'THE RIGHT TO THE CITY' FOR MARGINALISED COMMUNITIES THROUGH WATER AND SANITATION SERVICE PROJECTS

MARY WAIRIMU MAINA

Cape Peninsula
University of Technology

***'THE RIGHT TO THE CITY'* FOR MARGINALISED COMMUNITIES THROUGH WATER AND SANITATION SERVICE PROJECTS**

by

MARY WAIRIMU MAINA

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Supervisor: Prof Andre Van Graan

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DECLARATION

I, **Mary Wairimu Maina**, declare that the contents of this dissertation/thesis represent my own unaided work, and that the dissertation/thesis has not previously been submitted for academic examination towards any qualification. Furthermore, it represents my own opinions and not necessarily those of the Cape Peninsula University of Technology.

Signed **Date**

ABSTRACT

The introduction of water service programmes has significantly improved the delivery of Water and Sanitation Services to marginalised communities in Kenya. Since the implementation of the Kenya Water Act of 2002, enacted policies have resulted in communal ablution blocks and water kiosks in some of the more densely populated settlements. In the development of service provision programmes to improve access to water and sanitation, the social and cultural implications have yet to be addressed. To better understand the partnerships between the marginalised community and the political agencies that ensure improved allocation of resources, community participation should be addressed in the emerging water governance.

The *right to water* is a key clause in the new constitution of Kenya and although this is a laudable recognition of citizens' rights to basic services, this constitutional clause is yet to be fully implemented. The exclusion of social practices followed by marginalised communities results in limits in the promotion and implemention water and sanitation projects. The resulting lack of water and sanitation services decreases the internal capacities of community members and inhibits development. A natural and finite resource such as water, often taken for granted by most, is the foundation to improved places in a community. These places reflect social relations within the given society and provide a platform for interaction. When this engagement occurs, meaning in both physical and social boundaries between different communities that emerge, can help assert agency to marginalised groups. While a programme is used to define a space by regulating through building codes and standards, a community's role is validated by the inclusiveness of the design process. Therefore the resultant project allows for a sense of agency to be built, while boosting interaction through learning programmes, to improve civic duties in the society. These aspects are crucial for development and can be achieved using allocation of basic services like water and sanitation.

Grounded Theory is used to analyse the interviews from the respondents and it concerns itself with the meanings attributed to steps within processes. This approach is applicable when meanings attributed to macro-level explanations and micro-level activities need to be uncovered. The interviews conducted for this study are analysed line-by-line coding and memo writing. The data is used as a narrative of distinct processes in both marginalised communities and political agencies. Using the model of an agent the study illustrates the process of agency that highlights the role of marginalised communities in participatory approches toward equitable access to water and sanitaion services. The cases approached in this study further articulate the processes used by political agencies to engage in

community participatory approaches. Though these participatory approaches were seen to be more inclusive than previous service delivery approaches, gaps emerged in the study that are addressed in the relationship matrix.

This model distinguishes the differences in the production of space through Water and Sanitation Service programs, and the creation of place in implemented projects. By aligning these two aspects of the production of space when applied to marginalised settings helps in understanding the context prior to the implementation of WSS development programmes. This recognition of the role that marginalised communities play in socioeconomic development can improve programmes and projects aimed at providing water and sanitation services. This access is important to marginalised groups which are disadvantaged, because of a difference in their practices. By understanding the social practices around the use, management and safeguarding of water and sanitation projects, community members can begin to attach cultural value to their water resources. This has implications for the sustainability of the projects and their replicability. Therefore social practices, and by extension culture, influence the concept and design of programmes to enable access to water and sanitation resources, especially to marginalised groups in society.

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GLOSSARY

AWSB	Athi Water Service Board
CBO	Community Based Organisations
GoK	Government of Kenya
NCWS	Nairobi County Water and Sanitation
SHG	Self-Help Group
WASREB	Water and Sanitation Regulatory Board
WSB	Water Service Board
WSP	Water Service Provider
WSS	Water and Sanitation Services

Community engagement	Refers to the process by which community benefit organizations and individuals build ongoing, permanent relationships for the purpose of applying a collective vision for the benefit of a community.
Community participation	It can be defined as the involvement of people in a community in projects to solve their own problems (Sinclair, 2005:177).
Marginalised groups/community	Individuals living in a setting that has poor access to basic services such as water, sanitation, health, and other infrastructure.
Political agency	Organisations or institutions that have power to control change in a setting.
Regenerative design	A system of technologies and strategies, based on an understanding of the inner working of ecosystems that generates designs to regenerate rather than deplete underlying life support systems and resources within socio-ecological wholes (Reed, 2007).
Representation of space	"The demarcation of space as an organising frame of reference for communication which permits a spatial orientation and thus co-determines activity at the same time" (Goonewarden, Kipfer, Milgrom & Schmid, 2008: 36).
Social practices	"Defined as the situated activities of social actors which happen in the flow of daily life and integrates the concept of agency and social structures" (Dolmier, Frohlich & Potvin, 2009).
Spaces of representation	"The material order that emerges… [to] become the vehicle conveying meaning. In this way a spatial symbolism develops that expresses and evokes social norms, values and experiences" (Goonewarden, et al., 2008: 37).
Spatial appropriation	Appropriation is the taking of another's property for ones purpose for either illegal or legal that highlights abandoned or unoccupied space (Mierzejewska, 2011:43).

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CHAPTER ONE
INTRODUCTION TO THIS STUDY

1.1 Background to the research

The right in the urban decision-making processes over matters of housing, water, or transportation regards alternative configurations of democratic participation (Jimenez 2014). It demands that urban resources be managed democratically. This can equally be seen as a right to collective power that not only shapes the nature of political conflict, but also the kind of cities that are created (Attoh 2011). Globalisation and a capitalist free-market economy causes some communities to be deprived of their right to the city that promises possibilities as it reorients decision-making away from the state and toward the production of urban space centred on the need to restructure the power relations that underlie the production of urban space (Purcell 2002). Thus, the declaration of a right to the city based on inhabitancies is not only a matter of appropriating space, but it is an appropriation founded on authority (Iveson 2013). Therefore, urban inhabitants should be entitled to equal participation in urbanized regions that concentrate on public spaces, thus abolishing the rule of private capital on urban transformations, as key to establishing a genuine right to the city (Basta 2016).

> *"The term right to the city refers to a concept developed by Marxists geographers…who feel the poor have been excluded from aspects of city life. It is far more than a right of an individual's access to the resources that the city embodies; it is a right to change ourselves by changing the city…and exercising of a collective power over the processes of urbanisation"* (Harvey, 2008:272).

This notion of a right to the city in Lefebvre's writings is closely tied to understanding the city as a process in which all citizens must be allowed to participate. It binds access to services to the right to urban life in the city while promoting the right to places through engagement between stakeholder groups. It is therefore, bound up with the right to urban life in the city, and the right to places of encounters and exchange (Parr et al. 2015). Therefore Lefebvre's (2014: 148) response that "critical thought reveals a disintergration in the relation between body and space, [higilighting how]…architecture provides enveloping spaces to impose and serve this relationship that holds decisive influence over the urban fabric."

