with all basic services such as storm water drainage, sewerage, water supply, etc. (Kagabo 2002). Most native areas did not enjoy similar planning and were simply given a rectangular plan with small sized plots that lacked greenery, examples include Kamenge and Kinama (Ndikumana and Nthakabiri 1981). These quarters did not get street names but rather numbers from 1 to n (Kagabo 2002). Meanwhile, European neighbourhoods also grew spontaneously. Whites were left free to build as they pleased. That sometimes meant building roofs with snow slopes, which seems rather irrational seeing the local climate (Kagabo 2002). There was no regulation on plot sizes (Kagabo 2002). This enabled, for example, the trend of private botanical gardens for which large amounts of varied plants were imported from all over the world (Kagabo 2002).

The Belgians invested a lot into both water and sanitation infrastructure and built what has now become the core of the city's centralised infrastructure network. They extended the water provision network with the Ntakangwa River (Figure 6). Despite its production capacity of 6,200 m³/day, nearly ten times more than the existing Misumba source, rationing of the resource was required (Ruzima, Nintunze, and Nyamuhwata 2012). This meant that certain areas were supplied only at specific hours of the day (Ibid). Until today this has remained the case.



Figure 6: Ntakangwa Water Treatment Plant (Author's own, 2017)

The water supply infrastructure has never been able to provide universal service coverage in the city. Thus, the city has always had a certain disparity with regards to which areas undergo rationing and how it should be organised. In relation to sewerage, a first big investment was made under Belgian rule (Interview 7, 2015). The initial construction of the sewerage infrastructure covered the high-end residential neighbourhoods of Mutanga South, a part of Rohero I, as well as the planned African garden town of Ngagara (Ruzima et al. 2012). The entire sewerage network at that time measured approximately 30 km (Ibid).

4.1.3 Post-Independence (1962)

After Independence on July 1st 1962, urban growth accelerated even more, as the colonisers' "cordons sanitaires" disappeared with them (Ndikumana and Nthakabiri 1981). It was the start of what is referred to as the period of Burundisation (Bideri 2008). After the ordinance of the Ministry on the 6th January 1972, with the new housing policies of the government, Burundians could now live anywhere in the city (Ndikumana and Nthakabiri 1981). Soon the empty plots within the city boundaries were filled (Ndayirukiye 2002). These differentiated periods of urban growth can be seen in the following map of Bujumbura (Figure 7). By 1990 the area within the city limits was crammed.

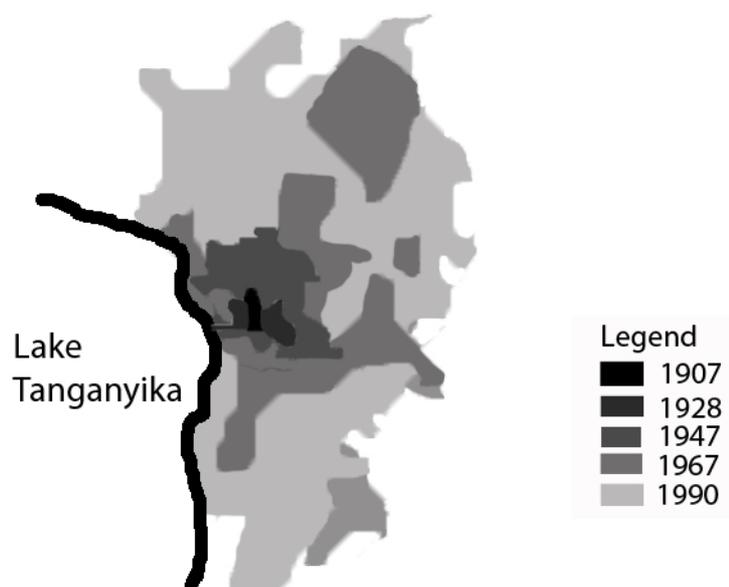


Figure 7: Map of the Historical Urban Growth in Bujumbura
(Author's own)

The National Bureau for Housing (Office National du Logement - ONL), collaborated with many actors in view to supply the population with adequate housing (Ndikumana and Nthakabiri 1981). However, despite respecting the local norms concerning infrastructure expansion, many problems came to light (Ndayirukiye 2002). A major issue was that the city was conquering the fertile lands in the plains (Ibid). This not only took away fertile farmland that was previously feeding the city, but also caused challenges to the constructions due to regular flooding on the plains. Additionally, many neighbourhoods found themselves overpopulated with densities as high as 400 inhabitants per hectare, causing many environmental and sanitary problems (Ndayirukiye 2002). Examples include: Kamenge, Cibitoke, Kinama, Nyakabiga, Buyenzi and Bwiza. To-date, this remains a challenge for the ONL that is finding it difficult to keep up with the city's urbanisation challenges.

Since independence, large investments have been made to provide citizens with the required urban services. Hakizimana & Nimpagaritse (2009) argue that the legal texts in place to guide the water sector have an inherited colonial logic. In it, water is considered an overabundant resource that can be used without limitations (Ibid). This legislation finds its roots in the decree of May 6th 1954. Its content is transposed in article 19 of the old civil code of Burundi (Ibid). It stated that water belongs to no-one and that the right to use it is common to all (Ibid). This means that water sources were not susceptible to appropriation and that they were considered a common good just like light and air. The legal text did, however, give the right to the state to make necessary concessions but without giving them the ownership of the resource (Ibid).

In 1969, a pumping station was created at the Tanganyika Lake, which became the most important water source for the city. The station originally captured water 1.5 km into the lake at a depth of 29 m (Nzeyimana and Manangirakamaro 2003). However, as a result of pollution and in order to reach water of adequate raw quality, infrastructure extensions had to be made in order to capture water at 3.5 km into the lake (Nzeyimana and Manangirakamaro 2003, 103). This misadventure highlighted the effect pollution has on the water supply system.

Authorities came to understand that water is in fact a limited resource that was being threatened and that needed protection (Hakizimana and Nimpagaritse 2009). This led to a change in the Burundian legislation which stopped seeing water as a common good and started considering it as a good that can be owned and which the state has to

protect at all costs (Ibid). This happened through the decree-law n°1/008 of September 1st 1989, which put water under the public ownership of the state (Ibid). This was followed by the need to organise a more sustainable use of the resource without providing information as to how this should be done (Ibid).

In 1999-2000, sewerage infrastructure was extended to the neighbourhoods of Nyakabiga and Bwiza (Ruzima et al. 2012). These works were financed by the African Development Bank and the Government of Burundi (Ibid). In 2008, a third large investment was made into the city's sewerage infrastructure in order to extend it to the quasi entire area of Ngagara with 88.7 km of primary, secondary and tertiary sewers (Ruzima et al. 2012). According to an interview with a Professor of Human Geography at the University of Bujumbura (Interview 5, 2015), the capacity for this infrastructure has long been exceeded, yet no new extensions have been made since.

According to Liboire Kagabo (2002), Bujumbura develops purely on opportunities of the moment. He argues that it lacks a broader planning vision. He additionally argues that local planners fail to critically reflect on the inherited logics of its colonial past. This has put the city in a paradoxical situation. The government's actions are haphazard and based on immediate needs and available means. This can be interpreted as the reliance of planners on system-D. They do what they can to find a solution to the problem with the resources at hand. This reinsertion of old approaches can be interpreted as an unreflective use of available resources. Liboire Kagabo (2002), calls for the need for local planners to become conscious of the consequences such unreflective problem solving creates. Planners have to start considering the temporality of solutions as well as the principals underpinning them. In the case of water and sewerage infrastructures in Bujumbura, the rural traditions to accessing these services may not be compatible with the centralised infrastructure system that was built for the whites in a context of racial segregation.

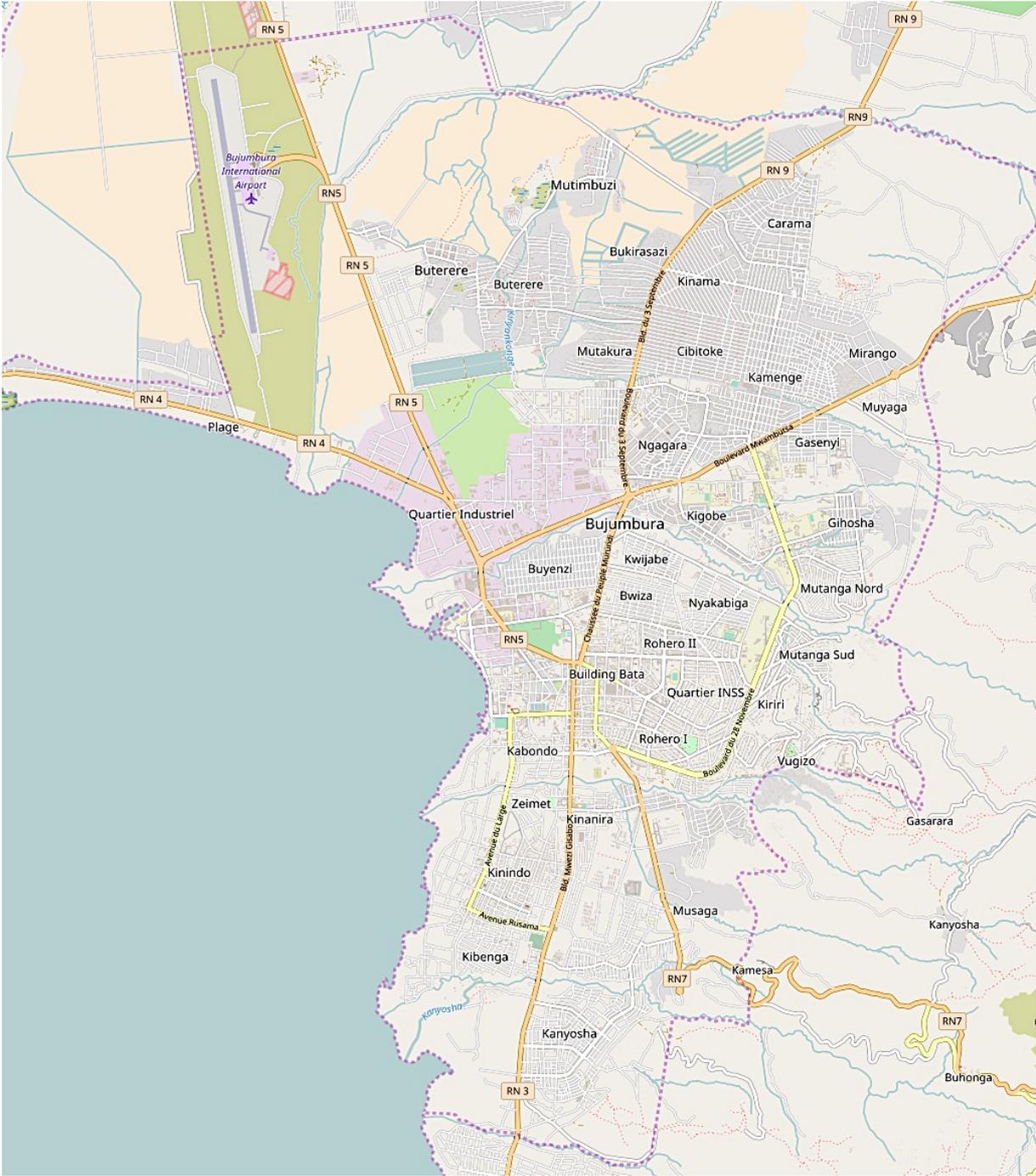


Figure 8: Map of Bujumbura (Open Street Map, 2017)

4.2 A Socio-Political Context of Cyclical Violence

On top of the city's colonial past and geographical location, its most recent socio-political context has a decisive effect on urban justice in the city. As emphasised by Sylvestre Ndayirukiye (2002) it is difficult, if not impossible, to understand the city's development if we do not take into consideration the crisis that Burundi has faced since 1993. In 1993 the assassination of the first democratically elected president of Burundi, Melchior Ndadaye, initiated a political crisis that led to the death of 50,000 Burundians (Murison 2004). The protracted crisis has greatly affected the urban fabric.

In 1994, an ethnical segregation of the city's neighbourhoods began (Ndayirukiye 2002). Kamenge (a majority Hutu neighbourhood), started what they refer to as the "neighbourhood wars" (Ibid). The objective of this war was to purify the neighbourhood of Tutsi inhabitants in order to have a base from which to lead guerrilla warfare into the different neighbourhoods of the city (Ibid). In reaction to this, neighbourhoods such as Musaga and Nyakabiga more to the centre of the city, started chasing away their Hutu inhabitants (Ibid). The latter then settled in a village to the West of the city called Gatumba, which quickly grew into a Hutu refugee agglomeration with more than 10,000 inhabitants (Ibid). Ndayirukiye argues that these processes led to the ethnical differentiation of neighbourhoods and that by 1995, there was a clear distinction between Hutu neighbourhoods and Tutsi neighbourhoods in the city. Only few exceptions escaped this segregation, such as the Islamic neighbourhood of Buyenzi and the high-income neighbourhood of Rohero (Ibid).

The crisis also affected the city's infrastructure. With the disappearance of the second Hutu president, Cyprien Ntaryamira on April 6th 1994, the situation worsened as urban violence was increasing with grenades exploding in public spaces and rockets being fired from the hills (Ndayirukiye 2002). This damaged a large part of the infrastructure and led to inadequate service provisions, reduced production rates, and as a result, increased unemployment and poverty (Ibid). International aid agencies, on which the Burundian economy heavily depended, started to leave the country deepening the economic crisis (Ibid). The situation further worsened when the international community imposed economic sanctions on the country (Ibid). The city was cut off from imported resources, such as medicines, fuel, spare parts for cars, trucks and industrial machines (Ibid).

After 1997, Bujumbura experienced important growth because of its relative security in relation to the countryside (Ndayirukiye 2002). The insuffisance of resources for absorbing the internally displaced caused much stress. Problems included, the over densification of neighbourhoods, precarious housing conditions, a lack of general sanitation, a lack of public transportation and a lack of education and employment for a growing youthful population (Ndayirukiye, 2002). Ndayirukiye states that these challenges cannot be solved without the reinvention of urban politics. He calls for the development of urban decision-making processes in which all concerned actors must play an active role. This is in line with the aim of the current research pointing to the key role of participation (democracy) of diverse actors (diversity). Ndayirukiye argues for the need for a communicative approach to planning processes and decision-making.

According to UNICEF (2016), President Pierre Nkurunziza's 2015 decision to run for a controversial third term in office plunged Burundi into its deepest political crisis since the end of the civil war. As a result, different humanitarian situations have emerged and close to 200,000 Burundians have sought asylum in neighbouring countries (UNICEF 2016). Similarly to the case of previous crises, this political turmoil initiated a financial crisis that led to increased unemployment and widespread poverty. On May 1st 2016, the Mail and Guardian Africa newspaper stated that Burundi had become the world poorest nation (Mail and Guardian Africa 2016). This has undoubtedly had a profound effect on Bujumbura's social fabric.

The country requires efforts from numerous fronts if it wishes to restitch social cohesion between its people. There has been an upsurge of social movements, solidarity initiatives and religious institutions that have taken up the challenge (Ndayirukiye 2002). The country has to construct and re-construct its cities, infrastructures and societies simultaneously. On the one hand, the damaged infrastructures have to be replaced, and on the other hand urban growth has to be managed.

Returnees that had escaped the violence are now flowing into the city and are creating spontaneous settlements at the city's periphery. Ndayirukiye (2002) stresses the dangers of the non-management of such forms of urbanisation. He argues that "this is leading to the multiplications of ghettos, urban farms and anarchist constructions" (Ndayirukiye 2002). These disorganised spatial extensions are physical reflections of the city's social disparities and are areas where the access and disposal of water are inadequate, lacking, or have simply become overly complex matters.

4.3 A Multi-Scalar Governance Assessment of Water Access and Wastewater Disposal in Bujumbura

In order to understand the dynamics and the relations of power at play in a complex socio-technical system, there is a necessity to assess the governance structures both within and beyond the legal framework. Inspired from Bressers et al.'s (2003) governance assessment tool, this section aims to give an overview of the complex relationships and interconnections that exist between the different actors and processes. Based on the developed analytical framework, this is done by looking into them on different scales and focusing on how they affect justice in the case study. The following section thus makes a governance assessment of the case study on the following scales: the international scale, the national scale, the city scale and the local scale.

4.3.1 The International Scale

Both water access and disposal are considered within the Burundian conceptualisation of the country's national water sector. Within its legal framework the "sector" is considered in its largest term, including all sub-sectors dependant on water as a resource as well as all bodies responsible for the management of the resource (Republique du Burundi 2012a). Within this sector, international donors are providing more than 75% of the investments made (Republique du Burundi 2012b, 12). The most notable donors are the World Bank, the European Union, Germany's KfW, the Austrian Cooperation and UNICEF. In addition, various NGOs provide between 5 – 10% of the sector's yearly budget (Republique du Burundi 2012b). An example is Beyoncé's BeyGOOD foundation, which in June 2017 started a project in collaboration with UNICEF to "bring water to the most vulnerable women and children in the Heart of Africa" (Beyoncé 2017).

According to USAID (2015), donors would be capable of investing more into the sector if the government had the ability to absorb more investments. The government is having a hard time accommodating additional investments because of donor coordination problems and tedious monitoring and evaluation requirements (USAID 2015). The German Development Bank, KfW, plays a particularly important role in the sector, as beyond financing extensions, maintenance and construction projects, it has been involved in reforming the sector's political and institutional framework (USAID 2015).

KfW has historically played a key role in relation to sanitation in Bujumbura. It has been pushing for water to be considered together with sanitation in both policy and service provision (Interview 6, 2015).

Alongside the specific international actors, the international policy framework has great influence on the sector. The most prominent example is the United Nations and their Sustainable Development Goals (SDGs, 2015). According to Marie-Hélène Dembour (Dembour 2015), the Francophone Institute for Sustainable Development (IFDD) supported Burundi in the development of specific SDG targets. Despite being selected by the UN as one of the 15 countries in which to test the implementation of the SDGs (Dembour 2015), to-date no official documents have been published in this regard. Yet, regardless of the specific national targets, the SDGs are accompanied by a myriad of funding opportunities for projects that fall within its umbrella. Like the Millennium Development Goals (MDGs) that existed before it, this international development agenda plays a leading role in the shaping of the national agenda. This can be seen in national documents such as the National Water Strategy and the National Poverty Reduction Strategy. This influence is further underscored in the following section focusing on the sector's national scale.

4.3.2 The National Scale

Necessary reforms in the political, legislative and institutional framework of the sector happen on a national scale. However, since the presidential elections in 2004, the sector has been going through important reform spearheaded by the PROSECEAU that is both financially and technically supported by the Federal Republic of Germany (KfW and GIZ). They have been involved, among other things, in the development of key documents such as the National Water Law (PNEau), the National Water Strategy (SNEau) and the National Water Code. The PROSECEAU has also reinforced the capacities of key national institutions including relevant ministries and public utilities (Republique du Burundi 2012b).

