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Rethinking the Governance of Household Water Supply in Bujumbura: Analysing Informality through a Just City Lens

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In her 2010 book, *The Just City*, Susan Fainstein evaluates justice in her case-study cities (Amsterdam, New York and London) through a three dimensional analysis of justice (Equity, Diversity and Democracy). Her approach, popular among Western scholars, cannot be replicated as such in disadvantaged cities such as Bujumbura because of the important processes happening outside the formal institutional and policy frameworks. The main claim of this article is that justice cannot be evaluated in such contexts without taking into consideration the informal. Through a multi-scalar analysis of informality in household water provision in Bujumbura, the article assesses the importance of informality on the different dimensions of Fainstein's Just City concept. Informality has to be included in the considerations if the concept of the 'Just City' is used as the analytical lens through which to make policy recommendations. This analytical lens then enables us to evaluate justice in - and rethink the governance of - urban systems with high degrees of informality, such as that of household water provision in Bujumbura.

Keywords: governance, just city, informality, water supply

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Introduction

In Bujumbura, Burundi's capital, the governance of urban systems is a complicated task. The city faces poverty, climate change, political tensions and a lack of basic services and it struggles with questions of justice on a continual basis. This is equally the case in relation to household water provision, despite statistics showing figures of access to the infrastructure as high as 80-98% (ISTEEBU, 2014; Manirakiza, 2012; Republic du Burundi, 2009; USAID, 2015). Many severe challenges can be identified. Some of the most striking challenges identified during the field research include: that there is insufficient water to meet the demand of the citizens; there are frequent breakdowns of the infrastructure due to a lack of maintenance and repair; as well as limited available resources requiring people to use alternatives to the centralised infrastructure. As marginalized societies carry a heavier burden to these challenges, questions of justice gain the foreground. Who wins and who loses in this system and what can urban practitioners and professionals do to try and lessen the disadvantages for those already less well off.

The concept of the Just City as developed by Susan Fainstein in her memorable 2010 book, *The Just City*, provides a useful analytical tool enabling the formulation of recommendations to reduce the extent of injustice in urban systems. But as she herself states "approaches to justice in the developed world cannot be simply reproduced in poor cities" (Fainstein, 2010) as the local socio-political and historical contexts have to be considered. Like supporting authors such as Roy (2005), this paper reinforces the argument that informality is of primordial importance when considering justice in cities of the South. It is currently unknown exactly how informality affects justice in cities. Therefore this article attempts to assess the effect of informality on the different dimensions of Fainstein's Just City concept (Equity, Diversity and Democracy), through a multi-scalar analysis of household water provision in Bujumbura. Due to the fact that the everyday politics involved in the provision of water vary at different level of society, the analysis distinguishes between the household scale, the neighbourhood scale and the city scale.

This article is structured in the following way. First, it introduces the debates around the Just City accentuating the gap in relation to informality. It then describes the research design as well as how the data was collected and analysed. The subsequent section describes the formal policy and institutional framework in relation to household water provision. The core paragraph relates informality and the dimensions of Equity, Diversity and Democracy at the household, neighbourhood and city levels. Based on this analysis the article then suggests some action oriented recommendations in relation to household water supply in Bujumbura.

Postcolonial Critique on the 'Just City'

Critical post-colonial academics demonstrated that many urban theories are unable to grasp informality or to adapt to local realities of the 'South' (Pieterse, 2011; Robinson, 2002; Robinson & Roy, 2015; Silva, 2012). They argue that existing urban concepts and theories are built on 'Western' knowledge and case studies, limiting their usefulness in such contexts (Watson, 2002). In her articles on *the usefulness of normative planning theories in the context of sub-Saharan Africa* Vanessa Watson (2002) questions the universality of three such concepts: communicative planning, the Just City and multisectionality. One of the main shortcomings she identifies is the absence of the consideration of informality (Watson, 2002). She highlights the importance of informality by describing the relationship between the state and citizens in sub-Saharan Africa as under-codified and under-regulated. Where each is

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dependent on complex processes of alliance making and deal breaking, and particularly resistant to reconfiguration through policy instruments and external interventions (Watson, 2002). Informality is often identified as one of the main challenges of urban planning in African cities (Silva, 2012). Roy (2009) argues that a high degree of informalization in an urban system creates 'the territorial impossibility' of justice, highlighting that the aim of this analytical process is not to create territorial justice but rather to slightly lessen the existing territorial injustice. Both Watson and Roy argue that informal processes have direct implications in terms of poverty, inequality and insecurity, but also for other aspects of social and political life. The fact that informality has become the norm rather than the exception in relation to city development in many cities around the world accentuates the importance of considering it within discussions on the Just City and within the broader debates.