The importance of inclusion to service delivery for marginalised communities

> According to the United Nation's ss. 11-12 of *The Right to Water Act of 2002,* "water is a limited natural resource and a public good, fundamental for life and health. The human right to water is indispensable for leading a life in human dignity. It is a prerequisite for the realization of other human rights… Over a billion persons lack access to a basic water supply, while several billion do not have access to adequate sanitation, which is the primary cause of water

> contamination and diseases linked to water. The continuing contamination, depletion and unequal distribution of water is exacerbating existing poverty. States parties have to adopt effective measures to realize, without discrimination, the right to water".

The Kenya Water Act of 2002 in s. 8, states that "water is a basic human right". This statement has been inscribed as a part of the new constitution in Kenya. Although this is a laudable expression of citizens' rights to basic services, this policy is yet to be fully implemented. In 2010, the United Nations declared access to clean water and sanitation as a human right. But recognizing the human right to water does not explain how to deliver this right to households. Ironically, these rights were omitted while drafting of the Sustainable Development Goals (SDG), even though they are considered significant to the framing of the UN's development agenda for the next 15 years (Patterson, 2014).

The Demand Responsive Approach model is based on a free market scenario where "the need to investigate collective perceptions about the ownership and allocation of water resources is not emphasised [and] risks multiple service levels being imposed on communities, who [would] then be expected to manage the resulting scheme" (Deverill, Bibby, Wedgwood & Smout, 2002:19). While insufficient data is blamed for unproductive service delivery, resulting inappropriate programs for service provision in the Nairobi households, indicate a lack of information on the demand side of water and sanitation services (Afullo & Odhiambo 2009). Therefore to bridge the gap emerging in the demand side approach, social enterprises represented as civil society agencies acted as conveners of marginalised groups at city level (WSP 2011). "The transition into a hybrid post neoliberal agenda has a strong pro-poor political paradigm that, through its underpinning moral philosophy, intrinsically provokes a collision with neoliberalism" (Brown et al. 2016):664).

Innovative reform initiatives at state level have limited capacity to respond to grassroots stakeholders who similarly, are yet to scale up their monitoring capacity to gain a seat at the table (Fox 2015). The current application of pro-poor urban planning and collective action requires a consultative and negotiated process, towards an inclusive urban development (Brown & Mcgranahan 2016). Though focusing attention on policies that build social capital is advisable, when done without due consideration to political and ideological process that produces inequalities in access to social services, it may not yield the desired outcomes (Bisung et al. 2014). This raises the contestation that even as spatial planning is seen as a political process in which knowledge is contested, or even when acknowledged, it does not necessarily steer decision-making processes, either by local communities, authorities and private institutions (Baud et al. 2016). Therein emerges a platform for discourse on future transformations of the urban fabric by understanding both social practices of marginalised groups and the policies that bind them in the appropriation of water and sanitation services.

This platform for better water provision which includes government institutions and community based organisations, has failed the marginalised communities they are meant to serve. The most important aspect to bear in mind is the change to the built facility and the ownership and agency that come with it. “Whether place refers to a village or a metropolis, it always a human space. It is not only what is observed on the landscape or setting for activity, but also what takes place through the creation and utilisation of a physical setting” (Pred, 1984:279). Therefore the place that is created from the introduction of water and sanitation projects, should ideally represent the community that uses them, “thus giving attention to the contested and critical human right to water and sanitation for present and future generations” (Patterson, 2014).

1.2 Key terms used in the study

Social innovation

According to Moulaert (2005: 1973) “social innovation [is] the structuring concept in a new approach which tackles neighbourhood development as a strategy against poverty”. Additionally, “Social innovations are perceived as creative solutions that aim at transforming social relationships [seen as the] root of the social problems” (Bouchard 2012). In our study social innovation is viewed as the new concepts of water and sanitation facilities introduced in informal settlements in addition to the implementation of pro-poor policies in service delivery by the Ministry of Water and Irrigation in Kenya. These projects are further delimited in chapter four.

Social enterprises

“A social enterprise is a business that seeks to bring people and communities together for economic development and social gain” (Mswaka, 2015: 8). “Social entrepreneurs often focus on developing social enterprises…that are often characterized as operating in the social economy as community enterprises…[acting] as potential engines for local economic development” (Avelino, et al., 2015:8). These social enterprises are represented in both the initial sample, where Umande Trust was approached in Kibera, and further in the successive sampling of community-based organisations running new water and sanitation facilities in rural settings of Kiambu and Nairobi counties.

1.3 Rationale to the research problem

This study aims to assess the provision of water and sanitation services, and their influence on community capacities, in informal settlements in Kenya’s Nairobi and Kiambu Counties. The provision of these basic services, especially water, to informal communities is important to wellbeing. Water governance initiates the ability of a community to seek creative solutions by actively engaging with each other. In informal settlements, this participation has led to the

community taking part in implementing water kiosks which are safeguarded by the community members (Gakubia, 2007).

To critically address the issues raised of individual and collective agency through social innovation, a literature survey as seen in chapter two was done. This proved that the potential transformation of the dominant political culture by more inclusive or alternative social relations expresses a new form of citizenship. This citizenship has a practical and political implication for the ways in which individuals participate in processes that affect their lives (Lefebvre, 2008). Therefore, when “institutional planning stresses the impact of local institutional histories and concepts” (Moulaert et al. 2005), “social innovation [can then be seen to] act as a game-changer, breaking path-dependencies, [where it can be] argued that need-driven services require the establishment of new collaborative relationships and new institutional arrangements” (Bekkers et al. 2013). Therefore, “[social] innovations must create new social networks and capacities that evolve into new structures and systems, [thus] creating a longer term process of path-breaking social transition” (Benneworth & Cunha 2015).

The study then follows the research objectives below to delineate aspects that will guide the survey to critically look at pathways available for transitional governance in service delivery for marginalised communities.

1. Explain the network created to inform members of marginalised communities of their role in the access to equitable water and sanitation services.
2. Describe the milestones attributed to community participation in social enterprises aimed at enhancing wellbeing through access to water and sanitation services.
3. Outline guidelines stating the processes for continual management and ownership (custodianship) of water systems within built facilities of social initiatives.

1.4 Choosing the setting for the study

The cases chosen in the study (which will be further delineated in chapter four) were, in the initial sampling, situated in both South African and Kenyan marginalised settings. As developing countries in Sub-Saharan Africa they present a good example of renewed efforts to provide safe, reliable access to water and sanitation services, while promoting sustainable development strategies. Unfortunately, demonstrations in Cape Town in 2013-2014 inhibited further sampling during the successive data collection stage. This led the study to concentrate on Kenyan case studies were comparative analysis was drawn between rural and urban setting.