A stakeholder analysis highlights that two main ministries are responsible for the sector: the Ministry of Water, Environment, Spatial Planning and Urban Development (MEEATU) plus the Ministry of Energy and Mines (MEM). Both ministries are jointly responsible for the political and legislative development of the sector. The MEEATU

carries the general responsibility of the sector as a whole, the organisation of water as a resource, as well as the responsibility to ensure the country reaches the relevant SDGs. In parallel, the MEM is responsible for the relevant infrastructure and the provision of water related services.

However, the institutional framework becomes much more complex as a multitude of actors carry varied responsibilities. The Ministry of Public Health and for the Fight Against AIDS (MSPLS), is responsible for the quality control of water meant for consumption, as well as for the promotion of hygiene and sanitation in the human environment. The Ministry of Internal Affairs (MININTER) supervises the operations of the SETEMU. This is the public utility responsible for the provision of water disposal services in urban areas. The REGIDESO, responsible for the provision of water and electricity in urban areas, is under the supervision of the MEM. The Regulatory Agency for the sectors of Drinking Water, Electricity, and Mines (AREEM), is equally under the jurisdiction of the MEM, it is responsible for the regulation of tariffs and for the building of Public-Private Partnerships (PPPs).

In the aim of trying to coordinate the sector, two structures have been put in place. For coordination between ministerial departments there is the National Comity for the Coordination of the water sector (CNCE). On a sectorial level there is the Sectorial Group for Water, Sanitation, and Environment (GSEAE). It provides a platform through which the actors can meet, discuss and coordinate. The objective of this platform is to harmonise the different approaches and programmes in the sector. In addition, it aims to improve the management of external aid into the sector in order to make it more efficient and sustainable (Manirakiza 2012).

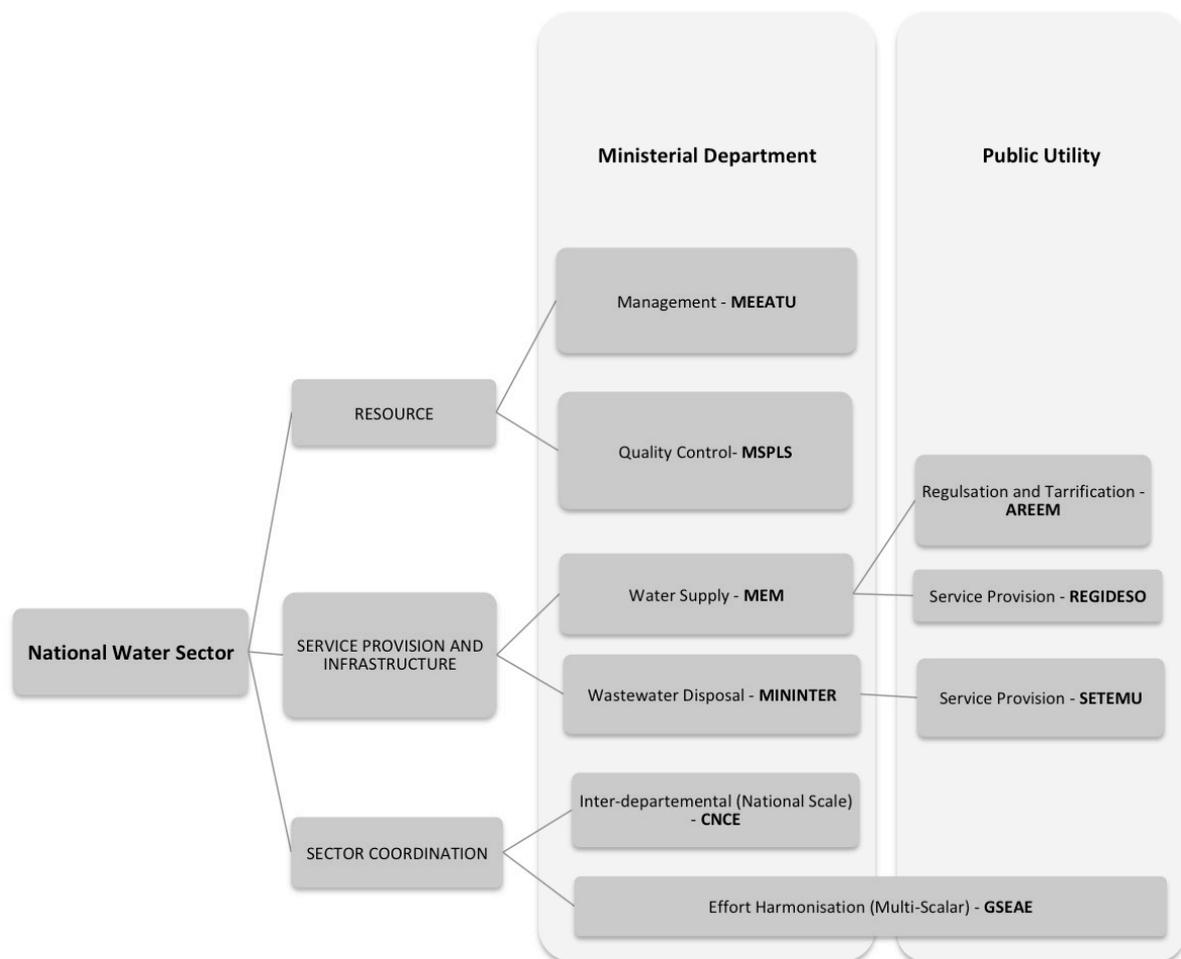


Figure 9: National Urban Water Institutional Framework Diagram (Author's own)

The National Water Law (PNEau), published in 2009, presents the vision of the Burundian Government (Republique du Burundi 2012a). It replaces the previous water law published in 2001. It consists of three parts, the first describing the sector, the second introducing the country's future aims and visions for the sector and the last presenting a road map to how these can be achieved.

The national vision for the water law is to achieve “a state where water is accessible in adequate quality for the needs of the current and future generations and used in an efficient and fair way in order to achieve sustainable socio-economic development without destroying the environment” (Republique du Burundi and Republic du Burundi 2012). More specifically the PNEau aims to improve the legal and institutional framework of the sector, improve the sustainability and access to water and basic sanitation and maximise the contribution of water as a resource to the economic growth

of the country. When interpreting the PNEau vision through an urban justice lens, we see that it considers dimensions of inter-generational equity and environmental stresses.

When analysing the individual articles in the law, the finding comes to light that the legal framework contains a legislative loophole through which households can rely on whatever means for their collection and use of water (for non-commercial ends). Article 84 of the PNEau states:

“No water collection or rejection can be made in the public hydraulic domain without authorisation, concession or delegation coming from the Ministry responsible for water, outside what is presented in the current law. Nonetheless, the collection and use of water from the public hydraulic domain for domestic use can be freely practiced” (Republique du Burundi 2009).

An examination of the language used in the article highlights that, while the first section criminalises strategies that are not explicitly legalised through the PNEau. The formulation of the second sentence provides a loophole for how the collection of water for domestic use is organised. This means that fetching water from the river, collecting rainwater in kitchen pans and other system-D strategies, are legitimised through the legal framework.

Similarly, when it comes to the disposal of wastewater the legal framework equally provides a loophole. If it were not for Article 156, wastewater disposal would solely be allowed into the public sewerage infrastructure. However, as the coverage of the public sewerage infrastructure is only 10% (Interview 5, 2015), 9 out of 10 people in the city would be unable to conform to the law. Article 156 of the PNEau states:

“While waiting for the extension of the public sewerage infrastructure in which wastewater can be released, the creation and usage of pit-latrines and septic tanks are tolerated. They must be made respecting the norms fixed by the Ministry responsible for Public Health and the Environment.” (Republique du Burundi 2009)

The language used in this article makes clear that while disposal in public sewerage infrastructure is the goal, it recognises that without access to that infrastructure people cannot use it for the disposal of wastewater. The article conditionally legitimises the usage of pit-latrines and septic tanks. This conditionality relates to the respect of national construction norms and carries a dimension of temporality seeming to insinuate

that these solutions should not be permanent. The language used in this article is much more reserved than the language in Article 84. Where ‘can be freely practiced’ sounds as if it might be encouraging certain practices, ‘is tolerated’ sounds much more discouraging.

Despite the different strategies in the phrasing of legal texts for the creation of loopholes, household interviews highlighted that there is a lack of enforcement and awareness of what is written in the PNEau. Many of the interviewed households seemed to have a general understanding that the correct way of evacuating grey-water should be through the city’s surface water drainage infrastructure. As one household stated: “how can we get rid of our [grey] water? Our street do not have any gutters [surface water drainage infrastructure]” (Interview 8, 2017). Or as another household stated: “the architect told us to evacuate the [grey] water into the street” (Interview 9, 2017). The following image (Figure 10) shows how households construct infrastructure on their plots to guide their used grey water to the city’s drainage infrastructure. This practice has become the norm to such an extent, that even those who do not have drainage infrastructure in their street, will still make similar structures to dispose of the water on their plot.



Figure 10: Self-constructed Infrastructure to Dispose of Grey-Water (Author's own)

Naturally, the PNEau does not stand-alone; it is part of wider national strategic frameworks. This includes Vision 2025, the strategic framework for growth and the fight against poverty. It builds on the countries Poverty Reduction Strategy Papers (PRSP I & II), pre-requisite for donor involvement in the country. These PRSPs are prepared by the national government in consultation with the World Bank and the IMF. They are the tool through which the national SDG targets can be disseminated locally (Dembour 2015). The following illustration shows how the PRSPs' influence goes down to the National Water Strategy (SNEau) through the Vision 2025 and the PNEau.

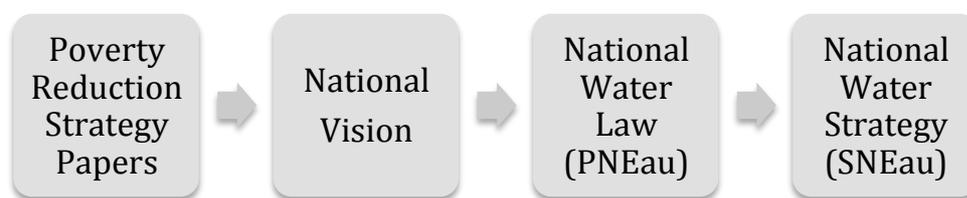


Figure 11: Policy Influence on the national scale (Author's own)

The SNEau provides a specific and detailed strategy for the sector that enables it to have an organised and focused development towards the changes required by the PNEau. In April 2012, the MEEATU published the strategy for the timeframe 2011-2020. It calls for the involvement of all actors identified in the PNEau (Republique du Burundi 2012a). A quick read seems to ensure that the participation of all actors is called upon. Nonetheless, a detailed reading of the PNEau lays bare that only those actors that are explicitly named in the official documents, have the right to participate in the production of water services. So, when the strategy claims to be elaborated through an inclusive and participatory process including all main actors of the sector, it in fact still excluded actors such as water vendors and manual pit emptiers.

One of the major strengths of the SNEau is its detailed evaluation of sectorial problems. It points to the absence of a functioning evaluation and follow-up framework in the sector. Additionally, it points to the lack of a sustainable tariff structure for both water and sanitation. This is one of SETEMU's main obstacles, as a budget should be made available to it by the REGIDESO (a percentage of its water supply income). However, despite the existence of a law that gives the REGIDESO the task to provide the SETEMU with such a budget, this has not yet been put into operation. As stated by the

interviewed representative of the SETEMU, “we [the SETEMU] did studies and in 2000 [we calculated that we needed] 8FBu/m³ [of water sold by the REGIDESO] and in 2008 [we calculated that we needed] 100-145FBu/m³ but nothing has ever come from this” (Interview 7, 2015). The SNEau acknowledges the huge amount of people not connected to the wastewater system and thus emphasises the need to invest in education with regards to sanitation. It encourages citizens to build latrines and to use integrated water management schemes (GIRE) in all their activities related to water. Another problem discussed in the strategy includes the problem of corruption, which it proposes must be fought through increased transparency.

In order to achieve a greater understanding of the gaps between the legislative documents and the reality on the ground, an analysis is made of the city and local scales. For this reason the work now goes on to discuss household water provision and disposal on the city scale.

4.3.3 The City Scale

As presented before, the public utilities responsible for provision and disposal of water respectively are the REGIDESO and the SETEMU.

The REGIDESO – Responsible for Water Provision in Bujumbura

The REGIDESO is a public utility with an autonomous legal and financial status. It was originally created by the Belgians with the legislative order n°B/113 with the mission of providing drinking water and electricity on an international scale in the Belgian Congo and Ruanda-Urundi. With independence in 1962, the REGIDESO split up into smaller national institutions. In 1981, communal authorities were created to ensure water provision in rural areas and the REGISO remained responsible for the catchment, treatment and distribution of drinking water in urban areas (Manirambona 2012). It is thus responsible for the management and maintenance of the city’s water supply infrastructure.

Bujumbura receives its water from different sources: Tanganyika Lake (91%), the Ntahangwa River (4%) that runs through the city, and the Gatunguru and Misumba sources (4%) that come from the mountains (Manirambona 2012). The Misumba River is the only source that feeds into the distribution network without treatment as its raw

water is considered of adequate quality. Water from the Ntakangwa River as well as water from the Tanganyika Lake is first treated through slow sand filtration before being disinfected with chlorine and distributed to the users. Considering the high altitude variation in the city the distribution system has to rely on electric pumps to bring water to the system's reservoirs. From the main reservoirs, a gravity-based distribution of the resource is provided.

The following pictures were taken during a visit of the different REGIDESO sites and infrastructures in April 2017. The selected images illustrate five examples of the challenges the REGIDEDO is facing and how these challenges are managed. It illustrates a tradition of system-D within the public utility.



Figure 12: Field Pictures of REGIDESO Infrastructure (Auhtor's own, 2017)

The first image shows a computerised operational dashboard of the REGIDESO. This dashboard should be showing the current state of the valves to pumps and, enable a remote reading of counters for real time infrastructure management. It would theoretically permit the regulation of these levels through the opening and closing of valves and through the turning on and off of pumps. This would be done from behind a desk through a user-friendly computer interface. However, the projected image on the screen has no relation to the actual state of the infrastructure. “The programme does not work so the image shown is just random. Since we installed the program it has not worked and we do not use it” (Interview 10, 2017). Yet, despite this discrepancy, the dashboard is still actively projected on different computers of the infrastructure operators. This could be because it looks professional. It fits to the idea of what water operators should have on their screens. This links to discussions in post-colonial urban debates where authors such as Roy (2009) show that ‘universal’ ideals of what things should be like often portray western solutions, logics and organisations as the ideal to reach for. However, in this case, having a computerised operational dashboard on the screens has no functional reason. The REGIDESO lacks staff with the potential know-how to repair the programme and also lacks the funds to hire external experts for the task.

The second picture shows a major leak of treated water, which leads to losses of 40 m³/hour of water (Interview 11, 2017). According to the representative of the REGIDESO this leak has been there since 2012 and has led to more than 5 billion FBu of losses⁵. As the pipes are part of a politically important line, the operators responsible for the repair of the infrastructure have been postponing the necessary works, out of fear for existing or perceived consequences of prosecution. As a result, the repair that requires water access on the line to be cut for 3-4 days is postponed rather than executed.

The third image shows large infrastructure pieces, that could potentially be used to create replacement pieces or for which the metal could be reused for other purposes. Yet, as the REGIDESO lacks storage space for these elements, they are kept outside on a plot of the REGIDESO spread around in an exhibitionary fashion. These elements can be

⁵ This is equivalent to more than 2 million Euros (conversion rate of 30.04.018)

seen as a stock of resources for creative reinvention and re-use. Of the REGIDESO's 1,400 employees, 600 are security agents hired to guard sites such as this one (Interview 11, 2017). Figure 13 shows how pipes 1 & 2 did not fit and so, local welders were hired to reduce the diameter of pipe 1 to fit pipe 2. Such interventions illustrate the value of having replacement pieces available and how creative solutions are needed to manage the infrastructure (Interview 11, 2017).

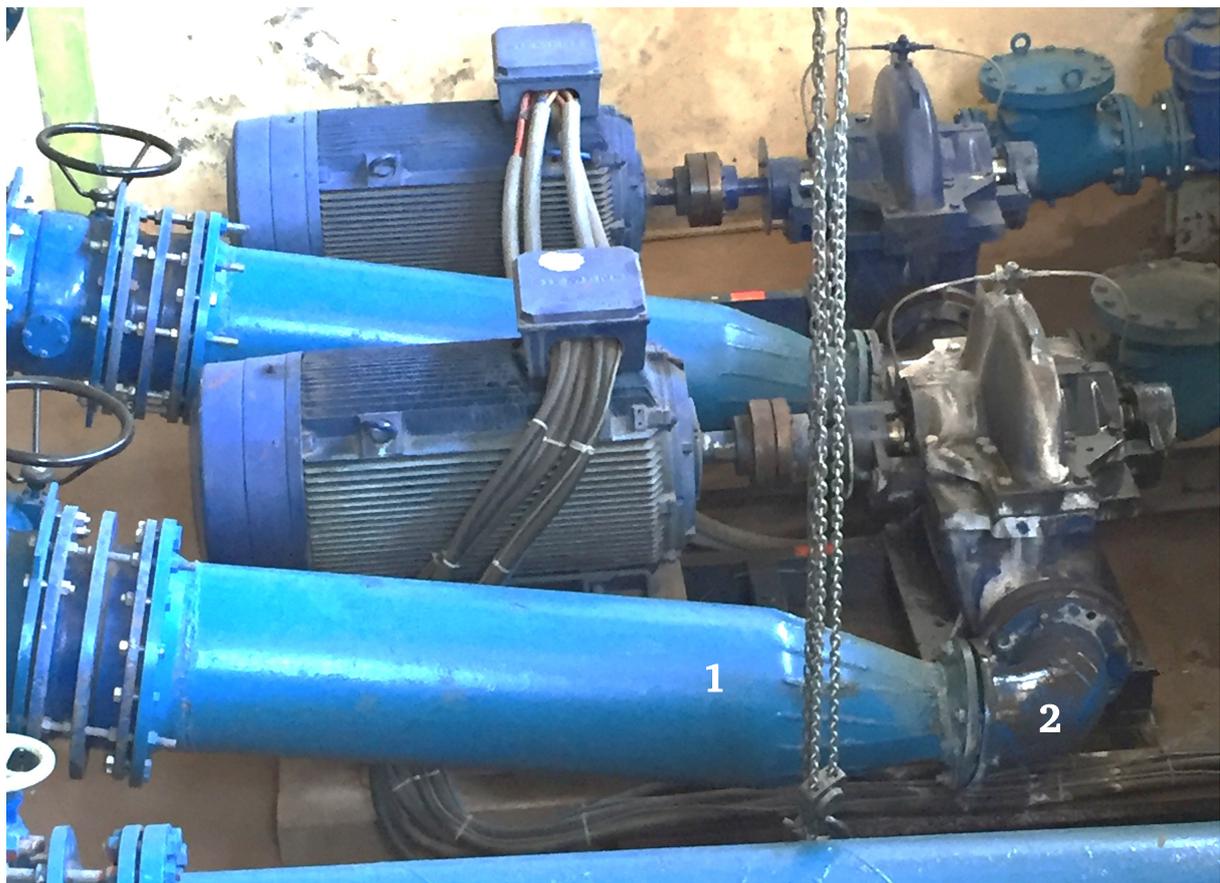


Figure 13: Local welding to make available pieces fit (Author's own, 2017)

The fourth image is the laboratory of the REGIDESO. The REGIDESO has 5 laboratory staff responsible for examining the water quality for the entire city's network. They measure the quality before treatment, after filtration and after the addition of chlorine in relation to its pH, turbidity, temperature and bacteriological quality (Interview 12, 2017). A common problem in this regard is the water turbidity in the rainy season. The rivers flowing into the lake bring in large amounts of particles clotting up the filters.