Within urban informality debates, informality is often seen to reside either in filling the void left by the formal systems or as an inherent part of the formal system. Roy (2005) argues that while planning for social justice in cities, it is crucial to consider urban informality and the processes and structures outside the planner's realm of control (Roy, 2005). This, in part, as informality is produced by the state, means that there is a need to confront urban system builders on how informality builds up in the system and the consequences it has on justice.

Susan Fainstein's Just City framework offers action-oriented guidelines to planners on how to achieve more just cities. It focuses on both process and outcome and points to the complexities of justice, its multidimensional character and the tensions and trade-offs that exist between the different components of justice. She identifies equity, democracy and diversity as the three main components of justice through which urban policies and systems can be evaluated. Due to her choice of 'wealthy, formally democratic Western countries' (Fainstein, 2010, p. 5), one of the main limitations of her work is the context dependency of the list of recommendations she develops. Hence, like many other 'Western' concepts the Just City cannot escape a post-colonial critique. However, despite the context dependency of the policy recommendations Fainstein argues that planning processes and practice around the world should be devoted to justice. So, a contextualised adaptation of the concept can enable the formulation of case and context specific recommendations. In order to provide such case and context specific recommendations the paper will first analyse justice based solely on the formal policy framework. Then it will analyse the effect of informality on justice in order to compare the two. The following section discusses the research design and methodologies, in order to give an overview of how the data was collected, interpreted and analysed. It will also discuss the scope of the research in addition to its limitations.

Research Design and Methodology

Strength of a single case, in depth analysis

An in-depth analysis of a single case allows the combination of a variety of sources, types of data and research methods (Denscombe, 2007). Through document analysis and semi-structured-interviews with selected stakeholders, the research aspires to understand relationships, experiences and processes occurring in the provision of household water in Bujumbura. This way an in-depth understanding of informality and its effect on the different dimensions of the just city can be achieved. This then enabled the formulation of policy recommendations.

The argument presented in this paper is constructed as follows. First the 'just city' analysis is carried out at the three different levels using the formal elements at hand: the national water

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law (PNEau) and identified stakeholders. Then the evaluation is repeated based upon the day-to-day experiences of the stakeholders. Then finally the paper discusses the gap between the two and how it relates to informality.

On the household level data were collected through in-depth interviews in 'problem areas'. The households were selected in two steps. First 'problem areas' were identified that could provide the most extreme cases of dependence on informal systems to access water. This was done with the help of a professor of human geography that had done research on water access in the city. Once the general areas were identified, voluntary households sought and semi-structured in-depth interviews conducted. At the neighbourhood level the collected data from the households was complemented by semi-structured interviews with the kiosk and standpipe managers, local sales persons as well as 'Chef de Zones' - the local representatives on the administrative level. The city level analysis leans on document analysis of the national water strategy and official reports, complemented by semi-structured expert interviews with four representatives from the city's water authority (REGIDESO) with varying responsibilities.

In total 18 household and 16 expert interviews were held during field visits in March 2015 and February-March 2017. While the household and neighbourhood levels bring insights into informality as a citizen's strategy to fill the void left by the formal system, the city level brings insights into the state's own informality. The latter is used as a political tool through which even the state can by-pass the formal requirements (this 'informality of the state' has been widely discussed by Roy (2009)).

The limitations of the approach

This research aims to illustrate the effect of informality on justice in order to support the claim that informality cannot be ignored in discussions of urban development. The specific terms used in this paper are now presented. Considering the considerable debate on informality, in this work it is considered in relation to the formal policy framework, in this case the PNEau. This provides a contextualised definition of informality. The only informality under analysis here is in the provision of household water in Bujumbura. This limits the work solely to the study of the provision of household water, but can contribute to the larger discussion on the effect of informality on (evaluations of) justice. Justice is evaluated through a Just City lens and its dimensions of equity, diversity and democracy.