Water and sanitation services in marginalised settings are provided for by both government and private service providers. The condition of water and sanitation access in informal settlements, since the enactment of the Kenya Water Act of 2002, is informed by the

program, *Water and Sanitation for Informal Settlements* in Nairobi and its satellite towns (Athi Water Services Board, 2008). This programme is still implemented informally and consultation and participation of the local community is not recognised. This platform for better water provision which includes government institutions and community based organisations, has failed the marginalised communities they are meant to serve. Therefore an approach curb the proliferation of private water service providers, who "sell water of uncontrolled quality to consumers who have to spend hours to fetch it at prices that are often between five and twenty times the tariff applied on consumers with a metered water connection" (Gakubia, 2007) was initiated by the Ministry of Water and Irrigation.

The most important aspect to bear in mind is the change to the built facility and the ownership and agency that come with it. Therefore the place that is created from the introduction of water and sanitation projects, should ideally represent the community that uses them, "thus giving attention to the contested and critical human right to water and sanitation for present and future generations" (Patterson, 2014).

The comparative analysis used in the study considered six projects in total. In the initial sample two projects in both Cape Town and Nairobi were chosen to identify characteristics of social innovation. In the four successive samples, the path-dependency seen to emerge from the analysis as well as interviews from key government informants were used to identify both individual-run and collective-run facilities seen to operate as social enterprises.

1.5 Outline of the study

Chapter Two: Literature survey that identifies emerging concepts in the discourse of spatial appropriation in the use of social innovation initiatives in water and sanitation services delivery. This gives rise to the research question that guide the study.

Chapter Three: Theoretical approach using Lefebvre's theory on the production of space that is used as a lens to observe inclusive water and sanitation delivery in marginalised settings.

Chapter Four: Following the approach to research that Grounded Theory set out in Jones, et. al. (2005) the study begins by locating the problem both in practice and theory. By validating the relevance of the right to the city to the context of marginalised settings in Nairobi and Kiambu Counties, the study sets the pace for data collection. In line with the key principles of Grounded Theory, the data collection and analysis is iterative. This means that initial data is collected and analysed to provide theoretical sampling for successive case studies (Charmaz, 2006).

Chapter Five: Through memos, these coded data was interrogated to outline emerging information to form relevant categories. The categories that emerged were *agency, interaction* and *learning.* By relating these emerging categories to the architectural existing

dimensions of: define, regulate, and validate, this study forms a link to the emerging categories by using the lens of Lefebvre's triad of production of space, to assess the influence marginalised communities can have on the process of urban transformations.

Chapter Six: The emerging binary relationship between the political agencies and the marginalised communities is highlighted in the implications of the knowledge outcomes. The hypothesis drawn is then explained by looking at similar cases in other marginalised settings.

Chapter Seven: Literature is used to locate the hypothesis within the current discourse of urban processes in social innovation initiatives. Within the participatory and agency aspects of the right to the city.

Chapter Eight: The concluding remarks are linked to the social process that was drawn from the interdependent relationship between the aspects that produce space and those that create place.

1.6 Limitations and key assumptions

The initial data collection, collected from both Samora Machel, Cape Town and Kibera, Nairobi was in the form of written interviews because communities and agencies in these settings refused to be recorded during interviews. Subsequently, the successive case studies were collected from Urban and Rural areas of Nairobi only and used the political agency as a means to access community respondents. This ensured that interviews and observations were recorded data for deeper analysis.

1.7 Chapter Summary

The value of the perceptions and experiences of individuals living in society is important whether from high or low-economic brackets, as they influence architectural dimensions that define our habitation and regulate the guidelines of its construction and planning. All these features work together to validate human being's role in society. Grounded Theory concerns itself with deriving theoretical concepts from experiences of respondents. The emerging concepts that are derived from extracted knowledge outcomes of the empirical evidence, contextualise the resultant working model that highlights social aspects for enhancing the processes of WSS provision. From this approach, design can assess the needs of the users while aligning the desired outputs of the client. Political agencies in this case are seen as the client as they provide resources to construct and manage the built projects.

CHAPTER TWO
LITERATURE SURVEY

2.1 Background to the literature survey

As stated in Chapter one, the research problem aims to assess the provision of water and sanitation services and their influences on community capacities of informal settlement occupants in Kenya's Nairobi and Kiambu counties. In this chapter the survey looks at the collaborative efforts, agency, and design strategies associated with social innovation and the provision of water and sanitation services in marginalised settings. We follow that by outlining and discussing keywords used to set the parameters of the survey. The research questions are then justified that are then used to guide the subsequent case study protocol outlined in Chapter four.

Architecture is not neutral, rather it is influenced by the social and political landscape of a community and vice versa. It can serve to maintain and reproduce social values and classifications through exclusions and segregations and by embedding social classification (Shah & Kesan, 2007). What is built and where agents construct it can help in securing socio-political strongholds in society. The form of a building's structure and enclosure affects the character of spaces within. This planning involves the efficient and productive use of these spaces, fitting living patterns to the architectural patterns of space (Binggelli & Ching, 2002). If people are to feel a sense of belonging to the world in which they live, an involvement in the space they inhabit is a good starting point. This would reduce architecture which imposes universal design solutions on communities without their participation or ownership of the design outcomes (Brady, 2011). By allowing marginalised communities to be included in the conceptualisation and resulting design interventions, social initiatives meant to improve their settings can be well integrated. This can be done through community engagement with agents in the allocation of municipal service projects. Cultural significance can then be implemented in the projects.

2.2 Literature survey methods

In this study the first search of the Google-scholar Database social innovation was used as a keyword, followed by citations of Moulaert whose work is seen as seminal in defining the typology of social innovation; and Westley from the Waterloo University where they highlight institutional entrepreneurship in social innovations. In the second search of the Science-direct Database the keywords: social innovation, social innovation + water and sanitation, and social innovation + social entrepreneur were used. These keywords were chosen as the main objectives of the study were to a) assess collaborative and participatory efforts in social initiatives, b) examine ways in which design strategies have been applied in social initiatives, and c) describe the process in which custodianship of social enterprises are handed-over to

community members. The 58 papers chosen for this survey highlight three main objectives of the study under which the following section of the review results are arranged.

2.3 Literature review results.

Though the categories are outlined from the objectives the sub-categories are emergent from the chosen publications.

2.3.1 Collaborative efforts

As seen in Table 1, the category is divided into four sub-categories, emerging from the publications. In the first section, processes of engagement between stakeholders is discussed as well as the need for inter-relational networks towards collaboration in the second section, and lastly narratives emerge as a way to observe social construction in innovation.