In the last image we see how a metal hook is attached to a plastic container in order to scoop water to test for its quality at the Ntahangwa water treatment plant. Aluminium sulphate is added to the water to coagulate the particles so they can be filtered out (Interview 10, 2017). A few drops of the red liquid on the image are added to a sample of the water in order to indicate if the amount of aluminium sulphate, being added to the water for its treatment, needs to be increased or decreased (Ibid). If the sample becomes green, more aluminium sulphate should be added to achieve the required water quality, while if it stays red sufficient aluminium sulphate has been added and the water can be pumped into the system (Ibid).

Areas of strategic importance are not subjected to REGIDESO's rationing strategies. These include universities, hospitals, pumping stations, the radio and the presidency (Interview 11, 2017). Households connected to these lines are considered "lucky". They are lucky not to have to be subjected to the REGIDESO's rationing strategies. Nevertheless, they might have to pay for their "luck" as land and rent prices on these lines tend to be higher. Despite being identified as lines of strategic importance, these lines do not seem to elude the consequences of infrastructure failures. This could be seen in the case in Mutanga North, where despite being located on the line of the military hospital, which is a line of strategic importance, households had had no water for 5 days in the two weeks previous to the interview (Interview 11, 2017).

According to statistics, and depending on the source water supply infrastructure reaches between 80% and 98% of the population (ISTEEBU 2014; O. Manirakiza 2012; Republique du Burundi 2009; USAID 2015). The following table is based on numbers from the research done by Bideri (2008), showing that 3.4% of citizens in the city are collecting water from unsafe sources. This mostly refers to surface water sources such as rivers or lakes.

Water Source	Percentage (%)
Direct Connection (in-house)	18.8
Stand Pipe (on plot)	43.3
Water Kiosks (needs to be carried)	33.3
Water Trucks (door-to-door delivery)	1.1
Surface water (needs to be carried)	3.4

Table 2: Principal sources of water access in Bujumbura (based on Bideri 2008)

Among other things, the overall performance of REGIDESO is limited due to the deterioration of existing facilities, high water losses and sub-standard pumping and storage capacities. Willy Manirambona’s (2012) analysis of the REGIDESO’s water loses is visualised in the following table. It shows that nearly half of the water in the distribution network is lost through either commercial or technical losses.

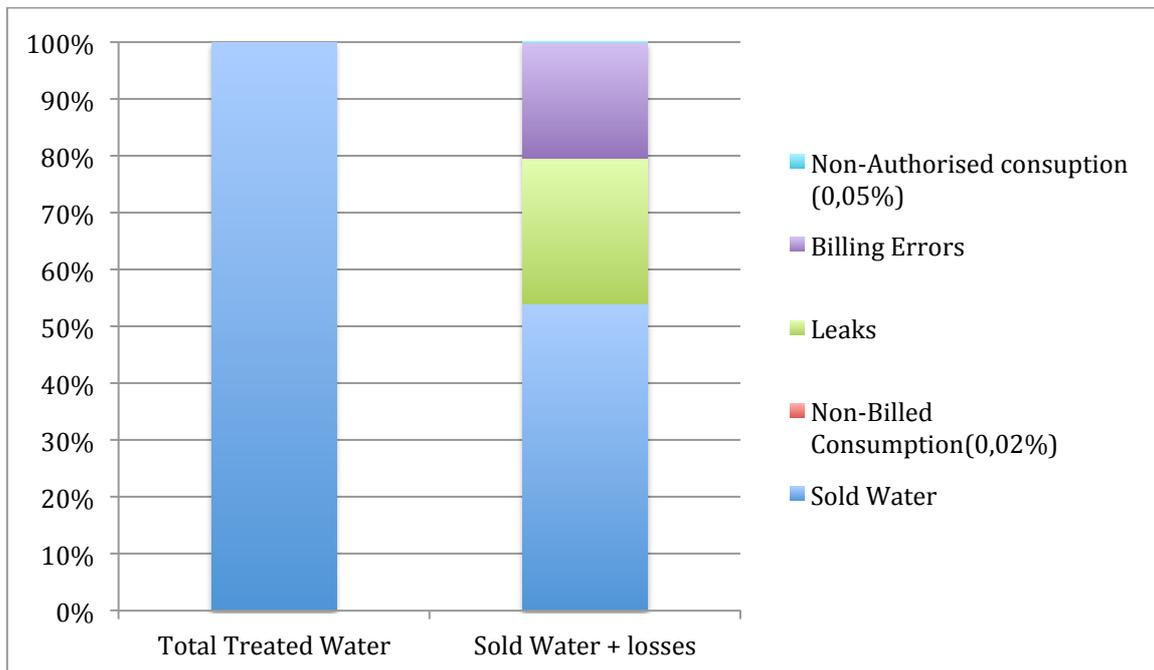


Table 3: Water losses of the REGIDESO (based on Manirambona 2012)

Examining loses can help comprehend why the REGIDESO is financially weak. If only slightly more that half of all treated water brings in revenue, it becomes very difficult

for the REGIDESO to be financially self-sufficient. It has been determined that REGIDESO's insolvency can only be resolved with major financial restructuring (Manirambona 2012). To this end, the government and donors are converting REGIDESO's relationship with the government to performance-based contracts and are assisting it with necessary reforms and capacity building (USAID 2015). REGIDESO serves Bujumbura through 29,700 water connections and 49 kiosks (Manirambona 2012), this would mean that on average, each kiosk water to approximately 5,000 people and that on average each so-called private connection, provides water to approximately 15 people, highlighting the shared character of these plot-connections. According to Goetler et al. (2009) one kiosk can adequately serve 500 – 1,500 people. With more than three times that number relying on a single kiosk, waiting lines have become tedious. The demand for new connections is high, but REGIDESO lacks the means to satisfy it. It only manages to install around 1,500 new connections per year (Manirambona 2012). At this pace, service coverage is unable to keep up with Bujumbura's rapid growth.

The REGIDESO produces 110,000 m³ of water for household consumption per day (Nsavymana 2015). This should generate about 62,480 m³ of wastewater (Nsavymana 2015), well beyond the 40,000 m³ maximum capacity of the city's wastewater treatment plant (Gishinge Kasavubu 2006). Yet, the treatment plant only works at 40% of its capacity (Interview 11, 2017). This would mean that more than 45,000 m³ of wastewater is discarded untreated everyday. It is discharged into the environment, often accompanying rainwater through the drainage networks into the rivers that feed into the Tanganyika Lake. As a result the city is polluting its own source of life (Ndereyahayo 2005). An effective wastewater management system in the city is still missing. This work argues that there is a need to ensure adequate wastewater collection and treatment in the city. In order to achieve this goal the current state of the wastewater management system must be understood.

The SETEMU – Responsible for Wastewater Disposal in Bujumbura

Today, less than 10 % of Bujumbura's households are connected to the city's sewerage infrastructure (ISTEEBU 2014; O. Manirakiza 2012; Republique du Burundi 2009; USAID 2015). This infrastructure is limited to the areas of: the city centre, Bwiza, Buyenzi, Ngagagra, Nyakabiga, Mutanga-Sud, and Rohero. The SETEMU was created in

1983 with the goal, amongst others, of managing wastewater and rainwater in municipalities of urban centres in the country (Republic du Burundi 2009). The city's only wastewater treatment facility is situated in Buterere in the north of the city. It consists of 6 ponds covering 40 hectares (Ruzima et al. 2012). The following image shows the wastewater treatment plant, where besides its primary role as a treatment plant, it also seems to be used as a public space where cattle come to graze and people come for strolls. Officially the area is not open to the public. However, access is granted through holes in the fence, an open gate and the popular use of the area as a public park.



Figure 14: Sewerage Treatment Plant in Bujumbura (Author's own, 2017)

For households not connected to the sewerage infrastructure, the legal framework requests they rely on septic tanks or pit-latrines that are constructed respecting the national norms. These then officially have to be emptied by registered sludge collectors. They then have to transport the sludge to the wastewater treatment plant in Buterere

and pay the SETEMU for the treatment thereof. Despite being considered one of the main actors involved in wastewater collection, the amount of sludge collected by these sludge collectors is very limited. In his 2014 research Bigumandondera analyses the different private registered sludge collectors. He identifies the following companies: BINUB, BGC, Adrew- kurt, PSG, Rukara-Inabasha, Mercus- cleaning and the SETEMU (Bigumandondera 2014). His analysis shows that none of these enterprises own more than 3 sludge collection trucks, that each have an average collection capacity of 6,5 m³ (Ibid). In other words the total sludge collection capacity of all these companies would hardly reach 700 m³ which equates to just over 1% of the city's daily wastewater production.

This leaves approximately 89% of the city relying on water disposal strategies that do not go through the city's wastewater treatment plant. The research has identified that strategies for domestic wastewater disposal depend on the type of wastewater. Two types of wastewater are generated in households. Black water refers to wastewater containing organic waste (mostly organic human waste). Grey water refers to wastewater that has been used for varied household tasks but that has not come in contact with human waste. The distinction between these two types of wastewater is important for numerous reasons. Firstly, the proportion of grey-water to black-water varies greatly from household to household. It equally varies in relation to the black-water disposal technology used. Comparing dry sanitation technologies to flush toilets highlights this variation. For this reason, in addition to cultural habits, dry defecation is popular as it enables the lowering of household water needs. Secondly, while the re-use of grey-water is considered to be safe (for non-consumption household chores or the watering of plants), the same is not the case for black-water. This is due to high contamination risks. For this reason, 92% of black-water is disposed of in either septic tanks or pit latrines (Bigumandondera 2014). As the legal framework makes no distinction between these different types of wastewater it calls for all wastewater to be disposed of in that way. However, 70% of grey-water is disposed off in surface drainage infrastructure (Bigumandondera 2014, 58). This could be interpreted as grey-water being perceived by the population in a category of 'drainage water' together with rain rather than in a category of 'wastewater' together with sewerage.

The expert positions on the consequence of seeing grey-water as 'drainage water' rather than 'wastewater' are mixed. While there seems to be a consensus on the value of grey

water re-use for flushing toilets or irrigation, particular caution must be taken. Grey water from bathing, cooking and dishwashing can contain various harmful microorganisms (Prüss and Havelaar 2001) and pathogens that stand the risk of becoming attractive breeding grounds for mosquitoes and parasitic worms (Tota-Maharaj, 2016). Grey water should be avoided when irrigating vegetables that are meant for raw consumption (Ibid). Tota-Maharaj (2016) argues that grey water discharge in storm water systems leads to surface water pollution and the spreading of pathogens. While it could be a temporary solution for the disposal of grey water, ideally before discharge, appropriate settling and possibly treatment should be considered (Ibid). Some of the decentralised on-site treatment technologies that exist are: soakaway pits, gravel filters, infiltration trenches, constructed wetlands, etc.

In Bujumbura, some blame the discharge of grey-water in the drainage infrastructure for the pollution of the environment, the rivers, and the lake (Interview 7, 2015). Arguing that because of it, the lake's limited ecological self-cleansing capacity has been exceeded (Ibid). Others have argued that the city's grey-water pollution to the lake is close to insignificant. Demonstrating that the lake's pollution is mainly the result of sediments flowing in as a consequence of deforestation and increased soil erosion in the mountains (Interview 13, 2017). This work argues that whether or not the existing wastewater management strategies are the biggest factor of influence in the lake's pollution, measures must be put in place through which wastewater can be purified and treated to adequate standards before being released into either the environment or the city's water bodies.

Besides logistical problems for getting sludge to the wastewater treatment plant the sector also seems to be suffering due to the very limited budget of the SETEMU. The decree n°100/241 of December 31st 1992 stated that the SETEMU should receive royalties from the income of consumed water, yet to date, this law has not been put in place (Ruzima et al. 2012; Interview 5, 2015). Another problem is the extremely luxurious situation of those connected to the sewerage infrastructure. They do not pay for the service. "This is one of the reasons we have difficulties finding investors. They say that it is not normal that people are benefitting of this service free of charge" (Interview 5, 2015). This exemplifies why the sanitation sector in Bujumbura is unattractive for external investments. Additionally, the SETEMU used to receive

financial, technical and institutional support from the KfW however, this support has all come to a halt (Interview 5, 2015).

4.3.4 The Local Scale

On the local scale three major groups are identified. These are: small-scale private entrepreneurs, individuals and communities. While certain private businesses in the sector are active on the city scale, such as registered sludge collectors, the most prominent form of private sector involvement are small-scale entrepreneurs and service providers. They cover different tasks such as the distribution of water, the sale of water, the management of kiosks, the transport of (waste) water, the infrastructure maintenance, the infrastructure repair, etc. In contrast to registered truck collectors that use motorised emptying trucks which charge 150,000 FBu/m³, small-scale manual pit emptiers provide the same service for approximately 30,000 FBu for a pit with a volume of 1.8 m³ (Manirambona 2012). This is nearly nine times cheaper with the advantage that manual pit emptiers have an easier access to the pits in densely built up areas.

The concept of people as infrastructure by AbdouMaliq Simone (2004), nicely illustrates the role of small-scale entrepreneurs, individuals and communities on this scale. “[They] engage in complex combinations of objects, spaces, persons, and practices. These conjunctions become an infrastructure — a platform providing for and reproducing life in the city” (Simone 2004, 408). In order to become infrastructure, people rely on a variety of tools such as buckets, bottles, containers, cooking pots, jerry cans, etc. These tools are transported by foot, by bike, or by motorised vehicles. While different members of a household are involved in this process, most often it is the responsibility of woman and children.

While the community has historically played an important role as the legally recognised actor responsible for the management of water kiosks within a framework of participatory management (Republic of Burundi 2012a), this responsibility has now been taken over by small-scale private entrepreneurs. As a result of unpaid water bills, the REGIDESO was obliged to cut the connection to many of the community managed taps (Interview 5, 2015). The new private management structure of the public kiosks seems to be more reliable. Manirakiza (2015) argues that in order to run their business these entrepreneurs make sure their bills are paid and that necessary reparations are

made. The immediate effect of water cuts on their income, leads to immediate reactions to infrastructure failures and the implementation of safety nets, such as the stoking of water in reservoirs, so that water can be sold even during water cuts (see Figure 15).



Figure 15: Privately Run Public Water Tap (Author's own, 2017)

When the need arises, positive examples of community involvement come to light. Such is the example of a community initiative in the area of Gihosha. Through a common fight to pressure the REGIDESO to provide water and electricity to the area, an informal community structure developed through which neighbours came together to organise their own service provision. “Considering that they have agreed that they cannot or rather do not want to wait [for the public utility to extend the infrastructure] they have thus decided to collect money from all homeowners living along the street in order to invest into their own neighbourhood road and drainage infrastructure project” (De Keijser 2017, 5). This illustrates the need-driven nature of such civil society groups and that there can be value to a system-D mentality in relation to community efforts on a local scale.

When it comes to individuals or single households, a common practice of system-D is to dump wastewater in the corner of the plot in the direction of the slope. This illustrates the limitations of such solutions, as each individual thinks about solving his own problem, without considering the consequences that it might have on others. Another limitation of System-D thinking is illustrated through the notion of plot politics. In the low-income areas of the city numerous households share a single plot. One of the interviewed households in Bwiza explained, “We all share one tap. It is open only in the morning. [...] Then the tap is closed and locked with a lock so that nobody can steal it, but also so that nobody can take water during the day” (Interview 14, 2017)(See figure 16). Another interviewee in Buyenzi stated, “It is the landlord that is the registered customer of the REGIDESO and it is him that imposes that we only access water every other morning” (Interview 15, 2017). The landlord thus controls the use and access to water on a plot, sometimes enforced through a third person. “It is one of the tenants that is responsible to make us follow the landlord’s rules. She has the key to the tap and is responsible to make sure we do not waste water” (Interview 16, 2017). The household in Buyenzi told that in their case, if a household goes through their stock of water before the scheduled re-opening of the tap, they are responsible to arrange themselves to find a solution to bridge the time gap. They can ask other households on the plot, or can fetch water from a public tap in the neighbourhood, but that the tap on the plot will not be made available for such occasions (Interview 16, 2017).



Figure 16: Lock on Water Meter (Author's own, 2016)

Through this multi-scalar governance assessment of the case study, it has become clear that the effects of the governance structures on the different scales do not weigh in to everyday lived experiences the same way. While the local scale weighs in heavily into the experience of (in) justice for individual households, the national scale is composed of structures and frameworks that seem to have a difficult time seeping into the urban fabric and citizens' everyday lives. On the other hand, the international scale weighs in heavily on both the national and city scales as it provides the majority of the budget, leads the sector reforms and comprises tools such as the Poverty Reduction Strategy

Papers and the Sustainable Development Goals to guide sector's development on the other scales.

The assessment has equally accentuated that water supply and sanitation cannot simply be considered as homogenous needs. Within the selection of water provision modes the intended use of the water is an important factor to consider. While higher water quality standards are needed for human consumption, the same is not true for other uses. Doing laundry for example is known for being a very water intensive activity, which does not need the same quality standards as water for consumption. Uses such as cleaning the home, watering the plants also have other requirements, for which the re-use of grey-water may prove to be a valid option. The use of water for watering plants can be seen as both a use and a disposal mechanism. Different on-site solutions can be used for a safe disposal of grey-water.

4.4 The Water Sector's Main Challenges

Fainstein (2010) emphasises the need to consider the main planning challenges when making an ethical evaluation of an urban system. Through expert interviews in April 2015 and February – March 2017, the following challenges were identified: pollution, poverty and infrastructure failures.