For Fainstein, equity refers " ... to 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... It should be redistributive, not only economically but also, as appropriate, politically, socially, and spatially." (Fainstein, 2010, p. 36). This paper makes a slight adaptation in this regard as it looks at equity not only based on benefits but equally on burdens. This distinction revealed to have an important role in the evaluation of justice in the case study. Crucial in this regard is the distinction between equity and equality. Where equality offers equal distribution, equity calls for appropriate and fair distribution, to the advantage of those most in need (Fainstein, 2010).

Diversity is defined as the recognition of all city users within the space of the city, regardless of their cultural, gender, socio-economic, religious differences (Fainstein, 2010). The third dimension, democracy refers to the people's involvement in the decision making process (Fainstein, 2010), thus making an analytical distinction between process and outcome. Fainstein (2010) cites Corburn (2005) who states that institutional citizen participation

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increases the information available to policy makers by providing local knowledge, it makes decision making more democratic and open but not necessarily more equitable. This is why the different dimensions of justice must always be considered in relation to each other. Within this work the concept of democracy can be captured by Lefebvre's 'right to the city' concept (Fainstein, 2010). It goes beyond the participation in the decision making by including the participation in the 'production of space'.

The Policy Framework

In regards to household water provision, and water supply in its broader context, the Ministry of Energy and Mines (MEM) through its directorate General for Water and Energy (DGEE), heads the policy formulation and the administrative functions of the central government (USAID, 2015). The Water and Electricity Authority (REGIDESO), is responsible for service provision. It is a public utility with autonomous legal and financial status that operates under the supervision and with the support of the MWEM (USAID, 2015). REGIDESO is responsible for the catchment, treatment, and distribution of water in urban areas (USAID, 2015). The main legal document leading the water provision sector is the national water law (PNEau). This document is in turn supported by documents such as the national water code (2012) and the national water strategy (2012) that provides an action plan as to the implementation of the water law. The PNEau was published in 2009 and represents the national vision as defined by the Burundian Government (Republic du Burundi, 2012, para. 2). It is a simple document made in such a way that is comprehensible for all interested actors (Republic du Burundi 2009, p.6).

When analysing the document through the dimensions of the Just City, we see that equity is presented as a specific guiding principle of the law while both democracy and diversity are not clearly portrayed within those principles. The guiding principal of equity in the law states "the different categories of the population have to be treated in an equitable way for access to drinking water. This equity has to be searched in the distribution of water resources, their economic use as well as the measures taken for the protection and management of the resource." (Republic du Burundi 2009, p.47). In addition to this clear prioritisation and focus on the notion of equity, the dimension is equally affected in a positive sense by other principals in the law. This includes for example the principals of political will, subsidiarity and sustainability, which highlight the role of the authorities in achieving equity. In regards to diversity, and the recognition of people, the only statement that supports it is equally that of equity where they refer to "the different categories of the population". This is a very broad and unspecific categorisation of people that fails to really highlight the importance of encouraging diversity in the governance of such a system. The dimension of democracy is not touched upon, however the document does present a principle of solidarity where citizens are expected to actively participate in the provision of water "in order to be able to guarantee access to the resource to the populations in the most disadvantaged zones" (Republic du Burundi 2009, p.47). On the one hand this principal provides more democracy, as people are considered to be active participants in the provision of water. This aims for more equity and diversity, as the disadvantaged zones are recognised and considered within the policy formulation. On the other hand however, the principal creates a structure that fosters inequity as the disadvantaged zones have to rely on 'solidarity' while the rest of the city benefits of 'political will' and 'subsidiarity'.

The national law's main goal is: "to guarantee in a sustainable way the provision of water to all users through a harmonious development of the national water resources" (Republic du Burundi 2009, p.48). The goal is formulated as a utopic best-case scenario, in which there

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would be absolute equity and inclusion but makes no reference to the participation of citizens. Only one specific sub-objective supports diversity, “insure to the poor and other vulnerable categories, access to water and sanitation services”. Through the formulation of the goal, the water law prioritises equity above the other dimensions of the just city, followed by diversity through a focus on the poor but not emphasising the multiple forms of oppression that might be marginalizing people. Democracy is only discussed in regard to the participation of people in the management and solidarity in the system. The sub-goal number 6 presents the concept of “improving the conduct of the population in relation to good practices of water and sanitation management”. Again the importance of the involvement of the citizens is highlighted.