Table 2.1: Summary of collaboration category arranged according to emerging sub-categories

References	Journal	Contribution
Benneworth, P. & Cunha,J. **2015**	European Journal of Innovation Management	Understand **processes** of engagement and benefits that academic communities and stakeholders derive from these engagements
Tello-Rozas, S. **2015**	International Journal of Voluntary and Non-profit organisations	The role that the generation of individual and collective capabilities plays in **processes** of institutional and social transformation
Sol, J., Beers, P. J. & Wals, A. E. J. **2013**	Journal of Cleaner Production	A framework to understand and facilitate social learning in a complex change **process** involving multiple actors
Klievink, B. & Janssen, M. **2014**	Information Systems Management	A changing practice of **collaboration** in networks instead of principle-agent relationships to jointly come to a configuration that works for all stakeholders
Grimm, R., Fox, C., Baines, S. & Albertson, K. **2016**	Innovation: The European Journal of Social Science Research	Perceive social innovation as boosting **collaboration** and partnership between various stakeholders that make up the social fabric.
Tolley, B. & Arber, M. **2015**	Marine Policy	Proving that FLC is an effective **collaborative** model to promote alternative values, a new vision and amass the political power necessary to rival the dominant neoliberal paradigm
Barth, S., Barraket, J. Luke, B. & McLaughlin, J. **2015**	Entrepreneurship & Regional Development	Institutional logic can be used as a lens through which to examine and explain the **interactions** between regional stakeholders and social enterprises
Avelino, F., Dumitru, A., Longhurst, N., Wittmayer, J., Hielscher, S., Weaver, P., Cipolla, C., Afonso, R., Kunze, I. & Dorland, J. **2015**	TRANSIT	Transformative potential in that these **networks** are involved in re-negotiating institutional boundaries between: formal and informal, for-profit and non-profit, public and private; and challenging -or at least questioning- established power relations between state, market, community, and the non-profit sector.
Wutich, A., Beresford, M. & Carvajal, C.	World Development	Informal vendors, particularly those affiliated with workers' union may play an under-recognised **role** in securing their clients right to safe and affordable water

2016		
Santana, G. C. **2012**	Technological Forecasting & Social Change	That structuration and institutional theory in social innovation, whose focus is on **inter-relationship** between agents and social systems and applicable to the nature of social innovation
Pansera, M. & Owen, R. **2015**	Technological Forecasting & Social Change	Understanding the social and cultural construction of hybrid **narratives** to understand RCI and social change in… parts of the developing world while presenting novel innovation and innovation policy opportunities
Avelino, F., Wittmayer, J., Haxeltine, A., Kemp, R., O'Riordan, T. Weaver, P., Loorbach, D. & Rotmans, J. **2014**	TRANSIT working paper. http:// www. transitsocialinn ovation. eu/ content/ original/ TRANSIT	Hypothesis "societal transformation is the result of specific co-evolutionary interactions between game-changers, **narrative** of change, and social innovation.

Processes of engagement affecting collaborative efforts

In one study social innovation was seen to create capacity and promote new social networks that evolve into new social structures and systems. This was seen to lead to a longer term process of path-breaking social transition although tensions arose from the question of the relative power of the winning and losing social groups (Benneworth & Cunha 2015). Some case studies indicated similar aspects highlighting the role to be played by social capital, and the development of capacities so that positive results may be more evenly distributed. The tensions of power and control are approached through interpretive frameworks that use mental models to determine interpretations on a given topic. With reference to Giddens (1984) the frameworks point to the values and interests shared by a group and influence actors' decisions and actions. Additionally it was seen that while the institutional context helps to explain the emergence of the initiative, an analysis of the interactions between the various actors shed light on: the role of social capital and its link to human capital (Tello-Rozas 2015). Similarly cases drew on the importance of attitude, values, behaviour and actions of the project partners as the basic building blocks of the social learning process. Intimating that there is a need to understand and facilitate social learning in complex change processes involving multiple actors (Sol et al. 2013).

Networks within collaborative efforts

To highlight networks one case stressed that success is based on a changing practice of collaboration in networks instead of principal- agent relationships that jointly come to a configuration would work best for all stakeholders (Klievink & Janssen 2014). While others perceived social innovation as boosting collaboration and partnership between the public sector, private enterprise and the free market, civil society, the charitable sector and individual citizens, that make up the social fabric (Grimm et al. 2013). Additionally, arguments

for local community collaborative efforts in one case proved an effective collaborative model to promote alternative values, a new vision, and amass the political power (Tolley & Hall-Arber 2015).

Social innovation networks involved in renegotiating institutional boundaries between formal and informal, for-profit and non-profit, public and private, and challenging established power relations between state, market, community and the non-profit sector provide transformative potential (Avelino et al. 2015). Institutional logics can then be used as a lens though which to examine and explain the interactions between regional stakeholders and social enterprises with interest on how to overcome legitimacy barriers (Barth et al. 2015). Similarly, structuration theory was seen as an effective lens through which to understand social innovation, and the social systems that influence behaviour, and how agency can affect social systems (Cajaiba-Santana 2014). This is important in trying to understand, for example, how informal vendors are seen to play an under-recognized role in securing the right to safe and affordable water for marginalised settings. This leads to a need for further understanding of alternatives or improvements to unregulated markets where community-based innovations provide water delivery (Wutich et al. 2016).

Narratives clarifying collaborative efforts

Understanding the social and cultural construction of hybrid narratives can be useful in considering Resource Constrained Innovations (RCI) and social change in the developing world. Hybridisation in this case is seen to occur where narratives are combined and reconfigured to allow affordability, adaptability, social empowerment and sustainability (Pansera & Owen 2015). Therefore, societal transformation is thus shaped and produced by particular patterns of interaction between social innovation, system innovation, game-changers and narratives of change. Individual actors, initiatives and networks, are empowered or disempowered to contribute to this process through different forms of governance, social learning, resourcing, and monitoring (Avelino et al. 2014).

Section summary

In this section the creation of capacities is seen to promote social networks and help to evenly distribute results of social innovation initiatives. To further assist in this Giddens (1984) interpretive framework and structuration theory is highlighted as well as the mental models in approaching tensions of power and control. To renegotiate the institutional boundaries i.e. legitimacy, structuration theory is applied to understand a social system's influence on behaviour and agency. These narratives that emerge to explain the emerging societal transformation are seen to contribute to different forms of governance, social learning, resourcing, and monitoring. From these publications, the question of networks and their role in enabling capacities is foregrounded. Therefore one the leading questions of the

research will be: *what types of community participatory approaches in marginalised settings are utilised to encourage stakeholder engagement?*

2.3.2 The role of governance and agency in re-introducing marginalised groups to formal society.

In Table 2 the category is divided into seven sub-categories emerging from the publications. The summary begins by looking at policies, governance, institutionalisation, transformation, resilience, social aspects, and regional aspects.