4.4.1 Pollution

The Bujumbura water system is facing many concerns of pollution. As the rivers flow through the city they seem to become flowing infrastructures of waste collection. "It is difficult to measure the degree of pollution of those waters as there are batteries, e-waste, [...] every type of waste can be found in these waters" (Interview 7, 2015). The pollution caused by industry is substantial. Many of the city's chemical and industrial companies do not respect the safety norms for the wastewater being injected into these bodies (Ntibibuka 2002). When it comes to water disposal no specificities on the water quality have been made in the sector's legal framework and norms on the construction of sanitation infrastructure are flawed. The representative of the public utility responsible for wastewater collection (Interview 7, 2015) explained that the legal norm for pit latrines is to have a depth of 12 m. However, certain areas have water tables as

high as 1.5 m (Ibid). He argues that these norms do not take into consideration the height of the water table, the types of soil, or the chances for groundwater or soil contamination (Ibid). For that reason he argues that the existing norms tend to foster the problem (Ibid). Formal systems and processes are contributing to the problem of pollution. There is a need to re-evaluate existing norms, to encourage different solutions for sanitation in areas with high water tables and at high risk of pollution.

Historically, it can be seen that in Bujumbura water has always been a service delivered by the state, while sanitation has always been considered a system-D (Interview 7, 2015). This illustrates why sanitation is not a priority for the government, as the people are expected to fend for themselves in that regard. Many people who cannot afford septic tanks rely on un-improved sanitation methods. “Toilets are often not more than a hole, those that can improve it will cover it but in periods of floods, when there is a lot of water, a lot of rain, the water from the rivers then flows into such holes and gets contaminated by the human bacteria that are in it” (Interview 7, 2015). This contamination through human faeces can lead to Cholera epidemics, a recurrent problem in Bujumbura, especially in the city’s spontaneous settlements.

Neighbourhoods along the lake constitute a particular problem due to a high water table. These settlements are not connected to the city’s sewerage infrastructure. They have to rely on on-site solutions. These are at high risk of contaminating the groundwater if they are not meticulously built (Interview 7, 2015). According to the planning and research responsible of the SETEMU “the priority [of the SETEMU] should be to extend services to densely populated areas and along the lake” (Interview 7, 2015).

Another issue is that of public toilets. There are very few public toilets in Bujumbura. In their 2009 book, U.S Ambassador Robert Krueger and Kathleen Tobin Krueger stated, “that in a city centre without public toilets, the ditch was one of Bujumbura’s most popular places for men to urinate and hold brief conversations” (Krueger, 2009: p. 49). Certain parts of the city are known as open toilets, where people can resort to open defecation. Examples include the case along Mission Avenue and at the banks of the Ntakangwa river (Irin 2009). Alternatively people will defecate in bushes or in empty plots around the city (Ibid). If a defecation area is not accessible, people resort to using plastic bags to dispose of their waste, which they will then throw in a nearby bush or trench. The described situation supports the argument that investments need to be

made into public toilets (Interview 17, 2015). Such interventions could lead to great improvements of the city's sanitary condition (Interview 18, 2015). According to an article by WASHplus on August 24th 2010, the Burundian minister of Health, Dr. Emmaniel Gikoro, lamented that the absence of a national hygiene and sanitation policy was responsible for 80% of deaths in the country (Sanitation Updates 2016).

Another concern affecting pollution is the lack of adequate solid waste management. So much of the city's waste ends up in the gutters, in the rivers, and in the lake (Interview 7, 2015). This pollutes the environment, the ground, the water and even the air, as much household waste is simply burned on sight, releasing toxins into the atmosphere.

In an analysis by the French Ministry of International Cooperation on sanitation in Africa, the author argues that system-D has developed new systems and technologies of sanitation that are more adapted to the peoples technical and financial capacity (Thuy 2000). He states, "With the rapid urban growth of African cities, these autonomous forms of sanitation are going to become the primary forms of sanitation used by the urban populations. Yet, these forms of sanitation bring up technical, financial, environmental, organisational and institutional questions that are of a whole different nature from the approaches around sewerage provision" (Thuy 2000, 59). He recommends that research on sanitation in Africa should study the diversity of existing autonomous forms of sanitation and aim to improve these technologies as well as insert them into public politics of sanitation (Thuy 2000).

4.4.2 Poverty

According to the country's Poverty Reduction Strategy Papers, the average monthly income of the urban poor in the country is estimated at 149,880 FBu, equivalent to approximately 7,700 Euro⁶. The country has developed a pro-poor tariff structure in the water sector. Through it, water at public taps should be available for 500 FBu/m³. However, insights from the field visits, accentuate that the majority of public taps sell the water at more than two times that price between 1000 – 1250 FBu/m³.

⁶ Based on a conversion made on 31 May 2017, with 1 euro = 1937 FBu

Despite the efforts introduced through the pro-poor tariff structure, the new management structures of these taps have affected the purchasing price. Originally, as the municipality was responsible for the sale of water, the regulated tariff price would be equal to the purchasing price. However, as private entrepreneurs took over the management of these taps they have introduced a profit margin that results in a price increase. As such, the intention of the pro-poor tariff structure does not benefit ‘the poor’ in a general sense, but benefits only those who have taken on the management of public taps.

When it comes to on plot connections, the pro-poor tariff structure allows households that consume less than 20 m³ a month to pay as little as 315 FBu/m³. However, observations have shown that a single tap connection often does not equal to a single household. As has become clear from the field research, as many as 12 households could be sharing a single tap. This increases the consumption from that tap resulting in an increased tariff bracket (802 FBu/m³). The table on the following page shows the tariff structure of the REGIDESO:

Water Consumption	Official Price (FBu/m ³)
0 – 20 m ³	315
21 – 40 m ³	613
41 m ³ and more	802
From Public Tap	500

Table 4: Water Tariff Structure (based on numbers from REGIDESO, 2017)

In relation to wastewater management, every household is responsible for itself. This can lead to unsanitary conditions that have health consequences for the people who live and work in and around such areas. This creates a cycle to the detriment of the least well of. As sickness affects their income, which in turn results in inadequate access to treatment, leading to more sickness and poverty. This phenomenon is sometimes referred to as the cycle of poverty (see works inspired by English sociologist Seebom Rowntree, 1981).

4.4.3 Infrastructure Failures

The authorities are unable to provide a reliable service to Bujumbura's urban population. Considering the limited budget of the REGIDESO, maintenance of the infrastructure is not a priority (Interview 5, 2015). The same can be said for the wastewater infrastructure. As the infrastructure is over dimensioned, the maintenance costs are very high. Additionally, no investments are being made into the maintenance of the city's sewerage infrastructure and the SETEMU has close to no budget to cover any of the costs related to maintenance and repair (Interview 7, 2015). This leads to many instances of infrastructure failures. These can happen in the pumping stations, the reservoirs, the filters, parts of the distribution network, the water meters, etc. Often repair of the infrastructure is delayed for long periods, pushing those reliant on the system to seek alternative ways to access water. Also the system's reliance on electric pumps leads to recurring infrastructure failures.

The high prevalence of failure leads to an active reading of the failures, which can be interpreted as a "divination tool" (see Trovalla and Trovalla, 2015), through which inhabitants try to discern the logics behind failures. As stated by Trovalla and Trovalla (2015, p. 332) "the unpredictable infrastructure also becomes a system of signs through which residents try to understand issues beyond those immediately at hand". One interviewee asked: "You tell me, with your research, why is it that we have had so many water cuts recently? Has the director of the REGIDESO moved out of the neighbourhood? When I moved into the neighbourhood I was told the area had close to no water cuts due to the fact that he lived here" (Interview 20, 2017). Illustrating "what has emerged is a city in which the materiality of infrastructure in a very palpable way turns rumours, suspicions and hidden agendas into tangible evidence of changing power relations" (Trovalla and Trovalla 2015, 337). In addition to trying to understand the hidden agendas of the failures, citizens exercise a mode of anticipation where they continually try to guess when the next failure will happen or how long the cuts are going to last. This then enables them to adjust their coping strategy according to the fluid changing contextual signs they observe. One interviewee proudly accentuated that while many had to go and fetch water from a far-away water source in the mountains during a recent water cut, she had stocked sufficiently and was able to overcome the cut, as she, unlike others had managed to adequately anticipate and plan for such an event (Interview 21, 2017).

Solidarity is a very important security net on the local scale. As one interviewee stated “when there is a water cut, I get water from my friend who lives down the road. As they are on another water line they usually have water even when we do not. And when she has a cut she sends a boy here to fetch some water” (Interview 22, 2017). This testimony points to existing local knowledge of the water network as people know which lines they are on. Such lines include; the line of the military hospital, or the line of the tank in Gihosha. Such knowledge plays an important role in household’s coping strategies. Solidarity is affected by uncertainty. Not knowing when the water will come back affects in how far people are willing to be solidary with one another. The example of the interviewee in Gihosha (Interview 21, 2017) illustrates this well. She would rather watched her neighbours walk into the hills to fetch water than share her available stock, as it was unclear how long the water cut would last. Stocking is the most common and widely used strategy to cope at times of failure. It happens at different scales with many different types of reservoirs. Figure 17 shows a variety of stocking options that were encountered in the field.

Looking for an infrastructure failure and turning it into an opportunity seems to be a common practice. Leaking pipes for example can be seen as opportunities. Figure 18 shows a leak used as a free water source. Young children use the water for household chores as well as to bath and play in. This illustrates that even challenges have two sides to the coin, and that through system-D, people are trained in spotting available resources, weighing different options and finding ways to get the most of every situation.



Figure 17: Different Forms of Stocking (Author's own, 2017)



Figure 18: Water Leak as Opportunity (Author's own, 2017)

4.5 Conclusion: The role of contextually rooted challenges

A large amount of the challenges discussed could be interpreted as inheritances from the city's past. As a consequence of the city's geographic location, it faces issues related to the topography, water flows and the Tanganyika Lake. The city's topography is extremely difficult to work with, needing higher investments to insure safe constructions, as the earth is very sensitive to erosion and prone to the creation of ravines (Ndayirukiye 2002). This causes problems in relation to the provision of infrastructure in the slopes.

The rivers in the city come down from the East African Rift (at an altitude of 2600m) with high speeds before flowing into the lake (at an altitude of 775m). This causes problems in periods of heavy rainfall (Ndayirukiye 2002). As the lake rises, it too contributes to flooding in the city. In May 2016, the lake's water rose nearly 3 m damaging many houses, infrastructures and businesses (Croix-Rouge du Burundi 2016). As city's location was based on military considerations issues of sanitation, floods, malaria and future city extensions were left out of the discussions. Yet, local awareness existed on the inappropriateness of this area for building a settlement (Ndarishikanye 1999).

The decision to exclude local knowledge from colonial decisions making, led to different versions of history. Where the Western representation of the city's history starts with the creation of Bujumbura by the Germans, local researchers include the pre-colonial history of the area. This includes its Muslim influence and its role as an entrepot for slave traffic. By presenting their own version of history, the knowledge is biased by those in power. This can be understood as a form of oppression through a selective representation and interpretation of knowledge. One example of such selective representation and interpretation of knowledge, is the use of the dimension of ethnicity as the primary framework of identity in the country, through which its population can be grouped and divided. In pre-colonial times, clan adherence fulfilled this role (Ndarishikanye 1999). Clans were often not structured as mono-ethnic groups. Reflecting on this transition from clan-based identities to ethnic-based identities questions the role the colonisers had in the conflicts that followed.

Bujumbura has been created to exclude and separate, through logics of racial divides, inhabitant's origins (Swahili, Congolese, and Asian quarters), ethnical divides, and to a

certain degree, even political following. This has forged a highly diverse city, home to people of different origins and cultures. While this diversity is characteristic on the city scale, homogeneity on the neighbourhood scale has been created through segregational development policies during colonial times and through ethnic differentiation of neighbourhoods during periods of conflict.

Infrastructure services in Bujumbura have never been universal and this work argues that values of equity have insufficiently been considered. Water provision has always been rationed. This could explain why few expect the government to provide universal service provision. This trend seems to go beyond service provision, as many seem to have stopped to 'expect' much from the authorities at all.

The multi-scalar governance assessment brought to light that justice is affected in various ways through processes on different scales. On the international scale, the role of aid agencies is highlighted. Multi and bilateral agencies involved in the sector are involved in restructuring its legal and institutional frameworks. On the national scale the sector's legal framework aims at economic growth. By so doing, it prioritises economic growth over dimensions of justice, equity, affordability, or other ethical frameworks. The legal and institutional frameworks seem chaotic and contain contradictions and loopholes. Some of the norms and building traditions are not adapted to the local context, which could worsen the system's problems. Others might benefit the system but are faced to a lack of implementation. As stated by the representative of the public utility responsible for wastewater collection "It is not that there is no law, the law is there" (Interview 7, 2015). Yet, many laws are unknown to the city residents (Interview 7, 2015).

The analysis at the city scale illustrates the value of taking a post-colonial lens, highlighting the often subconscious pressure of 'universal ideals'. Such as the ideal of the infrastructure operator that manages the infrastructure through an IT dashboard. In addition, households are constantly required to weigh and evaluate their available options. This, in some cases, leads to the decision to endure a reality that less-than-ideal, where for example the burden of pollution has to be carried. "It is a coercion of life, a contradictory reality. I have studied public health and know that bathing in the river is not good. But that is what we do. It is a paradox" (Interview 19, 2017). Often this decision is based on the lack of affordable alternatives. This shows that such conditions are more complex than a simple lack of awareness.

Another factor that is seen to have an effect on justice is fear. Whether the fear is based on real danger or merely on perceptions thereof does not matter. In both cases it can result in (in) actions that influences justice. The example of postponing needed repairs rather than taking a perceived risk exemplifies this effect. Even if people would legally and theoretically be given a right to the city, the presence of fear could still restrain people from it. This can lead to the conclusion that a citizen's right to the city would only truly be achieved in a context of safety and security.

The key role of processes on a local scale is highlighted through this case study. It seems that these processes have the most decisive roles on the final evaluation of justice. The concept of micro-politics emphasises how power structures on this scale are key in either enabling or restraining access to services and rights. The case study underlines that neither water access nor wastewater disposal can be interpreted as homogenous units of analysis. Differentiated needs and solutions can be identified based on water use.

The normalisation of system-D on all scales is yet another interesting finding. Where it becomes clear that all actors are expected to fend for themselves, the role of the state becomes blurred and the expectations towards it diminish. Individuals, communities, families, decentralised government offices, public utilities, everybody knows they should fend for themselves. In this case, the definition of system-D contains a dimension of accepting the situation at hand. As expressed by one of the interviewees this reality must be accepted as a coercion of life. Where the contextual conditions force an individual to comply with a situation. Through which dissatisfaction, rather than leading to protest like in Lefebvre's assumptions of right to the city, simply leads to compliance, acceptance of the status quo and a reliance on system-D. However, supporting Sylvestre Ndairukiye (2002) identified need to free Burundi from its inherited logics, individuals or groups relying on system-D should make reflected decisions which do not per se, mean a rejection of all colonial thought or everything inherited. Rather it requires an ethical evaluation of the infrastructure, law, process, structure, or object, used on a case-by-case basis in order to then keep, transform, or reject its constellation.

Vandalising infrastructure is a common form of protest in the city. Despite making a statement, this takes away the access to the service for many of the city residents. Thus while Lefebvre's assumption that protesting can lead to accessing more rights, what

happens here is that protests have resulted on the one hand in violence and killings (Elgot 2015), and on the other in reduced access to services.

The implementation of buffers through stocking water in reservoirs is a popular system-D strategy. Different institutions on different scales do it. It has become so important that insufficient stocking can be seen as one of the most influential factors affecting justice in the case study. This was illustrated in interview (21), where those who found themselves in that situation were coerced to walk to a water source in the mountain half an hour away. The concept of infrastructure as a divination tool by Trovally and Trovally (2015), offers an interesting interpretation of how the different actors go about deciding which strategies to rely on and to what degree.

There is a need for research concerning the consequences of the current urban development trends on people's lives and the environment (Bideri 2008). Current measures do not prevent the negative effects of these trends, increasing difficulties for the city's marginalised populations. Responding to this call, this work dives into a multi-scalar analysis of the case study through an analytical framework of the translated just city concept.

5 A MULTI-SCALAR EVALUATION OF JUSTICE IN HOUSEHOLD WATER ACCESS AND DISPOSAL IN BUJUMBURA

This chapter makes a multi-criteria and multi-scalar analysis of justice in household water access and disposal in Bujumbura. As discussed in the theoretical framework (Chapter 2), the analytical framework looks at six indicators for justice on four different scales. The equity-dimension is evaluated through indicators of benefits and burdens. Where benefits follow the original focus presented by Fainstein (2010), and burdens represent an indicator added to the analytical framework through insights from the abductive analysis that proceeded. Specifically, the selection was based on insight from environmental justice debates and empirical evidence on the challenge of pollution in the case study. With regards to diversity, the work evaluates indicators of diversity of people (through the recognition of intersectionality) and diversity of logics (through a recognition of choice). Both indicators aim to evaluate the inclusion of people in relation to the final dimension of democracy. Which, from a Lefèbvreian standpoint, provides citizens with the right to participate in the decision making process and to the appropriation and production of space. The dimension of democracy in the analytical framework is thus evaluated through indicators for participating in the decision-making and participating in the production of the system.

When talking about equity, diversity and democracy, note that this chapter is discussing analytical dimensions specific to the case study, and that statements made refer to these contextualised analytical dimensions rather than to the meanings or values of the terms as such.

5.1 EQUITY: Who Benefits and Who Suffers the Consequences?

Following the recommendation made by Susan Fainstein (2010) specific, contextualised and measurable indicators of equity should respond to the most pressing concerns arising from current urban programmes. These concerns, discussed extensively in the previous chapter are those of pollution, poverty, and infrastructure failures. They illustrate the existing link between infrastructure provision, outcomes of physical materialisations of inequity in the urban fabric, and the resulting urban (in) justice on each scale. Equity focuses on the analysis of main benefits and burdens reflecting on the ethical implications that result from them.

5.1.1 The International Scale: 75% of Investments from External Donors

This segment looks into how processes on an international scale are affecting equity for household service provision. 75% of the yearly investments in the sector are coming from external donors (Republique du Burundi 2012b, 12). While the traditional discourse argues that donors are striving to increase equity on an international scale through that support, aid has in most cases, not been able to fulfil this promise (Moyo 2009). Beyond the Samaritan ideology of fulfilling a developed country's obligation to help those less well off, donor countries often have ulterior motives in line with their own interests. Morgenthau (2017) argues that providing aid can be beneficial to the donors themselves who might consider it an instrument of foreign policy. That can be used as a means to promote a country's own export interests (Bartlett 2000).

Aid to maintain public services are often considered to the benefit of the local population, yet Morgenthau (2017), argues that it can sometimes have the objective of keeping order, preventing breakdown, and thus performs the political function of supporting the maintenance of the status quo. As a result, the donor becomes involved in local politics. Supporting this argument, Collier and Dollar (2001), state that considerable evidence exists supporting that the direction of foreign aid is often dictated by political and strategic considerations. An important factor that influences the amount of aid provided, is the presence of strong historical bonds between countries. This might explain the importance of both Belgian and German aid to Burundi, who yearly provide respectively around 45 and 26.2 million Euros to the country (Euractiv 2017).