The other important document within the policy framework is the national water code of 2012. Between the publication of the water law in 2009 and the water code that is meant to accompany the water law, key changes can be identified. Women are now invited to participate in the decision-making, and new actors are invited to participate in the implementation. These additions illustrate changes in the dimensions of diversity, as gender is recognised as a potential layer of oppression. This is especially important because woman make most decisions about water on a household level. As well as in the dimension of democracy where “the water management has to be based on a participatory approach integrating users, planners and decision makers at all levels.” (Republic du Burundi 2012, p.5). Another change is the formulation of the principle of solidarity where now “the population is as the centre of all actions in relation to the management and use of the resource. Measures have to be taken in order to enable the poor and other vulnerable groups to access water and sanitation at an affordable price.” (Republic du Burundi 2012, p.3). This further stresses the role and importance of citizen participation in the system. Remarkable in this new formulation is that the code omits to state that the poor should have access to drinking water and sanitation services, but simply water and sanitation. They do not have right to the service but merely to the resource. This point is also pointed to in Article 84 of the code:

“No water collection or rejection, except for those specified in this code, can be practiced in the public hydraulic domain without authorisation, concession or delegation coming from the ministry having the responsibility of water in its attributes. Nonetheless, the collection and use of water from the public hydraulic domain for domestic purposes can be freely practiced.” (Republic du Burundi 2012, p.35). This final sentence makes a state of exception for water provision for domestic use. This creates a policy loophole in the policy framework as the collection and use of household water is no longer framed. This creates room for alternative strategies to service provision for household water.

Considering the differences between the national water law and the national water code it has to be said that what would be informal in relation to the one might not be informal in relation to the other. Take digging and collecting water from a borehole on one’s plot for household use. This is considered informal based on the national water law, but not so based on the national water code. This illustrates the level of complexity as both these policy documents are currently valid, which means a practice can be considered as formal and informal simultaneously. More apparent oxymorons will be presented in more detail in the following section. While the national water law does not consider the systems of oppression that exist, beyond that of poverty, the national water code does make an explicit point of also considering gender as a dimension of diversity. In relation to democracy the national water code also takes a leap forward as they explicitly call for the need to have participation at all levels, however nothing is said about what this participation should entail or how it should be

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assured. In addition it solidifies the concept of solidarity and responsibility of the citizens to be involved in the provision of water, with a special eye shut in regards to household water provision and use. Overall these documents seem to preach justice, equal rights for all and extra support for those in need, but the structural distinction that has been formulated in relation to household water provision where the policy framework makes a state of exception, and the poor quarters where solidarity and active citizen engagement are expected to take a more prominent role brings up questions as to whether the policies structurally enforce inequality or if they are a tool to provide more equity. The policies enable both and so it depends on how the policies are implemented on the ground.

The following segment focuses on the day-to-day practices and materialisation of the existing policy framework into the urban fabric. As certain aspects are enforced and others legitimized, the analysis contributes to the local evaluation of justice in the case of water supply in Bujumbura.

Analysing Informality through a Just City Lens

As was repeatedly pointed to in the expert interviews informality is and can be found at various levels and in various processes of the system. Studying informality enables a better comprehension of the reality on the ground and contributes to rethinking the governance of the system; which can then help to bridging theory and practice in urban governance research. Urban governance theories mainly aim to better understand the complex realities of cities, or aim to improve these realities. The gap between theory and practice is not equal everywhere. It varies, not only between theories, but equally between the contexts in which they are being used. Postcolonial critics have pointed to this problem and have called for the need to construct theories “which reflect the experiences of a much wider range of cities” (Robinson, 2002, p. 532), the need to address the geographies of theories (see authors such as AbdouMaliq Simone, Ananya Roy, Garth Myers, Jennifer Robinson). Besides extending the theories to be of wider relevance, this work supports that governance theories can be strengthened through a better understanding of the role of informality in urban governance.

In order to improve the understanding of the complexities related to the provision of household water in Bujumbura the analysis will focus on three different levels: the household, the neighbourhood and the city level.