Table 2.2: Summary of governance and agency category arranged according to emerging sub-categories

GOVERNANCE AND AGENCY			
	References	**Journal**	**Contribution**
01	Midheme, E. & Moulaert, F. **2013**	Land Use Policy	Highlighting possibilities existing in urban property **reform**
02	Cressey, P., Totterdill., P., Exton, R. & Terstriep, J. **2015**	SIMPACT	Highlight the synergies between the tacit knowledge and expertise of its own staff and that of other actors. SIMPACT tasks to conceptualise a systematic approach to **policy** design and implementation capable of stimulating, resourcing, and sustaining social innovation on a large scale across Europe
03	Herrera, V. **2013**	World Development	Neoliberal **policies** such as commercialisation have undermined potential gains of decentralisation and failed to improve services systematically
04	Martin, C. J. & Upham, P. **2015**	Journal of Cleaner Production	A conceptual model of the role that values may play in grassroots innovations as they seek to emerge from niche to **regime**
05	Neumeier, S. **2012**	Sociologia Ruralis	Actor (oriented) network approach as a potential methodology to approach social innovations in rural **development**
06	Baker, S. & Mehmood, A. **2015**	Local Environment	Co-mingling of social innovation with wider hierarchical **governance**
07	Gillard, R., Gouldson, A., Paavola, J. & Van Alstine, J. **2016**	Wiley Interdisciplinary Reviews: Climate Change	Highlighted shortcomings of politics, power, agency and ideas, which can limit the scope of analysis leading to problematic **governance** prescriptions
08	Kuokkanen, A., Mikkilä, M., Kahiluoto, H., Kuisma, M. & Linnanen, L. **2015**	Environmental Innovation and Societal Transitions	Failure framework that indicated that the policy-**governance** interface lacks directionality and coordination while enterprise-market interface creates inadequate articulation
09	Giner-Reichl, I. **2015**	Energy Research & Social Science	Inclusion in an increasing number of global and regional frameworks of cooperation and **governance**
10	Nastar, M. **2014**	Cities	New **governance** arrangement in urban planning and water provision has not benefitted the urban poor
11	Rogers, B. C., Broen, R. R., de Haan, F. J. & Deletic, A.	Environmental Innovation and Societal Transitions	Hypothesis on the purpose and type of **institutional work** that are likely to be most effective for supporting the ongoing development of an innovation.

	2015		
12	Polzin, F., von Flotow, P. & Klerkx, L. **2016**	Technological Forecasting & Social Change	Exploring the finance mobilisation functions of **institutional** innovation intermediaries to address barriers to eco-innovation along the innovation process (model)
13	Patterson, J., Schultz, K., Vervoort, J., Adler, C., Hurlbert, M., van der Hel., Schmidt, A., Barau, A., Obani, P. & Sethi, M. **2015**	Earth System Governance	A framework for understanding and critically analysing **transformation** towards sustainability
14	Manuel-Navarrete, D. & Pelling, M. **2015**	Global Environmental Change	Introducing a pathway approach as a lens to represent entwined process of change and their inertias and envision ways of democratically steering future **transformations**.
15	Ferguson, B., Frantzeskaki, N. & Brown, R. R. **2015**	Landscape and Urban Planning	Contextualising the strategic program for the specific purpose of enabling **transformative change** in urban water systems
16	Bettini, Y., Brown, R. R., de Haan, F. J. & Farrelly, M. **2013**	Technological Forecasting and Social Change	Providing a systems analysis cognizant of contextual dynamics and targeted to the knowledge needs of **Transition Management** activities
17	De Haan, F. J., Ferguson, B.C., Adamowicz, R. C., Johnstone, P., Brown, R. R. & Wong, T. H. F. **2014**	Technological Forecasting & Social Change	Proposed societal needs framework that leads to an intuitively clear, yet more precise definition of liveability and sustainability in the context of societal **transitions**
18	Sakai, P. & Dessai, S. **2015**	Sustainable Research Institute	By critically examining how the concept of **resilience** is being used, and contributes to the debate that adaptation is a process in which frame catalyse of inhibit action
19	Ahmed, I. **2014**	Procedia: Economics and Finance	Outline of progress and organisation building **resilience** in slums
20	Sorin-George, T., Paul, M. & Cosmin, S. **2015**	Annals-Economy Series	Analysis of several definitions of **social economy** and synthesis of their contribution to the development of the concept
21	Evers, A & Ewert, B. **2015**	New Frontiers in Social Innovation Research (Book Chapter)	Recurring **patterns** in the approaches and instruments of localised **social innovation**. This is done in a way that suggests that such patterns may well become useful tools
22	Mswaka, W. **2015**	Revista Ibero-Americana de Estratégia	Highlighting that social enterprise sector has become increasingly important in integrating **social justice** and economic progress, especially through the provision of social value such as job creation, particularly in deprived communities
23	Etxarri, A. E., Hoekstra, J., Fuentes, G. C., mazo, E. C. & Dol, K. **2015**	ENHR Conference	Use the concept of housing cooperative with a new function and innovative role within the housing system, which could make it possible to apply the criteria of **social economy** in the field of Spanish housing in a lasting and truthful manner
24	Camps, S. &	Technological	The essential role of innovation enablers, as a set of

	Marques, P. **2014**	Forecasting & Social Change	capabilities that mediate the effect of social capital on innovation. Importance of understanding the association of **social capital** with informal groups
25	Quezada, G., Walton, A & Sharma, A. **2016**	Journal of Cleaner Production	Employing a transitions perspective helped to identify critical risks to utility assets and **social equity**
26	Erben, M. J., John, J. R. & Schafer, M. **2016**	Journal of Cleaner Production	A first step to a general framework and typology of **social innovation** for sustainable consumption
27	Yoon, H., Yun, S., Lee, S. & Phillips, F. **2015**	Technological Forecasting & Social Change	Analysing the **network** which incentives potential entrepreneurs within region
28	Westley, F., Tjornbo, O., Schultz, L., Olsson, P., Folke, C., Crona, B. & Bodin, O. **2013**	Ecology and Society	Proposition of a more coherent theory of strategic **agency**

Policies and governance

For the urban poor, the struggle for shelter is often a struggle to gain access to land on which to build and support social structures provided by communal stewardship (Midheme & Moulaert 2013). These struggles that have led to amassing of communal bargaining power that still suffer from growing inequality and unequal distribution of income, which is seen to have led to governance arrangements in urban planning and water provision from which the urban poor has not benefited much (Nastar 2014). The introduction of private sector expertise is currently advocated by politicians but has not always overcome the rigidities and inefficiencies characteristic of policy design (Cressey et al. 2015). Unfortunately, neoliberal or market-oriented policies for public services includes applying business management strategies though commercialization that has undermined potential gains of decentralization and failed to improve services systematically (Herrera 2014). As regimes form shift to accommodate innovation, emerging values are related to longstanding discussion and debate as to the role of individual agents and agency in structural change by providing a motive for intention and action (Martin & Upham 2014). Governance prescriptions of more socially oriented theories of change, focus on the contingent relations between various actors and their assemblages instantly open up possibilities for more radical innovation and adaptability beyond the discursive (Gillard et al. 2016).

Social innovations take place as co-evolutionary learning processes occurring in hybrid networks consisting of human and non-human actors, and spread through networks (Neumeier 2012). At the policy-governance interface, institutional and interaction failures have led to missing directionality and coordination in the system. These failures particularly point out to the needs to reframe policy and its implementation, and to improve interaction

within and between policy sectors (Kuokkanen et al. 2015). Therefore, socially innovative actions can be said to lead to the emergence of new governance patterns that strengthen multi-level engagement and participatory practices (Baker & Mehmood 2015).