In March 2016, as a result of the country's political crisis, these important donors had temporarily suspended their aid to the Burundian Government and its institutions (Euractiv 2017). The European Union argued this was a political statement to lever the advancement of human rights in the country. Some of the aid continued and was redirected to "activities directly benefiting local populations and civil society" in addition to humanitarian and emergency actions (Chan 2016; EuropeAid, 2017). Access to water and sanitation are often considered so basic, that support to the sector is never fully dismantled. Yet the sanctions have led to reduced institutional and governmental support in the sector. Projects under the leadership of international agencies and NGOs, were prioritised while Government led large-scale infrastructure projects were completely suspended.

International frameworks like the SDGs, are accompanied by an array of funding opportunities. However, only projects falling under the SDG-umbrella have access to such financial support. For the households this is both good and bad. On the one hand the SDGs support equity, they call for universal coverage of basic services. So in theory, as the call is made, funds become available and the odds of reaching these goals increase. However, in practice the implementation is much more complex. Burundi was selected as a case study for SDG implementation but not a single outcome has been published yet. This accentuates the difficulty of translating these international frameworks into national indicators, goals, and strategies. This might seem discouraging as the implementation of SDGs can be challenging. Burundi is once again portrayed as a country where things do not work. All of which keeps international investors at bay. This has negative trickle down effects on households who could have theoretically benefited from more businesses opportunities, more potential employers, etc.

In summary, the processes on the international scale have both positive and negative effects on household water access and disposal. Take pollution as an example. International aid has had a positive effect on the reduction of pollution related risks. Indeed, while Burundian policy has not been prioritising the battle against pollution (as discussed in Chapter 4), international frameworks like the SDGs, have highlighted pollution as a global challenge. This has placed the fight against pollution on the agenda and has made funds available to tackle the issue. The German support in the sector has pushed for the inclusion of wastewater collection into the country's institutional framework. This example has also illustrated that the suspension of such external support can lead to the reduction of such efforts.

When it comes to the example of poverty, similar effects can be seen. On the one hand, the international frameworks are emphasising the need for pro-poor approaches to service provision. However, its implementation sometimes lacks adequate translation and adaptation (as discussed in Chapter 4). This leads to so-called pro-poor strategies that in fact, are not to the advantage of the poor. The pro-poor tariff structure is a good example. Despite its good intention, it does not fulfil its core aim. In a city where the common plot organisation consists of several households sharing a single tap, their higher consumption leads to a higher price per volume. Additionally, the management

of public kiosks through private entrepreneurs increases the water tariff for the urban poor.

When it comes to infrastructure, donors are often involved in the construction phase at which point they then handover the infrastructure to the local beneficiaries. In Burundi, responsibilities related to the maintenance of these infrastructures are shared between government institutions and the population. Figure 19 (De Keijser 2016), illustrates a mentality of shared responsibility, when it comes to infrastructure maintenance. The board says ‘Maintained Infrastructure = Sustainable Infrastructure’ illustrating a local resident fulfilling his duty by contributing to public works through maintaining the infrastructure. On May 1st 2018, the President required that once a month, these efforts would focus specifically on projects for the protection of water and the environment (Agence Bujumbura News, 2018).

Relying on these public works leads to a lack of transparency between scales resulting in the lack of a guiding vision. As each actor is involved in the maintenance of local infrastructure, individual actions are often not contributing to a common objective. This is seen to limit thinking to the solving of a very specific problem, not encouraging a more thorough and transversal thinking of consequences in other times, geographies or spaces. This leads to increased infrastructure failures in comparison to centralised maintenance for example.



Figure 19: Board Calling for an Active Participation of Citizens (Author's own, 2016)

Overall, it seems international investment has a predominantly positive effect on equity at the household scale. However, the focus seems much more on strengthening the indicator for equity of benefits than burdens. This is especially the case in regards to pollution and infrastructure failure, the international frameworks and investments have a strong positive effect by focusing on a distribution of benefits to the entirety of the population. Whilst focusing on a development for the majority, marginalised groups are at risk of being forgotten. With regards to poverty, the international frameworks aim to strengthen equity of benefits through the eradication of poverty. Yet, additionally they have the intent to strengthen equity of burdens through so-called pro-poor strategies. This shows that there is a recognition that some are temporally excluded, they do not or have not yet benefited from the main objective (poverty eradication).

This shows that both indicators of equity can be affected differently and that depending on the challenge analysed different conclusions can be made. Thus, it can be seen that the selection of indicators determines to a high degree the findings that follow. For this reason, the original recommendation of Fainstein (2010) to focus on the most pressing concerns seems applicable.

5.1.2 National Scale: Institutional Chaos and Donor Involvement

The institutional chaos described in Chapter 4, unsettles the sector. One of the main difficulties in working with the national legal framework, is the gap between the existing formal framework and the reality on the ground. Laws are either not enforced, not known, or the responsible actors just lack the capacities to fulfil their responsibilities. A policy analysis has brought to light that different laws relate to the case study differently. Four such types of laws are now discussed, focusing on how the formulations of the laws affect the working of the case study.

The first are laws formulated in such a way that they can be interpreted as criminalising. If enforced, breaking them results in punishment and fines. These formulations make a clear distinction between the legal and the illegal. An example is Article 45: “Inside the protection perimeter of water sources, dumping, installations and activities that can either directly or indirectly negatively affect the quality of the water or make it unusable for consumption are forbidden” (Republique du Burundi 2012). While certain actions can undoubtedly be defined as either breaking or respecting the law, a potential interpretation of individual words in the article can enable a blurring of its boundaries. The terms: ‘negatively affect’, ‘quality of the water’, ‘unusable for consumption’ are all concepts that leave a certain leeway for the interpretation of the law.

The second are laws formulated to give responsibilities. The problem with these types of formulations, is that the inability to comply with them might not be the fault of the actor responsible for it. No specific punishment or fines are predefined and so authorities have the flexibility to decide whether or not to enforce them. It seems these types of phrasings are mostly referred to only in cases of disputes. An example of such phrasings is Article 92: “All actors with the right of usage of water have the following obligations: 1) use the water in a rational and economic way avoiding wastage of water. 4) Allow regular billing of the water counter in the conditions in which it is done” (Republique du Burundi 2012).

The third are phrases that give rights. These are often not actively enforced, but provide actors the possibility to request/take/demand their rights. Whether or not they will receive this right, is another question. Article 37 is a good example “In case of accidental pollution, the public or private actors who take financial or material

measures to reduce the pollution or its effects, have the right to be reimbursed” (Republique du Burundi 2012).

The fourth stipulate how things should be done. These can be interpreted as guiding principles for the development of the sector. Two examples include: Article 33 “The financing for the management of water is ensured by a national fund, placed under the joint responsibility of the Ministries responsible for water and finances respectively” (Republique du Burundi 2012); and Article 55: “When there is a risk of pollution of the water that puts in danger public health causing harm to the national economy, the Minister responsible for water decides on the halting of the pollution source until it disappears” (Republique du Burundi 2012). As the situation described is not a reality yet, the articles seem to be meant as a goal at the end of a transition period. No time limitation is given to this transition, making the article useful as a political tool to pressure for change when required.

While some articles can be immediately enforceable, others provide temporary legality making it much harder to enforce them. It could be difficult to identify the limitations of the temporality. An example is Article 156 (quoted on page 60). The article provides a temporary loophole for households not connected to the sewerage infrastructure. However, the time element is very broad ‘while waiting for the extension of the public sewerage’. This could potentially mean forever. While the legal framework clearly hopes for a future in which Bujumbura will have universal sewerage access, the case study analysis has highlighted the high improbability of this becoming true. Thus, septic tanks and pit latrines should not be interpreted as transitional solutions, but rather as the main technologies in the city’s wastewater management system. This would require a re-formulation of norms, as current norms are not adapted to the city’s topological and demographic context (Interview 7, 2015).

Certain phrasings provide legal loopholes that create a legal structure through which certain processes and logics can be explicitly legitimised. The most striking example of relevance to the case study is Article 84 (quoted on page 60). It illustrates the existence of contradictions within the legal framework. What is legitimised by one article can be criminalised by another. This supports Ahlers et al.’s (2014) idea that informality is a fluid concept, saying more about the authority to legitimate certain practices than describing the condition of that particular practice. As such laws can be used as tools by the state, as described by Roy’s notion of Informality of the state, to strategically

legitimise or delegitimise certain practices. It supports the dissociation from the binary division between the formal and the informal, and to rather analyse practices based on contextualised concepts such as system-D.

The laws themselves seek to strengthen equity of benefits with regards to all three challenges, but the inability to enforce them limits their impact. When it comes to equity of burdens, the most supportive dimensions of the legal framework are its loopholes. The state of exceptionism that is created for household access to water provides households with the free hand to access water, as they deem most appropriate, based on their specific capacities and available resources. While the sanitation loophole should lead to the building of septic tanks respecting national norms, this is not the case. The lack of verification by authorities and the existing misconception of how water should be discarded, results in a situation where the majority of the city is in fact not respecting the law. Many households are using septic tanks and pit latrines that do not respect the national norms, and grey water is often being led to the city's surface water drainage or streets. As a result, despite the intent of the legal framework to strengthen equity of burdens with regards to pollution, the situation in fact weakens equity as every household is responsible to protect itself from challenges and the poor are affected most severely.

The Burundian constitution states, "All Burundians are equal in [their] merits and dignity. All citizens enjoy the same rights and have right to the same protection of the law. No Burundian may be excluded from the social, economical or political life of the nation because of their race, of their language, of their religion, of their sex or of their ethnic origin" (Republique du Burundi 2012). This illustrates the importance of equity and inclusion of all Burundians through an intersectional lens. Article 25 articulates that none shall receive "inhuman or degrading treatments", which raises questions as to whether the urban and environmental context in which certain people live, fulfils the promises made by the constitution. When it comes to responsibilities, the constitution, in Article 73, gives individuals "the duty to contribute to the safeguarding of peace, of democracy and of social justice". Each citizen is expected to engage oneself to fight any ideology and practice of genocide and of exclusion and to promote and defend the individual and collective rights and freedoms of all. Article 29:2 in the United Nations' Declaration of Human Rights states "In the exercise of his rights and freedoms, everyone shall be subject only to such limitations as are determined by law solely for

the purpose of securing due recognition and respect for the rights and freedoms of others” (United Nations and The General Assembly of the United Nations 2015). This is an important point because it accentuates the need to balance equity.

A final challenge on the national level in relation to equity is poverty. Burundi has a history of tragic cycles of poverty and conflict. While poverty has made the population more receptive to ethnic-based mobilisation, conflict has gradually eroded the country’s human, physical and social capital. The conflict increases the amount of vulnerable people, including refugees, internally displaced persons and disenfranchised youth. It is estimated that war and inter-communal massacres have claimed over 300,000 Burundian lives since the country’s independence (Lemarchand 2012); another 800,000 have become refugees in neighbouring countries; while some 700,000 have been internally displaced (Ibid). Significantly, however, not all of Burundi has been affected by violence and ethnic polarisation to the same degree; consequently, local political dynamics vary across the regions.

Like the processes at the international level, most of those on the national scale have the intent of strengthening and distributing equity of benefits to the entirety of the Burundian population. However, the national level faces challenges in implementing its wishes. These challenges are caused as a result of hurdles such as poverty; social, ethnical, and political divisions; funds acquisition; etc.

In contrast to the international scale, the national scale does consider the permanent nature of temporal exclusion as discussed earlier. Through the various legal loopholes, equity of burdens is also strengthened as the everyday realities of System-D reliance of households is legitimised. As the intensions of the national government seems to be having a difficult time influencing the reality on the ground, it could be more efficient to rely on other scales of action to increase justice in the system. If system-D refers to solving problems without the support of the central government, then that might be the most promising way to reduce injustice in the system. However, as discussed throughout this work, the limitations of system-D have to be considered if it is to be presented as an approach to increasing justice. System-D seems to provide short-term adaptive strategies, however, as the responsibility is decentralised to the individuals in the system, the transformative capacity of large-scale normative goal oriented infrastructure planning is lost.

5.1.3 City Scale: The Blur Between the Formal and the Informal

On the city scale, the case study Chapter presented the state of the infrastructure. However, to fully understand issues of equity, it is important to be critical of the presented numbers. The statistics indicate that a majority of citizens are serviced by the existing infrastructure, but they fail to enumerate the challenges. One such challenge relates to “non-recognised” citizens. These are citizens that are not included in the statistics, as for instance the returnee settlement of Sabe. In 2009, Irin posted the story ‘Forgotten and unseen: on the edges of the city’ which describes the state in which people live in the settlement of Sabe. “Most of the huts in Sabe are grass-thatched, mud-walled structures, with patches of iron sheets.” (Irin 2009, 1) or further “Lack of clean water aggravates the situation, with residents using muddy and stagnant water for domestic purposes and even for drinking. Some of the residents hang around the roads with jerry cans, hoping to get water from passing motorists. Others struggle to fetch water from a nearby well used to water tree nurseries” (Irin 2009, 1). The settlement had been totally ignored by the authorities in relation to any service provision as the authorities argued they supposedly did not know of the settlement’s existence (Irin 2009).

Furthermore, the statistics consider certain areas as serviced because the infrastructure reaches those places, however the field visits showed that many taps, kiosks and pipes have been out of order for a long time. Certain water points require long waiting times in lines and queues. This phenomenon worsens in times of water cuts, forcing people that are normally serviced at home to get water from the kiosks and stand pipes (Interview 24, 2017). Infrastructure failures and affordability are equally not reflected in the statistics. This could be explained by the reflection that the physical infrastructure is exclusionary. Distancing the “lucky” from the “non-recognised” where the “lucky” benefit most from the advantages and the “non-recognised” are burdened most by the disadvantages.

The processes on the city scale mostly seem to weaken equity of both benefits and burdens across the selected indicators. An example is that the sewerage infrastructure is used free of charge by those serviced by it. Another example is the regular electricity cuts. For those unable to afford a buffer technology, this limits access to water and households have to rely on alternative, often more expensive, ways of accessing water.

The blackouts also harm electricity dependent businesses, and hence, the incomes they generate.

On the city scale, the reliance on system-D in public utilities contributes to more equity in the short term with regards to access to services and infrastructure maintenance. Thanks to system-D, the utilities manage to reduce costs making the system more affordable to households. However in the long term, this reduces the affordability for households, as there might be an increased number of infrastructure failures in comparison to if there were a more regular centralised infrastructure maintenance structure. This highlights that, depending on who the evaluation of justice is focused on, different conclusions could be made. Increasing the affordability for the public utility on a city scale can decrease the affordability for households on a local scale.

5.1.4 Local Scale: Community Initiatives, Plot Politics, and System-D

Plot politics is one of the most important dimensions affecting equity for households in the provision and disposal of water. This is particularly important on plots where different households share access to a single official connection. Often the owner of the plot sets the rules regarding how, when and for what reasons people can access water. The tenants have their rights dictated by the official REGIDESO client or an intermediary thereof. This is to the advantage of the REGIDESO client as she/he can adapt the situation according to their needs and preferences. They do not have to live by the stipulated rules themselves, yet can dictate the rules for the others. This disadvantages the tenants because it creates an additional set of rules that they have to abide by, limiting their accessibility to water. However, the situation does help reduce water wastage and thus overall water use and costs.

Plot politics is more complex than landlord-tenant relationships alone. It also includes the relation between individuals in a household based on gendered roles and family compositions. Household water management is mostly a woman's job. However, when water becomes a source of business it often is done by men. As children tend to help in the provision and disposal of water, households with many children can divide these responsibilities. This means it is more difficult for people with restricted mobility, or for elderly people living without children or grandchildren. Those who can afford it often

have workers to fetch the water, despite potentially having been hired for different reasons.

The grasping of opportunities from infrastructure failures is popular on the local scale. While it is to the advantage of some (those who discover and exploit the opportunities), it is often to the disadvantage of others (those who were supposed to get that water in the first place), even though the failure could lead to nobody benefitting from the water. Thus, as long as the failure is not caused intentionally, such practices seem to offer more good than bad. Such cases of self-appropriation of the infrastructure for alternative uses can lead to innovative involvements with the infrastructure. Figure 20 shows how the drainage is blocked to provide the entrepreneur with a water reserve that can be used to clean bicycles.



Figure 20: Stopping the Flow of Water for an Alternative Use (Author's own, 2017)

This appropriation of the system also happens on the levels of repair and maintenance. As water kiosks are run privately, local entrepreneurs invest into the maintenance of the infrastructure. The REGIDESO is often circumvented, seeing the existing assumption that waiting for the REGIDESO might take years (as illustrated by the example described in Chapter 4, page 66). This involvement is to the advantage of the households because they have a more reliable access to the source, however, on the other hand this is only because the tap managers sell the water for a profit, thus making the resource more expensive for the households. This constellation thus increases equity in relation to access, but reduces it in relation to affordability. This section emphasises that even within the single dimension of equity, with a clear focus on who the justice evaluation is focused on, different indicators can be at odds with one another.

A major factor affecting households' decision on how to access or dispose of water is the poor comprehension of the consequences these actions can have on their environments and even on themselves. This was made clear, through comments mentioned in the case study Chapter, such as "the architect told us to let the water run into the gutter"

(Interview 21, 2017), or yet “how can we get rid of our wastewater if we do not have drainage in the street?” (Interview 9, 2017). However, this is not always the case, a contrasting comment was given by a university public health student who stated that he “know(s) that bathing in the river is not good. But that is what we do. It is a paradox” (Interview 25, 2017). Households are constantly weighing and evaluating available options. It can lead to the decision to endure a reality that is not ideal, where certain burdens have to be borne. Through the different interviews it was highlighted that pollution is often one of those dimensions households are willing to endure. While on the one-hand households have access to water or wastewater disposal mechanisms, on the other hand, these solutions can have negative consequences on other aspects of their lives such as health and the consequences thereof.

On the local scale, system-D in combination with available opportunities, leads to an increased use of the resource regardless of its quality. People are content with what they have, and manage to sort things out relying solely on available means, even if this is at the potential cost of the water quality. This accentuates the need to provide affordable access to water of adequate quality through various back-up systems. In other words, there is a need for a diversity of choices if the system is to avoid putting people in situations where they feel coerced by life.

Regarding affordability, the local scale is the one where things can get really out of hand. For example, if there is a water shortage, it could be seen as an opportunity for business where water can be re-sold for as high as five times its official price. Those that cannot afford back-up technologies, like large storage tanks or rainwater harvesting reservoirs, end up spending huge sums of money on very little water. This is sometimes referred to as the ‘poverty tax’: the fact that an initial lack of money for investment ends up costing more money than the initial investment would have (see Karger 2007). A strong social safety net could avert the poor from having to pay this poverty tax. As illustrated in Chapter 4, households rely on family and friends to access to water, finances, information, exchanges of favours, etc. This helps households in reading and managing the situation, but a misreading of the situation in times of failure, could also puts those social relations under the stress of uncertainty as the end of the difficult period is hard to predict and so at times it is safer to keep available resources rather than share them.