The household level

The household plays an important role in relation to water provision. Considering infrastructure as a ‘divination tool’ (see Trovalla and Trovalla, 2015) describes the situation well. Where inhabitants are constantly trying to discern the logics behind the unreliable water flow “the unpredictable infrastructure also becomes a system of signs through which residents try to understand issues beyond those immediately at hand” (Trovalla & Trovalla, 2015, p. 332). 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 1, March, 2017). Illustrating how “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, p.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 in order to

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adjust the coping strategy to the fluid changing contextual –service provision vs. failure- 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 2, February, 2017).



Figure 1. Steel case and pad-lock to control water availability to tap-users. *Source:* Author's original

Beyond the household involvement in reading, interpreting, predicting and planning the infrastructure and how to deal with it, households are equally involved in another dimension of the service, the access. Some have it, some not. Those that have access can be further split in function of the ownership. As one interviewee stated “the tenants have to follow the law of the owner, that is just how it is” (Interview 3, March, 2017). In this case all 10 households on this specific plot in Buyenzi had to work around the rationing schedule introduced by the owner. Water from the tap could only be accessed every second day very early in the morning. If a household would have gotten through their stock of water they would need to arrange themselves with other households on the plot in order to bridge their needs until the following schedules tap opening (Interview 3, March, 2017). This cannot be considered merely an exception as this was equally the case for two other households in this condition (a tap on the plot shared between different households). Figure 1 shows how a steel cover and padlock are used in order to be able to control whether or not water comes out of the tap on the plot. For households with no direct access to water, three main strategies have been identified. These are: bringing water to the house, bringing household tasks to the water and collecting, storing and (re)using available water on the plot. When it comes to bringing water to the house all household members can participate and depending on ones physical strength different strategies can be applied. “Woman and children will carry the water on their heads (...) if it is a strong man that goes and gets the water then he can carry that by hand.” (Interview 4, February, 2017). Depending on the path between the plot and the water source different transportation modes can be identified.

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Figure 2. Bike carrying 20L water cans for household consumption.
Source: Author's original

Certain household chores, particularly laundry, are very water intensive and thus certain households prefer to bring the chore to the water. This decision depends on certain external conditions, as expressed from an interviewee from Kanyosha neighbourhood “During the rainy season we do not use the water from the Kanyosha River, but during the dry season it is more or less clean and we use it for laundry and kitchen utensils. We bring the dirty clothes and utensils to the river with a basin and then clean them there.” (Interview 5, March, 2017). However some have described such practices as rural habits, slightly backwards for the modern urban lifestyle they are now a part of. “We have abandoned such practices but there are some who still go to the river and only get water to drink from the public taps.” (Interview 2, February, 2017). This can be interpreted as the materialisation of people’s marginalization as they are unable to conform to the urban livelihood they are intertwined in. As described by one interviewee “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 6, February, 2017). This interviewee’s statement is quite interesting as it highlights the fact that certain decisions are made not merely based on context and knowledge but equally on habit/tradition –how things are done- as well as the lack of viable alternatives that are affordable, available and known.

The neighbourhood level

The Bujumbura authorities adhere to a policy of decentralisation. The zone – a quarter with 50-100.000 inhabitants - is gaining importance within the governance structure. Each zone is further divided into sub-zones, which in turn are sub-divided into cells. During our visit of both the Buyenzi and Kamenge zones, we were informed that each sub-zone has 5 public taps (Interview 7 & 8, February, 2017). Public taps play an important role in neighbourhood water provision. They provide people with water from the REGIDESO. Management of the taps evolved over the years. Initially the water was free, and the taps maintained by the authorities. When that system collapsed, management was handed over to the community. Today private entrepreneurs have taken over that responsibility. The owner of the tap registers at the REGIDESO as a client with the task of re-selling the water at the price of 50 Fbu (2 eurocents) for two water cans of 20L. Based on the current research a positive conception of the governance structure exist as two interviewees stated, “When it was public, not under the responsibility of a private person, people would waste and not maintain the tap

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well, so we had water cuts much more often.” (Interview 5, March, 2017) Or “Since they changed the system the service has been very good, the prices have not changed and if the tap needs to be replaced this always happens very fast.” (Interview 4, February, 2017). All interviewed households as well as tap managers have confirmed that that set price of 50FBu/2. This with one remarkable exception in the Buterere zone where a tap is selling water for 20 FBu/water can.