Institutionalisation and transformative resilience

As seen from the previous cases, there's limited engagement of the government, but policy instruments can create viable resilience benefits for the urban poor (Ahmed 2014). By considering social values to be the foundation of a liveable city, the challenge of transforming the water system to develop the socio-technical institutions and practices offers a means to meet growing needs (De Haan et al. 2014). But this would need institutional work that most effectively supports innovation maturation and even though these characteristics will change over time, the diagnostic approaches are critical for understanding agency of upcoming innovations (Rogers et al. 2015). Some cases used this institutional perspective as the basis of the analytical framework to show how different actors come together, and how actions might be aggregated to guide transitions by strategically generating systemic change dynamics in urban water (Bettini et al. 2015). Additionally, more proactive behaviour that challenged water companies by adopting resilience towards supporting stability provided the continuous and reliable service is needed (Sakai & Dessai 2014).

These institutional innovation intermediaries accelerate commercialisation and diffusion of innovation to highlight restrictions and require a focus on the interfaces between the innovation process stages and their connection with the policy environment (Polzin et al. 2016). Transformative change programs underpinned by strategies enable envisioning, *learning* and executing, while cultural transformation require a supportive institutional context within urban water systems for its effective delivery (Ferguson et al. 2013). This change is likely to be highly politically contested, but can be seen as a challenge to path dependencies and allow the break from current trajectories encouraging the creation of new narratives of change, and thoughts on occurrences of systemic societal change (Patterson et al. 2015). A pathways approach may provide a useful lens to represent entwined processes of change and their inertias, and envision ways of democratically steering future transformations (Manuel-Navarrete & Pelling 2015).

Social aspects

Sustainable development and energy's inclusion in an increasing number of global and regional frameworks of cooperation and governance bodes well for the world's poor (Giner-Reichl 2015). This includes breakthroughs in transformational change process because they mark an end to unfettered innovation, and the rising importance of more focused and strategic agency, aimed at securing resources and support (Westley et al. 2013). In this sense, social enterprise is no longer a subordinate form of production but an indispensable

tool for creating sustainable communities. This is seen in its ability to integrate social justice and economic progress, through job creation, particularly in deprived communities (Mswaka 2015). Recurring patterns in the approaches and instruments of localised social innovation indicate that policy making has traditionally been guided by the concept of building comprehensive institutions and regulations top-down. To be effective, socially innovative concepts either have to make it to the top of political and professional elites that design far-reaching reforms or find a niche at the margins (Nicholls et al. 2015). Therefore, this new concept stresses the relational and sociological factors and shows that the social economy sector lies between the market and the public sector (Sorin-george et al. 2015).

As social enterprises push for legitimacy, a combination of the private use of dwellings with collective property of neighbourhoods begins to be viewed as successful socially innovative initiative of the social economy (Etxarri et al. 2015). This renewal of the collective bargaining power helps to explain the differences between informal groups, and how social capital is developed into capabilities (Camps & Marques 2014). By employing a transitions perspective, critical risks to utility assets and social equity are identified to determine the market and regulatory context in which such service-oriented business models might emerge and flourish (Quezada et al. 2014). Shared visions, goals, narratives and codes are critical in characterizing differences in social capital. From a micro-perspective, social theory dimensions are maximized by promoting a multiple entity-based approach (Yoon et al. 2015). This social practice-oriented approach puts a stronger focus on the disruption and de-routinisation of practices that are relevant for the reproduction and stabilisation of current systems (Jaeger-Erben et al. 2015).

Section summary

Following on community participatory approaches highlighted in the previous section, we observe the role of individual agents and agency within social innovation. The failure of missing coordination at a policy-governance interface proves that an analytical framework is needed to show how these different actors come together to guide transitions. This proactive behaviour can assist in adopting resilience strategies forming new narratives guided by a pathways approach to steer future transitions. This strategic agency can be attained through social enterprises that can use this collective bargaining power to promote a social-practice oriented approach. The questions arising in this section is: *what process pathways can be observed in social enterprises that affect agency of the urban poor?*

2.3.3 Strategies designed toward equitable access to resources

In Table 3, the category is divided into four sub-categories emerging from the publications. The summaries begin by looking at aspects of space, technology, models and lastly energy resources.

Table 2.3: Summary of equitable access category arranged according to emerging sub-categories

STRATEGIES FOR EQUITABLE ACCESS TO RESOURCES			
	References	**Journal**	**Contribution**
01	Pereira, L., Karpouzoglou, T., Doshi, S. & Frantzeskaki. **2015**	International Journal of Environmental Research and Public Health	Emergence of a "**safe space**" approach as a collaborative environment towards enacting Social-ecological transformations
02	Bafarast, A, Z. **2015**	Journal of Planning Literature	A guide for a more informed design and analysis of **spatial strategy** practices
03	Bas, E. & Guillo, M. **2015**	Technological Forecasting & Social Change	Forward Looking User Experience-3D can assess the extent to which the products, services/process **designed** by someone will meet the expectations of their end user and beneficiaries
04	Criqui, L. **2015**	Habitat International	Proposes a new form of urbanism, adapted to developing cities; a form of **space appropriation** by utilities that contravenes conventional planning & relies on alternative social dynamics of co-production, participatory and normalisation
05	Khayyat, N. T. & Dong-Lee, J. **2015**	Technological Forecasting & Social Change	Developed a new measurement tool of innovation called a **technological capability** index (TC-Index)
06	Phillips, F. & Linstone, H. **2016**	Technological Forecasting & Social Change	Philosophy of **technology** forecasting and assessment
07	Desmarchelier, B. & Fang, E. S. **2016**	Technological Forecasting & Social Change	Markets might start experiencing faster diffusion rates following the increase in global and local connectivity brought about by **new technologies**
08	Bell, S. **2015**	Progress in Planning	That **technical codes** of urban water infrastructure show strengthening of the master-servant discourse and alongside movements towards partnership
09	Fuenfschlling, L & Truffer, B. **2016**	Technological Forecasting & Social Change	Introducing the concept of institutional work as a practice-oriented perspective that enables a more diversified analysis of the internal dynamics of socio-**technical systems**
10	Estensoro, M. **2015**	Systemic Practice and Action Research	New theoretical insight and **new practical knowledge.** The identification of common elements between social innovation and action research
11	Katko, T. S. & Hukka, J. J. **2015**	Procedia: Economics and Finance	A structured framework for water services **development**
12	Kulinkina, A., Kosinski, K. C., Liss, A., Adjei, M. N., Ayamgah, G. A., Webb, P., Gute, D. M., Plummer, J. D. & Naumova, E. N. **2016**	Science of Total Environment	regression **model**
13	Nzengya, D. M. **2015**	Cities	The delegated **management model** may offer an alternative to ensure that the urban poor have access to services
14	Furlong, K. **2015**	Geoforum	By taking an approach to urban entrepreneurialism that engages with social reproduction and consumption, it is argued that a richer understanding of the contradictions inherent in using water supply as a **vehicle** for **economic**

			growth can be achieved
15	Ekpeni, L., Benyounis, K. Y., Nkem-Ekpeni, F., Stokes, J. & Olabi, A. G. **2014**	Energy Procedia	Biomass as a leading **energy** producing **resource**
16	Kalyani, A. K. & Pandey, K. **2014**	Renewable & Sustainable Energy Reviews	Current challenges and barriers of municipal solid waste **management**
17	Moreda, I. L. **2016**	Renewable & Sustainable Energy Reviews	The potential for methane production as a viable option for **energy generation**
18	Kamp, L. M. & Bermúdez-Forn, E. B. **2016**	Renewable & Sustainable Energy Reviews	Provides an up-to-date review of status of and **bottlenecks** and **drivers** in the biogas sector

Space

Urban space can no longer be considered as a community asset which means that any community that moves for a social economy approach is set against the political economy (Ziafati Bafarasat 2014). The need for systemic transformations can offer reflexivity and transparency in collective processes of imagining and enacting sustainability pathways (Pereira et al. 2015). This new form of urbanism, adapted to developing cities creates a form of space appropriation by utilities that contravenes conventional planning and relies on alternative social dynamics of coproduction, participation and normalisation (Criqui 2015). A gap may appear seriously affects the stability of the organizations themselves, and consequently their own future (Bas & Guillo 2015) which would give rise to much needed transformation.