The local level is also pivotal in relation to infrastructure failure. Infrastructure failures increase as a result of self-appropriation by citizens, reliance on system-D and conflicting opportunities. A small group of people will divert the service from an often much larger group of people. The infrastructure failures are thus purposefully steered depending on the goal of the person doing the action. As these strategies tend to be very localised considering only the consequences influencing the individuals in question, a broader geographical or multi-scalar reflection of consequences is lacking. This sometimes results in things such as: reducing the overall water pressure, creating leaks, theft of elements of the infrastructure, etc. People should only exercise their rights and freedoms to such limitations that they respect the rights and freedoms of others (United Nations and The General Assembly of the United Nations 2015). Thus, making the most of an existing leak does not take away anything from anyone, but vandalising the infrastructure does.

Overall, the processes on the local scale have a prominently weakening influence. Households are in competition with one another as a process to the advantage on the one household can have serious negative effects for another. The examples of water appropriation, small business opportunities, plot politics, etc. all seem to follow that logic. To illustrate this, consider a household that has reached the bottom of its water stock and asks the intermediary to provide them access to the plot's tap. Considering the landlord does not allow this, the intermediary may ask for a "Fanta" in exchange for such a favour. This exchange of a gift for a favour can be interpreted as a form of corruption. Where a "Fanta" does not specifically refer to a "Fanta" but rather a little something that could come in different forms. These processes are often not considered when thinking of justice and equity in the city, yet they seem to play a key role in the final categorisation of winners and losers. For this reason it is important to consider how the negative sides of system-D approaches can be managed.

5.1.5 Closing statement on Equity

Fainstein (2010), identified equity is as the core dimension of justice. The present analysis highlights that equity in itself contains different aspects of influence. An evaluation of equity requires a reflection on who the subject of evaluation is, what indicators are being evaluated and how they relate to other potential indicators. A

specific household may be gaining in relation to water quality at the cost of burdens in relation to the price of the service or vice-versa. Individuals within a household may be affected differently depending on their role in the household and on the household constellation.

This work started with the aim of analysing urban justice to the benefit of the least well off. Within this evaluation of equity, this group has shown to be diverse with certain households at intersections of different negative effects. Different profiles of burdened households have been identified: tenants on a multi-house plot, plots down-the water flow, in peripheral opposition neighbourhoods, dependent on the business or rules of others, lacking the financial means to invest in buffer technologies and with a small or distant social networks. To reduce injustices towards these groups, a multi-scalar understanding of the processes that creates these inequities is necessary. The local scale, which has no major significance in Fainstein's 'Just City' concept, is in fact the most influential and strongly weakens equity in relation to all but one challenge, access to services, which is achieved to the detriment of indicators of pollution and price.

The different scales seem to be complementary as they prioritise different indicators of equity. While the international scale seem to weigh in positively to the challenge of pollution, the national scale (despite a lack of implementation), seems to focus on the challenge of poverty. The city scale puts emphasis on reducing infrastructure failures and the local scale increases service access. Furthermore, the local scale illustrates localised priorities and the heterogeneous character of the local. The main conclusion that can be taken from this discussion on equity, is that by understanding why the intent of different actors is sometimes not achieved, recommendations can be formulated. However, these are in themselves not guaranteed to reach their intended goal, as this is a complex and thus unpredictable system. Yet, we should strive to do what we can to ensure that households are not being left without alternative choices or solutions and that they are not being required to accept a 'victimised' role. The lack of alternatives illustrates the relevance of diversity of choice in the system. Until the infrastructure provides an affordable and reliable service across the city, there is a need for a diversity of choice.

5.2 DIVERSITY: Recognising the Variety of People and their Logics

Diversity is the second dimension under analysis. Two indicators have been selected to measure Bujumbura's diversity; one relates to people, the other to their logics. The latter indicator builds on the discussion on equity, which has highlighted the importance of choice. Considering the unreliability of the infrastructure, or unaffordability of certain services, households should have alternatives available that do not infringe on the rights of others. The following section discusses the recognition of diversity on different scales. Supporting Fainstein (2010), it is valuable to consider the recognition of people and their different levels of oppression separately from questions of participation.

5.2.1 International Scale: a Universalisation of What is "Right"

Ban Ki-moon, the previous UN Secretary General, reiterated in 2015 that the United Nations' Universal declaration of human rights' proclaimed in 1948, articulates "the rights and freedoms to which every human being is equally and inalienably entitled" (United Nations and The General Assembly of the United Nations 2015). He says it provides a foundation for a "just and decent future for all" providing a tool against oppression (Ibid). The document clearly states that all human beings should be equal regardless of their race, colour, sex, language, religion, political or other opinion. This illustrates an understanding of intersectionality, and that it is important to consider these dimensions if we want to understand the oppression an individual or group may be facing. According to article 21:2 "Everybody has the right to equal access to public service in his country". This is a right that either starts from the assumption that such services are universally accessible, and the assumption that public institutions should be able to provide such universal services everywhere. However, research on infrastructure development in the Global South is starting to turn away from that idea, arguing that rather than continuing to wait for this universality to become a reality, planners and governments have to accept that a fragmented assemblage of socio-technical solutions is providing these services. Rather than insisting on equal access, an alternative would be a call for differentiated access. People should have affordable and viable options

available. If one alternative fails, back-up options that are not to the detriment of the individuals, should be available.

The Sustainable Development Goals (SDGs) offers different insights. Firstly, that the United Nations recognise that “eradicating poverty in all its forms and dimensions, including extreme poverty, is the greatest global challenge and an indispensable requirement for sustainable development” (United Nations General Assembly 2015, 4). This has been confirmed through the findings of this research referring to the existing poverty tax or downward poverty cycle. The General Assembly of the United Nations acknowledged the need to provide special attention to the most vulnerable in order to empower them (United Nations General Assembly 2015). The agenda states that to have sustainable development there is a need for peace and security. The discussion on the effect of fear on a citizen’s right to the city also portrayed this need. The SDGs recognise the need for just and inclusive societies that are based on respect of human rights, effective rule of law and good governance at all levels with effective and accountable institutions. This assumes that human rights are universal, which as previously discussed is not (yet) the case. Secondly, it assumes that laws are clear and enforceable, which is not the case in Bujumbura’s water sector. It additionally assumes that institutions have to be effective and accountable in order to have good governance. Due to the lack of resources, the REGIDESO has to rely on system-D to solve problems. Despite affecting the institutions effectiveness it cannot be considered bad governance because, they are in fact, developing creative solutions to support the governance structures and processes. Through recognition of the usefulness and validity of system-D, the door would open to a diversity of logics and systems beyond western thinking. Rather, these alternatives should be fostered encouraged and evaluated, as maybe they can contribute to innovative solutions to global problems.

All in all on the international scale, we observe strong support for the recognition of diversity through the lens of intersectionality. However, on the diversity of logics the same international laws, agendas or actors behave paternalistically. There seems to be an approach of best-case examples, of right and wrong ways to go about the provision of such services, and institutional effectiveness and transparency are required as well as universal infrastructure coverage. Local solutions, innovations or creative assemblages are marginalised without even considering the beneficial effect they might have on justice in the system. An example of such logic is the ability for REGIDESO customers to

pay their bills in instalments, or to just pay a fraction of the bill. This makes it easier for those who have a fluctuating income to keep up with their bills, and it provides the flexibility that is often appreciated in informal businesses to pay in small and irregular instalments. This could be considered ineffective on an institutional level, as one transaction becomes more spreads over time and space. Yet, this logic provides flexibility that increases equity through increasing the affordability and alternatives. Thus, having a positive rather than negative overall effect on diversity of logics.

5.2.2 National Scale: Resistance to Westernisation

On the national scale, the Burundian constitution states the rights and responsibilities of its citizens. Article 13 reads: “All citizens enjoy the same rights”. However, according to Brachet and Wolpe (2005) social divides in Burundi come in all shapes and sizes with these four predominant divides: ethnic, clan-based, regional and class-based (urban elites vs. rural masses). Before colonial times, the clan distinction was more important than the ethnic one (Ibid). Clans were grounded in territories, casts and lineages (Ibid). Burundi is one of very few African states with a national identity that preceded European colonialism: “the monarchical system had succeeded since the 17th century through a subtle interplay of alliances with all the ethnic groups as well as with some clans thus establishing a genuine Nation-State” (Gahama 2002, 3). However, the cyclical violence that have haunted the country over the past decennia, have deepened the social divides and the politicisation of the *bashingantahe* institution (as discussed in the case study Chapter), has seriously eroded Burundi’s traditional capacity to resolve conflicts in a non violent way (Brachet and Wolpe 2005).

The Burundian social mosaic (Brachet and Wolpe 2005) was further complicated by the position of women who face legal and societal discrimination. This includes legal discrimination with regards to inheritance, or practical discrimination when it comes to credit practices, participation in the *bashingantahe* system for example, as well as a cultural household role to take care of the household and provide her earnings to her husband. A public debate was attended in March 2017, during which the role of woman in Burundian society was discussed. The French Cultural Centre in Bujumbura organised it. While most attendees of the debate where higher class, educated Burundians, the notions that the man is responsible for managing the household budget did make for

heated discussions as some called for the right that woman should have to manage their own budget following more global trends, while others considered it a step away from the traditions, an abandonment of what is Burundian to become Western, which they believed were changes that should be countered. There is growing resistance against Western ideals and their enforcement onto the population. This resistance is not just eyeing international laws and agendas as discussed before, but also in the financial dependency on external funding for the sector. The logic behind this resistance will be discussed further in the section on democracy.

Conflicts, poverty and an increasing demographic pressure, are all contributing to the increased divide along ethnic, class and political lines. This points to the weakening of the indicator for diversity of people on the national scale. Calling for a need to consider issues of diversity and recognition of people and the different systems of oppression.

Another dimension of social division is the tension between returning internally displaced persons and refugees and their communities of origin (Brachet and Wolpe 2005). As discussed in the section on equity, the demographic situation is a major challenge. There is a high population density with limited amounts of resources (land, water, food, etc.). Thus, if resources were abandoned during the escape, those who remained considered them opportunities available to be appropriated.

Overall the national scale encourages diversity of logics through, for example, the legal loophole for household water access (Article 84). Households are encouraged to think out of the box and rely on any available resources to access water. The same cannot be said for the legal loophole relating to wastewater disposal (Article 156). While it also accommodates for a legal alternative (norm abiding septic tanks), it is much more limiting than Article 84. While Article 84 stipulates that all alternatives ‘can be freely practiced’, Article 156 says exactly how things should be done. Article 84 leaves more choice, opportunities and space for creativity in finding solutions to the situation. Hence, it provides a more adaptive and flexible legal environment. This is clearly to the advantage of households as alternative solutions to service provision are legally encouraged rather than criminalised. With regards to the diversity of logics, the resistance to Western ideals can partly be explained as a reaction to the historic enforcement of Western logics onto the Burundian population. This resistance is not unanimous. Some are investing into becoming Western, while others prefer to invest in their traditional heritage. However, both extremes are detrimental to a critical approach

to implementing change, as change should be evaluated based on its effect on justice rather than its perceived value of 'Westernisation'.

When it comes to the diversity through intersectionality, the national scale results in a binary effect. Firstly, the constitution advocates intersectionality and the inclusion of all people. Simultaneously, some of the traditional laws and structures do the opposite. The overall cultural and historical context delivered a very divided social fabric containing explicit or implicit structures of oppression. This furthers to the notion of infrastructure as a divination tool (Trovalla and Trovalla 2015), the oppressive dimension of structures is so normalised that even if there is none, one might be falsely read into it. This in turn, could result in resistance to the identified oppression that had not been there to begin with.

5.2.3 City Scale: Lack of Adaptation of Inherited and Imported Logics

Despite the legal framework the country's social and historical past has left the city with social and ethnical divisions. Today, political divides still shape Bujumbura. Neighbourhoods supporting the ruling party are being decorated with stone monuments in the colour and symbol of the party (as can be seen in Figure 21). The party's youth group, the Imbonerakure, patrols these neighbourhoods. While these are supposedly providing safety and order, they have been accused of numerous disappearances and murders of people speaking up against the ruling party (Chan 2016). This isolates "opposition neighbourhoods". They are branded as problem neighbourhoods from which one should stay away. It is where shootings or confrontations occur (Chan 2016). This study however found no link between the access and disposal of water in neighbourhoods and their political standing.



Figure 21: Stone Monument of the Ruling Party (Ikiriho, 2017)

Geographical divides find their roots in the historical infrastructural development logics of the city. As discussed in Chapter 4, there is a clear distinction between the old “white” and the originally “native” areas. White parts of the city were provided with individual household connection to the infrastructure, native areas were provided with kiosks. With limited options for expansion, the popular neighbourhoods densified and numerous households live together on a single plot. After independence, the racial divide became a socio-economic one. Implementing ‘pro-poor adaptive solutions’, popular areas still get kiosks rather than individual connections. This goes against the idea that everybody is equal especially so, as the tariff structure adds salt to the injury. Poor households could have access to water at 0.32 FBu/L if they had an individual private connection. However, they have to pay 1.25 FBu/L to buy water from the kiosks.

This is nearly four times more expensive. Structural changes need to be made if what is introduced as pro-poor structures are truly to benefit the poor.

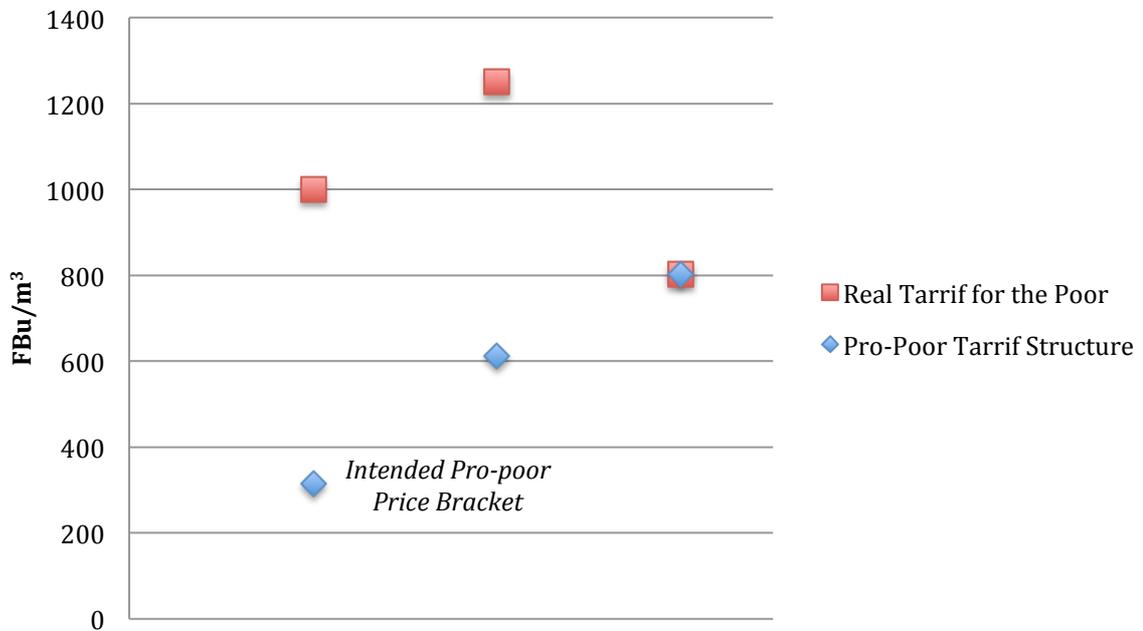


Figure 22: Tariff Structure Mismatch (Author’s own)

On the city scale, wastewater management is done through surface water drainage infrastructure. This logic, despite not being the formal institutional logic, has taken on an important space in the thinking of wastewater disposal. This might seem to solve the problem of wastewater disposal for the household. However, it has negative consequences on sanitation and hygiene in the city, pollutes surface water sources and increases the risks of water borne diseases. If at first sight this practice might seem to be providing more equity and diversity in wastewater disposal, the wastewater is in fact neither managed nor disposed of adequately, but rather dumped and let off.

The main actors on the city scale are the public utilities whose responsibility it is to provide the population with access to the infrastructure network. This rather traditional role limits their involvement in the provision of alternative solutions and a diversity of choice. Additionally, they should provide equal services to all city residents, which is not the case. Considering the socio-economic divide in the urban fabric and the inherited unequal distributions of infrastructure, the city scale extends a rather negative effect on

both dimensions of diversity. The public utilities should understand that the traditional role they adhere to, is not adapted to the city's actual context and that there is a need for a more active recognition and inclusion of excluded populations. In addition, public utilities should have an extended mandate allowing them to provide alternatives to the centralised infrastructure they are providing. This is already partly the case with the SETEMU that has sludge collection trucks that can be called in to empty a household's septic tank and transport sludge to the wastewater treatment facility. This logic of providing a diversity of choice that should be extended further, as it provides adapted and flexible alternatives helping households to cope with infrastructure failures.

While overall the city scale shows a support towards diversity of logics, its intent to support a diversity of people is weakened as illustrated through the pro-poor tariff structures. The city scale highlights a need for an appropriate adaptation of both inherited and imported structures. Post-colonial debate logics apply in the present case study. The structures developed in a certain context cannot simply be introduced into a new one. They need to be adapted to the local geographical, demographic, political, cultural, historical and socio-technical context. The example of the colonial infrastructure development logic (see section 4.1.5) illustrates how the structures carry certain ethical values, which might be extended if they are not explicitly recognised and countered.

5.2.4 Local Scale: Importance of Social Networks as an Infrastructural Back-up Strategy

Social networks, available opportunities and household composition play a role at the local scale. Social networks tend to be very exclusionary, as they provide a safety net to those inside it, but not to outsiders. This might be a consequence of the country's violent past or result of the current political tensions. People are careful with what they say and whom they trust. This circle of trust becomes even smaller in situations of extended water cuts and uncertainty. Not knowing when the water will be back, people become more protective of their resource, such as was illustrated in Chapter 4. The exclusionary character of the social networks is detrimental to returnees, refugees, or recent rural migrants. They are isolated from these networks and have to truly fend-for-themselves. System-D pushes its adepts to arrange things with others, to favour exchanges and to adhere to social networks as a back up. However for returnees,

refugees, and recent urban migrants, this dimension of system-D is difficult to access, putting them in a specifically vulnerable situation.

Households renting homes on multi-household plots with a single tap are yet another group that finds itself in a vulnerable situation. As described in the case study Chapter these people have to abide to their landlord's rules, possibly leading to a locally very pertinent form of oppression. The dimension of diversity thus encourages recognition of the landlord-tenant divide and the power relations between them that are at the base of this system of oppression. It is only after having explicitly recognised the system of oppression that efforts can be made to the inclusion of tenants in the further development of the water provisioning system.