Some households access water through other households, two interviewed households found themselves in this situation in which they had to pay 100 FBu/20L water can, which is four times the usual price.

Certain water meters are in state of long-term malfunction and they are billed on approximate calculations rather than specific water use. This offers opportunities through which to become a particular water sales point. Looking for a failure and turning it into an opportunity is popular at the neighbourhood level. Leaks are golden opportunities. Figure 3 shows a water leak used as a free water source. Young children use the water for household chores as well as to bath in and play in.



Figure 3. Water leak as an opportunity.
Source: Author's original

Solidarity is the very important security net at neighbourhood level. 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 don't. And when she has a cut she sends a boy here to fetch some water.” (Interview 9, February, 2017) This testimony points to existing local knowledge of the water network as, ‘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.

The city level

The REGIDESO works on a city level. As there is insufficient water in the system, the REGIDESO has developed rationing strategies. Areas of strategic importance are not

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subjected to water cuts. This includes universities, hospitals, pumping stations, the radio and the presidency (Interview 10, February, 2017). Households connected to these lines are considered “lucky”. Nevertheless, they might have to pay for their “luck” as plots in strategic areas tend to be more expensive. Yet, despite this prioritisation it became clear during the field visit that these areas also suffer the consequences of lacking maintenance and repair structures. This was for example the case in Mutanga North, where despite being located on the line of the military hospital and thus being one of the “lucky ones” the line had had no water for 5 days in the two previous weeks (Interview 10, February, 2017).

Electricity shortage is yet another factor affecting failure of the water infrastructure. The distribution system relies heavily on electric pumps to service water reservoirs all over the hilly city. From there the water is distributed to the households through a gravity based system. If the reservoirs are not refilled in time, due to longstanding electricity cuts, households on that line can be deprived from water. As the infrastructure nodes of the REGIDESO are considered of strategic importance, these electricity cuts usually do not last too long. In this sense, the reservoirs do not serve only as a start of a gravity-based local distribution system but also as a storage facility that enables the area provided by that reservoir to have a buffer in case of failure. This strategy of stocking plays an important role in the coping strategies at different levels, household, neighbourhood as well as city.



Figure 4. Water Stockade on a neighbourhood (left), household (right-top) and city level (right-bottom) Source: Author's original

Despite the REGIDESOs formal institutional set-up, it lacks the professional, resource and infrastructural capacities that it would need in order to be able to fulfil its role. Some of the following examples illustrate how the REGIDESO is working with what they call “*des moyens de bord*” the available ‘*brim resources*’ (Interview 10, February, 2017). In the first image we see how a bucket is used to collect water dripping from the pumping infrastructure but as the bucket is not being emptied by hand the water overflows and soaks into the cement. In the second image we see how a metal hook is attached to a plastic container in order to scoop

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water to test for its quality. The third picture shows the dashboard of the control programme of the REGIDESO. It is supposed to show the current state of the valves and pumps at the pumping station by the lake, but the programme doesn't work so the image is just random. Since the REGIDESO installed the program it hasn't worked and it is not used.



Figure 5. "brim resources" of the REGIDESO. Source: Author's original

Rethinking the Governance of Household Water Provision

When studying governance structures academics should not focus solely on how the state, private and civil actors interact but also the relations within these groups as they exercise governance (Lindell, 2008). According to the national water law public institutions such as the REGIDESO have the right to sub-contract private companies to fulfil specific task in the service provision systems. Beyond that only institutionalised forms of public participation are considered within the legal and institutional framework. Yet, in service provision in Bujumbura 38% is informal according to a research done by the ISTEERU in 2006 (Nkeshimana, 2011, p. 51). Many academics, such as Nkeshimana (2011) point to the informal sector as playing an important role in the provision of services to the urban poor in the argument that they need such services, as they cannot afford "modern goods and services" but what is really the effect of such informality on justice in the system?