Technology

The level of innovation for developing countries has been described as scientifically low and can benefit from relying on heavy investments in human capital enhanced by education and training (Khayyat & Lee 2015). This can promote higher collectivism and power distance which leads to faster diffusion rates due to an increase in global and local connectivity brought about by new technologies (Desmarchelier & Fang 2016). Heightened awareness has seen to a growing dissatisfaction with governance on one hand and a rise of eager local initiatives on the other (Phillips & Linstone 2016). These socio-technical transitions characterized as processes of institutional change, are a suitable means for the analysis of agency in transition processes because they conceptualize agency in interrelation with structures (Fuenfschilling & Truffer 2016). An example of the Water Sensitive Urban Design that has been widely championed by designers and planners exemplifies a sustainable approach to urban nature, that provides a useful foundation for more moving beyond drainage to water supply and wastewater technology (Bell 2015).

Energy resources

The introduction of wastewater technology is prudent as cost of converting biomass energy and implementation is seen to be easily affordable in ensuring biomass takes the lead as an energy producing resource (Ekpeni et al. 2014). The energy potential of Management of Solid Waste can play an important role in ensuring sustainable development towards attaining energy security (Kalyani & Pandey 2014). The application of anaerobic technology presents an interesting opportunity for energy recovery from organic matter and achieving a renewable energy generation (Moreda 2016) and has been found that there is a gradual emergence of biogas as a niche technology (Kamp & Bermúdez Forn 2016).

Models

In order to be able to provide sustainable water services, there is a need for proper technological, economic, institutional arrangements, social innovations as well as conventional solutions (Katko & Hukka 2015). More structured approaches based on research and realities will be needed for these institutions, infrastructure and services production. In this case, facilitation for social innovation requires constantly changing contributions that involve by *knowing how* to create a social environment in which democratic and inclusive dialogue supports a self-managed transformation process (Estensoro 2015). By taking an approach to urban entrepreneurialism that engages with social reproduction and consumption, it is argued that a richer understanding of the contradictions inherent in using water supply as a vehicle for economic growth can be achieved (Furlong 2015). This was seen where one case analysed water consumption of existing metered Piped Water Services using a regression model. This approach may enable more efficient planning of community-based water supplies and support sustainable development (Kulinkina et al. 2016). In other cases where relocating slum communities was seen to be an expensive undertaking, arrangements such as the Demand Management Model were seen to offer an alternative to ensure that the urban poor have access to services (Nzengya 2015).

Section summary

Spatial appropriation through water and sanitation in a systematic transformation enacts sustainability pathways. These pathways are assisted by connectivity in a heightened awareness of socio-technical transitions that are seen as a suitable means for the analysis of agency. Examples of wastewater technology are seen to emerge as niche technology adapting to models of sustainable water services. For poor communities in informal settlements, this can go on to promote a democratic and inclusive dialogue. The questions is then, *to understand how these social enterprises inform spatial appropriation for water and sanitation provision?*

2.4 Chapter Summary

The survey done highlighted systematic approaches through interpretive frameworks and models attributed to Giddens (Bettini et al. 2015; Fuenfschilling & Truffer 2016; Westley et al. 2011; Nicholls et al. 2015; Avelino et al. 2014; Jaeger-Erben et al. 2015; Cajaiba-Santana 2014; Gillard et al. 2016) seen in several of the cases analysed. Institutional boundaries were sometimes seen as barriers that could be traversed through analytical frameworks and sustainable water services models. These modes supported socio-technical transitions where sustainability pathways offer new narratives to explain societal transformations.

If we accept that users, and in this case the marginalised community, are important then the space allocated to them and the place created by them are equally important. Architectural forms can, in this context, be used to define space, by looking at what is known; regulate space by observing norms and rules that formalize standards; and validate space by understanding societal values, respect and hierarchies that attach significance to a setting's social practices. New spaces emerge in the process of urban transition to demonstrate the architectural discourse that has shaped architectural production and the production of space rich with meaning.

The next chapter uses this sense of belonging or a means of transferring custodianship, to develop a theoretical approach based on Lefebvre's (1991) *right to the city*. Through the validation of the marginalised community's right to participate, this study highlights the role of members in these communities. Similarly, the design, development and implementation of public services point to the milestones during the process of space production in a project under investigation. This interplay is what Lefebvre (1991) calls the *dialectical production of space*: the triad of social practices, representation of spaces, and spaces of representations- the theoretical foundation of this study.

CHAPTER THREE
CONTEXTUALISING THE RESEARCH THEORY

3.1 Introduction

The right to the city, as introduced in chapter one, highlights building capacities and asserting agency. The role of built Water and Sanitation Services facilities in promoting these rights is vital for inclusivity in the city. The subsequent literature survey offered a critique of these facilities as social innovation interventions and social enterprises as the driving source. This foregrounded the need to break from past norms of commercialisation and create viable platforms for path-breaking transition. Therefore, it can be said that marginalisation of communities in society can greatly affect access to public services. This lack of reliable water and sanitation services decreases the internal capacities of community members and inhibits development. Needs within the community such as water, can empower members. This natural and finite resource, often taken for granted by most, is the foundation to improved settings in a community. In these settings reflection of social relations to provide a platform for interaction. When this engagement occurs, meaning in both physical and social boundaries between different communities that emerge, can help assert agency to marginalised groups. In this chapter we observe the ability to apply Lefebvre's theory of space production to use the everyday activities of marginalised groups using WSS facilities to highlight the right to "**be, dwell** and **participate"** (Pugalis and Giddings, 2011).

3.2 Theoretical framework

Society is the real creator of the elements associated with architecture and construction. It satisfies its needs and helps to adapt it to the environment. Architects take advantage of conventional elements existing in a specific socio-cultural context and also create new ones, with new significance, thus introducing their own creative elements. From this point of view, we can see how the roles of architect and inhabitant are not so different. Both parties intervene in a process of selecting and creating spatial and architectural reality (Llopart, 2000). Because this perspective focuses on dynamic relationships between meanings and actions, it addresses the active processes through which people create and mediate meaning. These meanings arise out of actions and in turn influence subsequent actions. This perspective assumes that individuals are active, creative and reflective, and that social life consists of processes (Charmaz, 2006; Blumer, 1969).