Many actors rely on system-D for water. However, the better off might invest into buffer technologies such as electric pumps and large water reservoirs. The variety of system-D solutions reflects a household's social class. More rural traditions in water collection or disposal are solutions for the urban poor. This distinction illustrates that system-D solutions cannot be implemented randomly, but that questions of representation and identity play important role in a household's decision on how to cope with a situation. The social divide is also found in the divide of social nets, where households of a same socio-economic class tend to be part of a same social net. The socio-economic division in society can be seen as an invisible wall dividing worlds. Two worlds that despite their infinite interconnections, place people in very different relations to justice. The one have more money, stronger social-networks (containing more influential people, with more resources), have better access to infrastructure, and lower service prices per m³. In contrast the others have less money, the poverty tax, weaker social networkers and more expensive service prices.

The described coping mechanisms on the local scale have the strong exclusionary nature. In addition, they illustrate the gaps hindering solidarity and mutual sharing beyond the existing socio-economic and landlord-tenant gaps. Additionally, it highlights the difficulty for newcomers such as returnees or refugees, to find their place in the social fabric. So while these processes are supportive to diversity of logics, they weaken the diversity of people.

5.2.5 Closing Statement on Diversity

Diversity is a historically ill-treated dimension requiring more future attention on all scales. On the international scale, the intersectionality of people is recognised and specific attention is paid to the recognition of people and their various systems of oppression. However, a very strict western conditionality (universal declaration of human rights, SDGs, western theory), is imposed on the logics that should supposedly contribute to the working of the sector. In contrast, on the national scale, the opposite is seen, as it presents a framework open to a diversity of logics, in parallel to a resistance to 'Westernisation'. While in practice a diversity of logics are practiced for both water supply and wastewater disposal, they have very different legal frameworks. Only one alternative is presented to sewerage infrastructure, while individuals can freely chose their means of water access. Within the legal framework only 'gender' is explicitly recognised. The analysis has pointed to many other systems of oppression that should be given further consideration. These include the following divides: socio-economic, landlord-tenant, ethnical and political. These dimensions are inducing oppression in various forms, yet are not all explicitly brought up in the sector's legal framework. Ethnicity is commonly recognised as a dimension of oppression. This can be seen in national documents such as the Arusha peace accords (2005). However, the need to explicitly state it has not trickled down into the policy framework of the water sector.

To conclude, it can be seen that the international scale strengthens the indicator for diversity of people, but weakens the diversity of logics. This is countered through processes on all three other scales, which are trying to strengthen the indicator for diversity of logics. However, some of these logics, like the structure of the Bashingantahe, are in their turn weakening further the indicator of diversity of people. In this case through the Bashingantahe's exclusionary nature with regards to gender, class and ethnical representation.

5.3 DEMOCRACY: Co-producing the System; a Right to Participate in the Decision- and Space- Making in the City

The dimension of democracy will be measured through the indicators of right to the city and production of space. The main idea of Fainstein's concept of democracy, is the idea that people should be involved in the decision making process thus, making an analytical distinction between process and outcome. The analytical framework has

extended this from merely planning to include the production of the city. It thus examines whether the people are involved in the production of the system, and questions whether citizens have a technical, social and political right to the city.

5.3.1 International Scale: Aid as a Tool of Control

Morgenthau (2017), suggests that aid to this sector aims to maintain order, and avoid revolt or revolution, it can thus be understood as a tool of control. Keeping the people happy with minimum access to these services. Keeping them behaved and avoiding revolt. If so, it goes against Lefebvre's understanding of democracy and the right to the city, as he believes that revolt is one of the main tools through which people can take their right to the city. He sees it as a way through which people can participate in the changing of society and its urban environment. He believes it is only through protest and revolutions, that substantial changes can be made to the status quo with the ability to potentially redesign the existing power structures.

Donors, such as the World Bank, provide the country with conditional loans. This can entail institutional changes (Mosley, Harrigan, and Toye 1995). Mosley et al. (1995), argue that the World Bank adopts oppressive tactics "to lever financially distressed governments of low-income countries into conformity with its own preferred set of policies for them". The development discourse portrays policy reform as a way to enable aid to be more effective. Collier and Dollar published a peer-reviewed article entitled "How policy reform and effective aid can help meet international development goals" (Collier and Dollar 2001). In this case, these are employees of the World Bank, making scientific publications that supports the World Bank approach. Both these authors are dictating how things 'should' be done in the 'developing world'. This illustrates an example where white western men are creating global knowledge based on their local assumptions and publishing it to become universal truths on how development should be done. However, such approaches take the decision making power away from the countries receiving the aid, and into the hands of those developing these discourses.

The European union has, for example, suspended aid as a political tool to pressure the government to "release some 2,000 political prisoners, lift restrictions on the media and allow independent United Nations monitors to investigate the political violence there" (Chan 2016). Through such actions, the EU claim to sanction the country in respect to

the disrespect of human and democratic rights. However, as stated by MEP “There is a real refusal by African countries to accept lessons on human rights from European countries” (Barbiere 2017).

Burundi is highly dependent on aid. This dependency takes away the decision making power from the local institutions. This decreases the democracy of the system despite increasing equity through an increased access to services and funds. An example of such enforcement is the case of the Economic Partnership Agreement between the East African Community and the EU. Due to Burundi’s refusal to sign the agreement, the European Union threatened that Burundi would lose its development aid from the European Union, despite neighbouring Tanzania arguing that signing the current trade deal would have negative implications for the country’s industrial strategy. As a reaction the Secretary General of the Pacific Group States (ACP) was of the opinion that “aid to the countries must be tied to trade agreements for the mutual benefit of both economic blocs” (Olingo 2016, 1). This supposedly confirms the validity that trade opportunities with Europe are linked to development aid, and the attached precondition that one does not come without the other (Olingo 2016).

On an international scale, the decision making power of the local government and institutions is refrained. Despite the positive effect this has on the dimension of equity, it reduces the rights of the local population to making its own decisions, enforcing certain structures and logics. Often phases of adaptation and local translation are missing, showing the existing oppressive relations that exists between place, knowledge and power (Roy 2015). Through the power structures imposed by the development framework, local knowledge is ignored. Thus as a result of aid dependency, on an international scale. both the decision making power and the influence on the production of space by the Burundian population are heavily restrained.

5.3.2 National Scale: the Vague Distinction between Existing and Perceived Burdens

Even on the national scale the international processes stay influent. Donors are leading the legal, policy and institutional reform. While poverty reduction ideally starts at the basis, re-stabilising the inequality of politics and power, tools to achieve it such as the Poverty Reduction Strategy Papers have in fact “reconfigured (it) in the service of

today's one-size-fits-all development recipes". According to Cornwall and Brock (2005) PRSP is a buzzword used to legitimise development actors. They describe PRSPs as "a development instrument, styled out of pragmatism and backed with economic power" (2005:1049). Within the Burundian context, the PRSPs' framework originated in the international policy frameworks, but were appropriated through so-called "broad based participatory processes [...] including the Batwa, the disabled and other vulnerable groups" (Brachet and Wolpe 2005, 2-3).

Fainstein is a bit of an optimist. She believes that sustained pressure on the system to make it more just, will in the long run, make the system more just (Fainstein 2010). However, not all pressure against injustice leads to more justice. Malcontent pleading for justice reforms during the 2015 elections have resulted in imprisonment, killings or having to flee the country. According to Brachet and Wolpe (2005:7) "Chronic waves of pre-emptive violence and revenge killings, together with the absence of any sense of judicial impartiality and legal accountability, have produced a culture of impunity, deeply ingrained inter-ethnic grievances, and mutual fear and mistrust". They point to the common ownership of small weapons as a source of fear and tensions. They state "Many citizens have lost confidence in the judicial system's ability to provide even basic protection and assume that the courts are corrupt, lack independence, and are incapable of providing impartial adjudication" (Brachet and Wolpe 2005:7). They argue that this "perceived absence of justice and accountability for acts of violence has given rise both to pre-emptive murders (where people are driven to strike before they themselves are targeted) and to revenge killings (in the belief that there is no other way justice will be done)"(Brachet and Wolpe 2005:7). As people are creating their own justice system, true justice is lost.

The strong influence of the international scale seeps down to the national scale through policy and institutional reform. While it takes away a part of the official decision making power, the logics' influence is limited as a result of a lack of implementation and enforcement. This partly explains the large gap that exists between the legal and institutional framework, and the reality on the ground. Fear determines whether or not people will embrace or negate their rights. For example, the fear of prosecution can harm people's ability to freely and openly participate in the country's decision-making processes. It excludes those that counter the presented national discourse. It is not just the individual that sees his participation hindered. The local level is also restricted in its

participation in the institutional reforms and policy reformulations by international economic and political power. Most processes on the national scale seem to be taking a lot of the decision making away from the households, thus heavily limiting their ability to participate in the decision making process. The situation could however be interpreted as follows: as the households are formally given very little rights to the city they try to remedy it by contributing to the production of the space. In this case households are co-producing the system through service provision, plot politics, and system-D. They are thus participating in the technical, social, and political development of the system.

5.3.3 City Scale: Co-producing the System

The technical support of the international donors goes down to the city scale. They are involved in the institutional restructuring calling, for instance, for an inclusion of sanitation in the mandate of the REGIDESO. The city's public institutions do not encourage stakeholder involvement in the decision making processes. The institutions are still considered to be the sole providers of the service. This traditional role is maintained even though the institutions fail to fulfil their mandate of universal service provision. As a result, the city scale consists of many registered and unregistered businesses in addition to public utilities. These different socio-technical manifestations have developed as extensions or parallel to the exiting infrastructures. They contribute to the extension, maintenance and repair of the infrastructure. In this way, they partake in the production of space, thereby taking their rights within the stakeholder composition to participate in the infrastructure development. This is despite being excluded from the formal institutional framework these actors are co-producing the system.

In contrast, the REGIDESO and the SETEMU, have big decision making powers because they are formally responsible for the development and maintenance of the infrastructure. However, as discussed part of this decision making power belongs to the donor community.

5.3.4 Local Scale: A Key Role in Urban Justice

On the local scale, many people are involved in the production of space. Through such processes, people are taking a fraction of their right to the city. Only few options exist to participate in the decision making process, so participating in the production of space becomes a materialisation of that right. Different strategies are used including, bribery and vandalism. As people fight for their rights, they may infringe on another person's rights. As discussed previously, there should be limitations on the rights claimed by one to ensure it does not take away rights from others. Another dimension of influence on the local scale is plot politics. This clearly illustrates an example where the rights of the "one" in this case the landlord, are refraining and controlling the rights of the "others" (less well off) in this case the tenants on the plot.

5.3.5 Closing Statement on Democracy

These dimensions of decision and space making power are affected through processes on different scales. The government is presenting an anti-European narrative and so an increasing resistance can be found to everything that is perceived to be Western. This resistance can be understood as a fight for the right to decision-making power. It is a resistance against the Western domination of local thinking and culture. It is a statement for equality. Burundian thought should not be considered inferior and thus has the right to contest Western thought. This finding can be extrapolated to the discussion on diversity, as the latter acknowledges the importance of including a diversity of logics. This ensures that no streams of thought are oppressed by others. This section on democracy concludes that while all scales show a negative impact on decision-making power, the local, city, and national scales seem to counter the exclusion by strengthening their role in the production of the system.

5.4 Conclusion: A complex Notion of Justice

The water sector of Burundi is faced with the following challenges. It has dilapidated infrastructure as a result of civil war. The water prices at public taps are higher than the prescribed norms, especially in urban centres. There are insufficient resources available and a dependency exists on external funding. The private sector capacity is limited.

There is an increased pollution of raw water sources especially lakes and rivers, as well as an inadequate capacity to plan and implement water sector activities. The city's hilly terrain require an expensive motorised water system, and the public utilities responsible for these services lack the capacities to fulfil their legal mandates.

As has been discussed in this work, equity is to be prioritised. While many efforts aim to strengthen equity in the case study, attention must be paid to those in permanent states of temporary exclusion. For this reason, looking at equity of burdens is key. Discussions on equity can therefore not be separated from diversity. Diversity is presented as a priority on paper, like in the Arusha Agreement, but is not materialised structurally. The case study analysis has highlighted different systems of oppression that should be considered when analysing diversity. These include things like, the landlord-tenant or the socio-economic divides that have been identified. The city has inherited a spatially divided fabric and the 'every one for themselves' mentality is to the detriment of justice.

On the national scale, the government is indebting itself and stuck in a vicious cycle of dependence. The burden of the sector is then divided across numerous ministries and sectorial groups, which have to constantly renegotiate the playing field due to the lack of clarity in the institutional framework. On the city scale, both the SETEMU and the REGIDESO, fail to provide the service they are responsible for. Representatives from both utilities admitted that despite the will to provide these services to the entire urban population, the utilities lack the means to fulfil their tasks. On a neighbourhood scale, it is the tenants who have to follow landlord rules. It seems that sometimes, unwritten power structures and relations ingrained in the sector, play a more important role than those formally recognised ones. This is illustrated by the discussed examples of plot politics as well as the existing fear of political prosecution.

When it comes to maintenance of the infrastructure and back-up systems, the neighbourhood and household scale play an important role. As they are the ones that suffer the most from the consequences of infrastructure failure, they are also the ones involved most actively in remedying these conditions. This has been illustrated by examples of system-D, where the people become actively involved in the maintenance of the infrastructure. This leads to a sector where actors are trying to figure out how to make things work with the situation at hand, both inside and beyond the legal framework. The diversity of actors, in a complex relation to one another, all participate

in the co-production of the service. Justice depends to a large degree on what is not written down, the informal, the loopholes, etc.

Most indicators have certain processes and actors that strengthen and support them. The main exception is the indicator of democracy for participation in the decision making process. Despite a legal framework that calls for this, no actions are taken to implement it.

6 Conclusion

6.1 Research Summary

Based on the assumption that the ethical nature of planning affects the materiality of justice in cities, this work calls for the need to base planning approaches on normative ethical decisions, to ensure that planning practices are not to the disadvantage of the least well off. More specifically, this work encourages planning professional and researchers to evaluate urban systems through a justice lens. Through such evaluations, the ethical implications of the status quo can be better understood and action oriented recommendations can be made. To lead by example, the work takes a post-colonial approach to urban justice debates to translate the 'Just City' concept into a context specific framework of analysis for the case study of household water access and disposal in the city of Bujumbura.

The research answered the following research questions:

1. What urban justice concept can be used to evaluate justice in urban service provision?

The literature review has presented the current state of urban justice theory. While many concepts have been influential in these debates, most have limited their influence to justice thinking. As a result, much of urban justice thinking has stayed detached from the empirical realities of cities. Three main streams of urban justice theories have been identified: communicative theories, 'Just City' theories, and right to the city theories. While communicative theories focus on how planning processes can become more just, 'Just City' theories, as the name suggests, focuses on how just outcomes can be created. While both these streams focus mostly on the planner's role in achieving more justice, the right to the city theory focuses on the role of citizens in achieving justice. The literature review has highlighted that the 'Just City' concept points to a multi-dimensional character of urban justice, as well as to the tensions and trade-offs that exist between the components. There is a need to link justice thinking to action research. This can be done by translating and contextualising an action-oriented framework, like Susan Fainstein's (2010) 'Just City' concept, which is influential in the debates and broadly acknowledged for being Western centric. The work hopes this will encourage future translations of the kind. The 'Just City' framework encompasses the

main urban justice debates through its different dimensions of equity, diversity, and democracy.

2. How can the concept of the 'Just City' be translated in order to provide representative and measurable dimensions of analysis in the case of household water access and disposal in Bujumbura?

Through the translation of the 'Just City' concept, new boundaries are created that can be of value to urban justice thinking in cities around the world. Through a post-colonial critique of urban justice debates and an abductive qualitative analysis of the 'Just City' concept innovation is fostered based on surprising research evidences. Novelties point to something that had not been included in the original theory, yet are found to affect the research problem. Anomalies are when the data directly contradicts the original theory. The identified novelties and anomalies that fed into the translation of the contextualised 'Just City' analytical framework. The main reflections that have resulted from the post-colonial analysis are: the assumed universality of the concept (anomaly); the role of the development discourse (novelty); informality as a status quo (novelty); the need driven nature of civil society in Africa (anomaly and novelty). Additional surprising research evidence from the abductive analysis, includes for example, that there is a need to consider local values and understandings of justice into the framework. This novelty required a contextualisation of the 'Just City' where local understandings of justice such as the traditional juridical mechanism of the Bashingantahe or the country's constitutional and legal call for justice are considered. This highlights the importance of doing justice research in this specific context due to the local relevance of the concept historically and politically. In addition, it pointed to the need of accentuating the idea of justice without exclusion, thus accentuating diversity in the context (which was not as predominant in the original concept development).

The novelty of considering the dimension of equity through both gains and burdens was accentuated by the environmental justice debates. The analysis has shown that this addition is often not considered in infrastructure development discussions because of the existing intent of reaching universal coverage. Transitional solutions are thus considered to be short-term. As such, they are often not prioritised, and considerations on their sustainability are frequently not taken into account. Considering diversity the

novelty is the addition of diversity of logics. This novelty was an outcome of the literature on informality that contributed in the post-colonial critique of the just city concept. Additionally, the novelty that the dimension of democracy should go beyond participation in the formal institutional framework to equally consider forms of participation outside that framework, came from the informality and system-D literature which, in combination with other branches of urban justice debates, brought in the criteria of right to the city and production of space. System-D, a local conceptualisation of fend-for-yourself urbanism, provides a way to analyse democracy in a broader framework where the differences between formality and informality lose relevance.

Finally, while the original concept presents a tool for analysis solely on the city scale, the debates on the development discourse, informality, the bashingantahe, and system-D, all highlighted that processes on other scales of governance undeniably affect justice in urban systems. For this reason, the translation proposed a multi-scalar framework for analysis, which has proven to be of benefit as the most influential scale in the creation of urban (in) justice has proven to be the local scale, which might not have come to light without a translation of the analytical framework.