In relation to equity on a city level, the fact that there is an existing correlation between the so-called "lucky ones" and the higher end housing market it seems that the advantage here is to those better off households who can already afford to live in such plots. Of course this can then also be compensated in part as the hospitals that are being provided should be to the benefit of all. However, many urban poor do not have the means to visit hospitals and thus they are not even benefitting indirectly. On a neighbourhood level the absence of a public tap can create large inequalities as households then have to either buy water from other households for up to four times the regulated price or are forced to walk sometimes up to two hours to find an alternative water source (such as a river or natural water source). This strong contrast to the neighbourhood's where public taps are available illustrate how important this form of infrastructure is in relation to justice on a neighbourhood level. At household level children are very valuable as they can fetch water and by doing so leave some time to the parents to focus on other things (for example income generating activities). In contrast to our analysis of the formal framework, where equity was a clear priority the reality on the ground shows that on the city level the system is to the disadvantage of the poor, who cannot afford to live on "lucky" plots that have better service provision, because they often share a tap and are thus unable to benefit of the pro-poor tariff structure, and because they cannot afford to invest into buffers such as large storage tanks or electric pumps. On the neighbourhood level

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it is to the disadvantage of those who do not have access to a tap, as they depend on water vendors who re-sell the water for upto four times the formal price. On the household level it is to the disadvantage of people living alone and households who only have very young or no children at all. This brings new insights into questions of equity in the provision of household water in Bujumbura. Solidarity is key to the access to water as is told by the interviewee and her friend. The strength of social networks has an influence on equity.

When looking at diversity on the different levels we can see that on a city level the REGIDESO offers differentiated options for household water access. On the one side there is access to the centralised infrastructure to the plot or through public pipes. Most neighbourhoods have both options. Households who live along the lake, river or natural water springs have the option of accessing water that way. Rainwater is also collected across the city. In parallel to this diversity of strategies, the diversity of people and the recognition of various systems of oppression is not activity represented in the legislation, neither formally nor informally. The research has not come across any strategy that facilitates access for any types of marginalized group, with the exception of public taps for the financially less well off. In this regard the system can still be improved, by describing vulnerable groups and their various levels of oppression. Considering the legal loophole, analysing what is beyond the formal is not possible as the formal state of exception makes the informal formal.

Who pays, decides? When looking into the dimension of democracy it is important to bring the funding of the system into question. External funding is very important to the sector as it brings in up to more than three quarters of the available funds (IMF, 2012). The government is aware of the dependence the sector has to such external investments and thus puts in place fitted political strategies in order realise adequate mobilisation of such external funds. However, such structures of financing have been criticised by academic such as Moyo (2009) who argues that such support comes with conditions that have brought forward different governance structures that have repeatedly proven to be inadequate to fulfil the promises they have made. In Bujumbura's water system has been funded for three quarters by the German development bank through the PROSECEAU project (*Programme Sectoriel Eau et Assainissement 2007-2020*) that has been involved in steering changes in the sector from the formulation of policy to the institutional structuring of the sector. As illustrated in the analysis of the formal framework the degree of importance of citizen participation depends on the document under analysis, however in general beside the general statement that all actors should be involved at different levels, little practical tools on how to plan such participation or how to evaluate it is given. The multi-scalar analysis exposes a gap between the city level and the other levels. The neighbourhood and household levels seem to be intertwined. As one household stated "even after working hours (...) if we are eight or ten who need water then we can call the guy and he comes to open the tap." (Interview 5, March, 2017). This illustrates how the households can also be involved in the decision making of the private entrepreneur running the public tap. Both on a neighbourhood and household level there is also the notion of 'Law of the owner', where the owner of the tap comes up with rules, access hours, in relation to the use of the tap. Here these individuals seem bestowed with power through which they have a say to the households right to the service. They decide, how and when water can be accessed as well as the degree of participation that is allowed. In some cases it seemed like these rules were non-negotiable, while others were much more adaptive to situational and household needs. While the households are often very involved in their own access to water the discussion on the other two levels highlights the need to consider democracy more intensely within the formal framework.

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Conclusion

Water systems are considered an issue of justice, where the poor face more problems than the better off (Hofmann, Allen, & Davila, 2006). This reveals the importance of approaching water access from a just city approach. However, to realise the intertwining of justice-norms and how in some cases they might reinforce one another while in others they might clash (Fincher & Iveson, 2011). By taking the three dimensions of the Just City (Fainstein, 2010) as analytical bases for evaluating justice in water access, it is evident that the interrelation between these dimensions is highly differentiated when one simply analyses the policy framework in contrast to when informality is considered.

The Just City concept provides tools that planners can apply in their analysis of equity, diversity and democracy (Fainstein, 2010). However, based on the analysis of the legal framework one of the limitations of this approach was highlighted, the fact that what is legal and what is illegal can be difficult to distinguish. The case of the conflicting guidelines presented by the national water law on the one hand and the national water strategy on the other illustrates this problem. This accentuates the complexity of issues related to the formality-informality debates and supports the need to invest in lenses that enable an analysis of processes in the system regardless of whether they are considered formal or informal. The high percentage of informal income opportunities in the sector equally points to the importance of considering what is both within and beyond the legal framework. The multi-scalar analysis has pointed to the varied insights that can be collected at the different scales and thus confirms that such an analysis is beneficial. If justice were only analysed on a city scale, the findings related to the existence of plot politics and the 'law of the landlord' would not have been made. Yet, these have an important effect on the everyday lives of the households as people in positions of power claim certain rights that they formally do not have the rights to.

Broadening the understanding of the different dimensions of justice equally brings different insights. The idea of looking at equity of burdens in addition to equity of gains is important as it enables to broaden the reflection, consider the interrelations of the system under analysis with other urban systems and understand the effects of these burdens. The example of households collecting water from polluted rivers shows that there can be stakeholders who do not have any benefits of the system. They would thus be left out of the discussion if the only question in regards to equity was 'who benefits, and to what degree'.

The broadening of the concept of diversity to encompass the diversity of people and systems equally enables the inclusion of a wider array of realities. The analysis of the formal framework accentuates that the diversity of people has been gaining importance within the developing framework, however it still needs to find a more prominent role for example through explicit mention of differentiations. Many of the informal systems described within the paper have accentuated the existence of a large array of socio-technical arrangements that can fit and adapt to the specific realities of households. Yet, these are not formally recognised within the legal and institutional framework but still a legal loophole is provided to allow for such variations. This openness for diversity of systems can now be included in the discussion on justice, which would have been overlooked within the original understanding. The same goes for the concept of democracy. It points to the main lacunas of the policy framework, the fact that nothing is said as to how participation is to be done or evaluated. But a broader understanding of participation and the analysis of the different forms of participation identified at the different scales show that the largest part of participation is

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outside the formal framework. Yet, it has to be considered in discussions of justice as it affects the everyday realities of the households.

Based on these findings, context specific action oriented recommendations are now presented.

In relation to equity:

- As priority infrastructures are identified that require constant water provision on the centralised network, the same should be done for smaller health centres that aren't 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. Introducing the business of pushcart vendors for examples could be useful, as water can then be delivered directly to the households. Alternatively technological innovations that enable an easy transport of the water can be introduced
- In order to balance out the importance of personal social networks, each cell should have a type of neighbourhood reservoir, which would provide safe and accessible water to all households in the neighbourhood in times of infrastructure failure. This way, also those who do not have a good friend living down the street will have an alternative source during water cuts.

In relation to diversity:

- Rainwater harvesting must be encouraged on a policy level for uses such as laundry, cleaning the house and watering plants. It is currently 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*, religions, and political parties in addition to the gender dimension that is already included.
- 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.
- Beyond the formal recognition of woman as important actors in the decision making processes, specific measures should be taken to ensure this contribution happens.

In relation to democracy:

- There is a need to set specific participatory requirements within the formal framework, so that it can be evaluated accordingly.
- Certain limitations must be put on the power of the tap owners through a policy formulation that gives certain specific rights to the users. (For example: Tap owners must allow a minimum of daily access to the tap.)

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 just a little bit more just within the socio-political and current context of the case study under analysis.

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Interviews

- Interview 1, Resident, zone Gihosha, 15 March 2017
- Interview 2, Resident, Land owner, zone Gihosha, 22 February 2017
- Interview 3, Resident, tenant, zone Buyenzi, 06 March 2017
- Interview 4, Resident, tenant, zone Kamenge, 22 February 2017
- Interview 5, Resident, tenant, zone Kanyosha, 09 March 2017
- Interview 6, Resident, tenant, zone Kamenge, 22 February 2017
- Interview 7, Water Vendor at Tap, zone Kamenge, 22 February 2017
- Interview 8, Water Vendor at Tap, zone Buyenzi, 06 February 2017
- Interview 9, Resident, tenant, zone Mutanga Nord, 16 February 2017
- Interview 10, Representative of the REGIDESO, Bujumbura, 28 February 2017