3. What are the governance structures for household water supply and disposal in Bujumbura?

Both international actors and international frameworks play an important role in the sector. Considering the existing aid dependence, international donors are strongly involved in the financing and the institutional and legal restructuring of the sector. While this brings in funds, strengthening the indicators of equity of benefits and diversity of people, it weakens decision-making power, as it seems to be closed off to the acceptance of diversity of logics. On the national scale, a myriad of actors are involved in the sector but limited capacities (professional, institutional, financial, etc.), make the need clear for the involvement of other actors in service provision such as households and the private sector. This need is equally communicated through the existing legal loophole that gives households a legal opportunity to rely on System-D for the collection and use of water (for non income-generating purposes). The legal framework shows intent to support indicators of equity of benefits and burdens, through its loopholes. The system-D strategies are legitimised and the existence of 'excluded' populations is acknowledged. However, due to a lack of policy

implementation and enforcement, some of these intentions are lost. On the city scale, the REGIDESO and the SETEMU are the public utilities responsible for the provision and disposal of water respectively. As they have, since their creation in the city, never provided universal coverage, there has always been a system of co-provision for these services. Even those that are connected to the infrastructure are provided different types of services (for example: being subjected to rationing or not). This has led to a spatial distinguishing of the “lucky” from the others, as this is linked to the physical infrastructure (be it water or sewerage pipes). On the local scale, households and private business owners are heavily involved in the provision and disposal of water. Processes on this scale, such as what has been termed as plot politics, have a predominant effect on justice illustrating that who might be losers on one scale might be winners on another, further supporting the need for a multi-scalar approach in the analysis, evaluation and proposal of strategic actions to tackling justice. While the local scale has strengthened the indicators for diversity of logics, and participation in the production of space, it has weakened the indicator of participation in the decision making process through plot-politics. It has equally weakened the indicator for diversity of people. As a result of the exclusionary urban fabric of the city, existing of unconnected social-safety-networks and varying access to buffer technologies.

The legal framework presents a supportive discourse for the diversity of people but in reality through the countries past and the diversity of logics it hosts, many processes are countering these efforts. This includes, the traditional structure of the Bashingantahe that is exclusionary in nature.

4. How can household water supply and disposal in Bujumbura be made more just?

As discussed in Section 5.4 (p. 119), there can be no guarantee that the proposed actions will lead to more justice. These are proposed steps based on ethical considerations. The outcomes that may result from them, must in turn be evaluated in order to iteratively keep rethinking and guiding the ethical development of the case study. The following section presents action-oriented recommendations that have come out of this work and propose potential answers to question 4.

6.2 Action Oriented Recommendations

This list of recommendations can be seen as soft reforms. They aim to provide a potential way through which the current system can be made a little bit more just within the socio-political context of the case study under analysis.

6.2.1 Equity

- Pro-poor tariff structures should be redefined. The idea of providing cheaper services to the poor is well intended, but the way through which they aim to achieve this is flawed. The price for water should maybe vary based on other factors than consumption in m³. Additionally, the volume of consumption should be divided by the amount of households that share the tap, before being assigned a price bracket.
- The maximum price that can be charged at kiosks should be regulated and citizens should be informed of this through the radio, newspapers, religious institutions, etc. If people know what they should be charged they will pressure the vendors to follow these regulated prices. Currently water sold from kiosks to the urban poor is one of the most expensive forms of water provision in the city. Yet, even the entrepreneur only gets a profit equivalent to 49 euro cents per thousand litres sold. This means that 100 clients with each a 20 litre bucket would have to be served in order for the income generated to keep the tap manager over the bracket of absolute poverty. Thus, asking these business owners to reduce the prices they charge, does not seem like a viable solution. Through past experience, making the community responsible for these kiosks equally does not present itself as a viable option. In conclusion, the maximum regulated price should be set in collaboration with such business owners and should not be more than the highest formal tariff structure. So, either a higher tariff bracket should be added (for extremely high consumption – gardening, lawn, swimming pool, etc.), this would equally benefit the REGIDESO in their aim of becoming self-sustaining. Or, the maximum price for water at a kiosk should have an upper limit.
- As priority infrastructures are identified that require constant water provision on the centralised network, the same should be done for smaller health centres

that are not connected to the infrastructure, by investments into boreholes and tanks. Small health centres should equally benefit of some sort of prioritisation through investment into reservoirs so they can continue to provide their services even in times of rationing.

- Considering demographics is already a big problem in the country, there should be structures that facilitate access to water for those that do not have the capacity to fetch water themselves. The ability to access water should not be a reason for families to have many children. Introducing the business of pushcart vendors, for example, could be useful as water can then be delivered directly to the households (as is popular in many African countries). Alternatively, technological innovations that enable an easy transport of the water can be introduced. An example of such a technology is the Hippo Water Roller. According to the Siemens Stiftung website the Hippo Water Roller “is the most efficient and appropriate technology” for carrying water (Siemens Stiftung 2018, 1). They state “Instead of carrying in a 20 litre bucket on the head, the weight of the water remains on the ground in a drum. A steel clip-on handle allows the women and children to roll the drum by either pushing or pulling it, depending on gradients. Compared to a bucket, the Hippo Water Roller allows five times more water to be carried home. As an additional benefit, it saves time and while women can use it for other household tasks, children can attend school more often, resulting in better education.”



Figure 23: Hippo Water Roller (Siemens-Stiftung, 2018)

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- Water kiosks should have more taps, in order to reduce the waiting times. Additionally they should be provided with a reservoir, which will not only enable the private entrepreneur to increase his income by selling water during water cuts, but will also increase service times which will equally contribute to decreasing waiting lines and manage infrastructure failures.
 - These kiosks should equally be provided with a minimum of supportive infrastructure to improve the waiting conditions. This includes, for example, adequate drainage (to avoid stagnating water) and roof structures (to protect people from the sun or rain). This could additionally be used to collect rain or drain water, to collect it, and to sell it at a lower price.
 - To balance personal social networks, each neighbourhood should have a type of neighbourhood reservoir, which would be accessible to all households in the neighbourhood in times of infrastructure failure. This way, those who do not have a good friend living down the street, will have an alternative source during water cuts.
 - External investment into the sector should be encouraged through providing safer investment possibilities, through the use of multiple risk reduction strategies (including diversification, combined to safer investments outside the country, etc.), use the potential of the Burundian Diaspora abroad, remittances, encourage investments by local elites, etc.)
 - Investments need to be made into public sanitation facilities across the city.
 - Restructuring and clarifying the roles of the actors in the institutional framework would enable for more efficient work of the sector and reduce opportunities for corruption.
 - Priority has to be given to poverty reduction in the country, as poverty itself can be seen as a trap that worsens the situation for the least well off. This includes measures such as the strengthening of social safety nets and the banking of the unbankable (as stated by Moyo 2009).
 - People should be educated and informed on decentralised and low-cost water treatment technologies (boiling the water, chemical treatments). Commercial filters should be easily accessible.
 - Communities should be encouraged to maintain or construct their own infrastructure through knowledge sharing platforms and potential discounted connections from the public utility.

6.2.2 Diversity

- Rainwater harvesting must be encouraged on a policy level for uses such as laundry, toilet flushing, cleaning the house and watering plants. It is being done by some but not by others despite its availability.
- There is a necessity to explicitly require the involvement of people of all origins, ethnicities, clans, religions, and political parties in addition to the gender dimension that is already included in the existing legal framework.
- The policy loophole that exists in relation to household water provision makes that all strategies are recognised and legally accepted. This encourages diversity in a very prominent way.
- The policy framework should acknowledge the existence of different wastewater disposal logics. It should distinguish between black-water and grey-water. It should call for more on-plot treatment and disposal of grey-water. Additionally, it should call for a reduction of household black-water production, by for example encouraging the use of dry-toilets.
- Inherited or imported ideals and models should not be simply reproduced or rejected, but rather should be evaluated from a justice lens to reflect on whether their implementation would be to the benefit or disadvantage of justice.
- Current restructuring in the system of the Bashingantahe should continue to make the system more inclusive. They should represent people of every ethnicity, gender, social class, rural/urban, etc. The bashingantahe system should acknowledge the intersectionality of the Burundian population, and offer a structure that would not be further increasing the divide that exists in the country.
- In the re-structuring of the sector, specific attention should be given to issues of inclusion. Ensuring that no 'identity' feels they are unfairly excluded or disadvantaged by the new structures.
- For those fetching water from unsafe sources, information boards should be available informing them of affordable water treatment strategies.
- Considering the city's strong exclusionary past, extra efforts have to be made to ensure inclusion. While this intent has already been proclaimed in the legal framework, many of the processes and logics creating the city have not yet implemented these wishes.

6.2.3 Democracy

- Originally the research assumed that with further work on justice, it might be beneficial not to use the term democracy, as it was a concept that was enforced onto developing countries through the development discourses. However, having completed the research, the work encourage the use of the term democracy as it has in fact been incorporated and transformed to fit to the reality of these countries. What democracy is has long come out of the bounds of traditional democratic theory. Democracy does not belong to the 'West', and using it as a dimension of justice can bring insights into the variety of democratic systems that exist, and their relation to the idea of 'rights to the city'.
- There is a need to set specific participatory requirements within the formal framework, so that it can be evaluated accordingly.
- Private entrepreneurs such as tap managers, manual pit emptiers, etc. should be actively recognised as stakeholders in the sector and should be included in the official participatory processes.
- More participation should be included in the planning process. This could for example also be used for: the selection of tariff structures, long-term infrastructure development plans, crisis management in the sector, etc.
- Certain limitations must be put on the power of the tap owners through a policy formulation that gives certain rights to the users. For example, tap owners must allow a minimum of daily access to the tap.
- Donors should be one of the many actors in a communicative process. They should be open to the idea (like every stakeholder in the process) of amending their requests, making compromises and listening to the voices of the other stakeholders.
- It should not be possible for donors to suspend funding or grants that have already been approved. Of course, the donor may decide not to re-engage if they are unsatisfied with the collaboration. At the end of the day, the mere fact that donors have money, and that the sector is dependent on such external investments, puts the donors in a certain position of power, this should be limited by conditioning the relationship through such general conditions of embankment.

6.3 Closing the Loop

In order to close the loop, the work now presents which insights a post-colonial critique of the 'Just City' can bring to current urban justice debates. A post-colonial critique enables the modification of the concept and a discussion between concepts that are traditionally separated into different debates. It identifies some of the concepts limitations and proposes alternative interpretations of the presented arguments. The work argues that 'Just City' thinking and the use of justice as a normative ethical framework, can be of value across borders. It presents an approach that can help ensure planning decisions and goals are not to the disadvantage of those less fortunate. In order to achieve that, what justice consists of, the local understanding and value for justice as well as the relationship and composition of the different dimensions of justice must be contextually grounded. This can be achieved through the translation of a selected urban justice concept. First, its biography must be traced, to become aware of its locatedness. Once that has been done, its limitations can be identified through a post-colonial critique. Such limitations could be similar to the ones identified in this case: assumed universality, detached from the development discourse, blind to informal processes, based on false assumptions – such as on the nature of civil society. Through an abductive qualitative analysis identifying potential extensions and limitations to the concept one can foster theoretical innovation. This can contribute to the global production of knowledge through an ordinary city framing.

When it comes to the 'Just City' concept, this work contributes the following insights. Due to a strong influence and relational link of different scales, a multi-scalar approach to urban justice is encouraged. The work has highlighted the benefit of such an analysis by pointing to the primordial role of the local and international scales, which in this case even seem to weigh-in heavier on urban justice than the city scale. Through contextualised indicators, the complexity of justice is accentuated, this supports one of the main critiques of urban justice theory, that based on 'justice for whom?', 'through which dimension?', 'with regard to which challenge?'; very different conclusions can be made. This further calls for the need to look at the most pressing challenges and have a clear explanation for which indicators are being used and why they are being used.

Another insight that can contribute to urban justice debates is the effect of the development discourse on broader structural forces that affect justice in cities. As a major part of the development discourse has been generated in the West it accentuates

an existing geography of knowledge production. This knowledge, once produced, then provides the ‘West’ and international institutions the power of decision-making in aid dependent countries. This highlights the need to consider an international scale in an analysis of justice as it too has a critical role on the materialisation of (in) justice on a local scale.

Additionally, this work calls for ‘Just City’ debates to acknowledge the key role of processes outside the formal framework and the existing complexities of service provision when analysing justice in an urban system. The work argues that a simple division of the formal and the informal is impossible as the relationship between formality and informality is neither absolute nor simple. It is a complex and dynamic relation that continually changes and evolves under the effect of various forces. For this reason the value of the concept of system-D is accentuated, as it enables to go beyond the formal/informal dichotomy and equally steps away from the hierarchy where the one might be considered better than the other. Through such a framework, the ethical implications of such processes and strategies can be understood. In household water supply and disposal in Bujumbura, system-D has been seen to strongly benefit equity of access to services but often at the cost of affordability, water quality and pollution. While certain system-D strategies should be facilitated, others should be eradicated. While system-D sometimes provides affordable short-term adaptive strategies, the transformative capacity of large-scale infrastructure planning is lost.

6.4 Recommendations for future research

The current work has provided an example of how the ‘Just City’ concept could be used to come up with action-oriented recommendations in relation to household water access and disposal in Bujumbura, Burundi. While this proves that the concept can be translated and specific measurable indicators can be identified, it opens up the possibility for varied similar research. The work calls for research on different types for urban systems in different regions of the world. These can then reflect on the discussion that has been presented here and potentially build a more differentiated conceptualisation of justice. Another factor such research could contribute to is that of action. This type of research can be a bridge between academia and practice providing potential ways forward for a certain urban system in the specific contextual socio-political framework of each case study. As naive as it may sound, this work hopes to

contribute in developing further work that aims at making the world we live in a little better more than just one step at a time.

The work has equally highlighted varied insights into processes that do not seem to be part of the debates but have been of significant importance in this specific case study. This includes: the concept of *System-D*; the notion of *plot politics*; and the notion of the “lucky” in relation to access to conditions of exception to state enforced rationing.

These concepts describe processes that are probably of importance in many other socio-technical systems in countries across the globe, and more research should be done to understanding their working. It would equally be important to link them to similar or related concepts and debates.

6.5 Closing statement

While action oriented recommendations have been provided, and empirical data on a sparsely represented case study presented, much work still has to be done in the representation of the case study of Bujumbura in urban debates.

This work has focused on justice in relation to water provision and disposal, but a similar analysis of the provision of electricity in the city could provide important insights into the physical dimension of injustices in the city’s fabric. The nexus between these two infrastructure systems should be better understood to get a deeper comprehension of the effect they have on one another. Both these systems are in fact socio-technical systems where the social dimension cannot be separated from the technical one. In addition also questions of politics on different scales, as illustrated in this work are of importance.

There is a need for more research on Burundi to guide decision-making in the country. As presented in this work, despite the end of colonisation there is still a colonisation of the mind. The following extract from Bob Marley’s Redemption song seems to provide a good closure to this work. Through it, we can decolonise the oppressive structures that exist in existing geographies of knowledge production.

“Emancipate yourselves from mental slavery;

None but ourselves can free our minds.”

Bob Marley- “Redemption song”



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List of Interviews

- Interview 1, Household in Zone of Kanyosha, Resident & Tenant, March 2017
- Interview 2, Water and Sanitation Expert, Bujumbura, March 2015
- Interview 3, Human Geography Professor at the Université du Burundi, Bujumbura, March 2017
- Interview 4, Administrator of the Area, zone Buterere, February 2017
- Interview 5, University du Burundi, Professor of the Human Geography Department, Bujumbura, March 2015
- Interview 6, GIZ, Responsible for the Sectorial Programme on Water. Planning and investment in Water and Sanitation services in Urban Areas, March 2015
- Interview 7, SETEMU, Chief of Planning Studies, Bujumbura, March 2015
- Interview 8, Cell Representative, zone Buterere, February 2017
- Interview 9, Household in Zone of Buterere, Resident & Tenant, February 2017
- Interview 10, REGIDESO, Infrastructure Monitoring, Bujumbura, March 2017
- Interview 11, REGIDESO, Programme Coordinator, Bujumbura, March 2017
- Interview 12, REGIDESO, Representative of the Laboratory, Bujumbura, March 2017
- Interview 13, University du Burundi, Professor of the Biology Department, Bujumbura, March 2017
- Interview 14, Household in Zone of Bwiza, Bujumbura, March 2017
- Interview 15, Household in Zone of Buyenzi, Resident & Tenant, March 2017
- Interview 16, Household in Zone of Buyenzi, Resident & Tenant, March 2017
- Interview 17, PROSECEAU URBAIN, Director of the Sectorial Programme in Water and Sanitation, Bujumbura, March 2015
- Interview 18, Cabinet of the Minister of Energy and Mines, General Director of Hydraulic Infrastructures and Basic Sanitation, Bujumbura, March 2015
- Interview 19, Household in Zone of Kamenge, Resident & Tenant, February 2017
- Interview 20, Household in Zone of Mutanga-Nord, Resident & Tenant, March 2017
- Interview 21, Household in Zone of Gihosha, Resident & Land owner, February 2017
- Interview 22, Household in Zone of Mutanga-Nord, Resident & Land Owner, zone Mutanga Nord, March 2017
- Interview 23, Household in Zone of Gihosha, Resident & Tenant, March 2017
- Interview 24, REGIDESO, Sales Attendant, Bujumbura, March 2017
- Interview 25,

Household in Zone of Kamenge, Resident & Tenant, February 2017

Appendix

Research Permit – February-March 2017



UNIVERSITE DU BURUNDI
Faculté des Lettres et Sciences Humaines
B.P. 5142
BUJUMBURA, BURUNDI

Bujumbura, le 20/02/2017

N/R : 2017/FLSH/005/G.NI

Objet : Demande d'accès à la recherche

Sur terrain pour une étudiante

A Monsieur/Madame le Chef de zone
Buterere

à BUJUMBURA

Monsieur/ Madame le Chef de zone,

Nous avons l'honneur de nous adresser à votre haute autorité pour solliciter l'accès à la recherche sur terrain à Madame Anaïs De Keijser qui fait son travail de thèse sur l'eau et l'assainissement à Bujumbura.

En effet, Monsieur/ Madame le Chef de zone, ladite étudiante inscrite à l'Université Darsmatadt en Allemagne et qui a choisi de travailler sur la ville de Bujumbura est encadrée localement par un collègue de notre Faculté, Professeur René MANIRAKIZA, dans le cadre des échanges interuniversitaires. Nous vous saurions gré de lui accorder l'accès aux données et à la recherche sur terrain pour lui permettre d'avancer dans sa recherche.

Dans l'espoir d'une suite favorable à notre demande, Veuillez agréer, Monsieur/ Madame le Chef de zone, l'assurance de notre considération distinguée.



La liste nominative desdits étudiants est la suivante :

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Author Biography

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Anais De Keijser is an urban researcher focusing on issues of social justice in infrastructure development, post-colonial theory, and decentralised resilience. Additionally she has been involved in research on housing of arrival within different geographical contexts. She started working on her doctoral thesis at the Fachgebiet Entwerfen und Stadtentwicklung in January 2015. This within the Graduate School of Urban Studies under the framework of “Urban Infrastructures in Transition: the Case of African Cities”. In parallel to writing her PhD, Anais is also working as the Program Manager of the interdisciplinary Masters in ‘International Cooperation in Urban Development’ at the Faculty of Architecture at the Technical University of Darmstadt. She holds a Bachelor's degree in Architectural Engineering from the Vrije Universiteit Brussel and a Master's degree in International Cooperation and Urban Development from the Technical University of Darmstadt.