Meanings are seen as social products, as creations that are formed in, and through the defining activities of people as they interact. This use of meaning by the actors occurs through a process of interpretation that leads participants to act as they do at their stationed points in the social network, and thereby have their own setting in a distincitve localised process of social interaction (Charmaz, 2006). Here, "Lefebvre's radical right to difference

can be applied as a conceptual and political tool to mobilise against economic dominance and urban oppression. Space does not only reflect the cultural identity and character of an area, it also shapes identities and dispositions" (Pugalis and Giddings, 2011:283). Therefore a new form of joint action is seen to always emerge out of, and is connected with a context of previous joint action. This takes into account the linkages with preceding forms of joint action. The participant goes through self-reflection and makes indications where behaviour arises out of the interpretation made through the process of self-indication. In this light, the participant who engages in self-indication is not merely responding, but acting (Blumer, 1969). Therefore as people interact and create new definitive meanings of the objects in their world, changes occur that result in a social transition within the community (Westley, 2008).

Social initiatives in marginalised communities are usually initiated by external agencies such as government institutions, NGOs and social enterprises. These organisations are involved in a top-down approach to dealing with 'socio-economic problems' (Cowen, 2005; Schalcher, 2009). Although their short-term goals involve community participation in the construction process, the initiatives lack resounding meaning in the community members' lives. This results in a lack of transfer of pertinent knowledge to sustain the socio-economic growth, and attain objectives which can maximise positive environmental impacts of the social initiatives (Phaliso, 2012). Environmental challenges intrinsically link the way communities live and depend on the natural environment. The supply of resources and ecosystem services sustain health and wellbeing, and ensures that economies grow. Therefore, the appropriation of a setting and the supply of resources and services have a direct impact on the degree of inclusion a community enjoys in the wider society. The "urban underclass, often alienated as a form of residual community, out of sight of affluent enclaves or displaced elsewhere to provide access for the capitalist's elite to accumulate by dispossession," receive different service provision from local government (Pugalis and Giddings, 2011:283). Subsequently, this emergent marginalisation is seen to be related to the inequitable provision of basic services to the communities in the setting.

A Mentality of dispossession (Pugalis & Giddings, 2011) creates a gap in the ability for a community to control spatial production. This can emanate from tensions and contradictions that occur during transformation (Soja, 1989). People's actions control change in societal structures and patterns. Therefore, culture evolves because of changes in patterns and the meanings given to objects in their world, and the resulting dynamic interaction (Giddens, 1979). The signification of these seemingly disparate objects (social initiatives) belong to a larger frame of reference, understood wholly or in part by the marginalised community. This results in new objects which allow for new interpretations that can be modified into the natural and interior environment (Lefebvre, 2014). The relationship between the built and natural environment is mediated, by individuals who act as custodians of the natural

landscape. These individuals take up ownership of the interior environment and gain access to the flows of energy, information and resources within the two interdependent systems (Lyle, 1994). Social networks build resilience in the built environment which constitute communities. The built environment matters, as it is a physical, social and symbolic anchor to everyday habits. It is a familiar framework of orientation, and a support system for social networks (Carpenter, 2013).

3.3 Expounding Lefebvre's triad of space production

The theory of space considers everyday life as a mode and means for transforming settings. Society and social products in the process of social interaction, represent the aspects to be foregrounded. Though these social products differ from one cultural setting to the next, processes experienced by marginalised groups are similar. The following sections look at each aspect of Lefebvre's triad of space production as a way to validate its relevance in studying the participation of marginalised communities in place-making. Thus, "social practice [is] defined as the situated activities of social actors, which happen in the flow of daily life [and] integrates the concepts of agency and social structures" (Delormier, Frohlich & Potvin, 2009: 218).

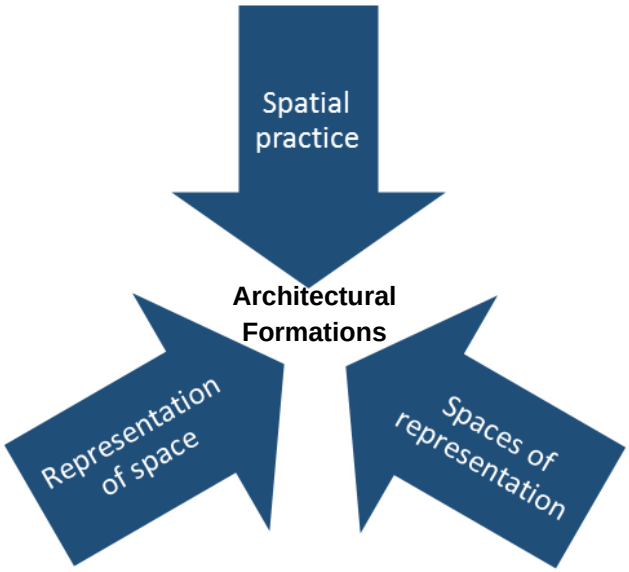


Figure 3.4: Adapted representation of Lefebvre's Triad of production of space (Pugalis & Giddings, 2011).

3.3.1 Defining new social practices in existing spaces THE RIGHT TO BE.

Settings bound by the social practices that appropriate space are controlled by the political agency in society. Using policies, standards and building codes, networks of activities are secured in spaces defining social practices. The space appropriated, has within it communities excluded by their nonconformity (difference) which then create '*emergent spaces'* that are considered informal by the political agency. Communities, marginalised by their choice of social practices, occupy and redefine the previously appropriated space. As

documented by Amenya (2007) “these informal sectors are considered illegal by government and the formal sector.” This new social practice, which breaks away from the norm is inappropriate and unacceptable in the existing community. This marginalised group within the community are excluded from exercising their right to the city due to their choice to be different. These areas, previously abandoned by the intended users and left neglected, nurture a new emerging social practice. Their *right to be* (Lefebvre, 2014) sees their new social practice become a norm in present spatial appropriation, even though the boundaries of rules and regulations confront their right to be.

Disuse of space can similarly be caused by a slow progression in changes of interaction with the natural landscape. The water hyacinth which first appeared in Lake Victoria in late 1988 owes its rapid spread partly to the rich availability of nutrients (Kateregga & Sterner, 2007: 363). Its growth, stimulated by the inflow of nutrient rich water from urban and agricultural runoff, deforestation, products of industrial waste and insufficient wastewater treatment, shows a disuse of space (Theuri, 2013). The new social practices of negative sanitation disposal have led to renewed interactions for the local community and to the emergence of a new socio-economic group. The government’s inability to stem the spread of the water hyacinth has forced communities by the lakeside to use the weed for economic initiatives such as. weaving and furniture production (Amunga, 2012). The negative connotation in this instance is also derived from the community’s misappropriation of space. By changing disposal of wastewater to flow into the lake and increasing nutrient levels, new interactions and activities have emerged. The difference seen is caused by the broader society although only the fishing communities seem adversely affected, restricting their efforts to fit back into the wider society.

Some new social practices emerge from an economic disparity which put the political agency at the high-economic bracket and the marginalised communities at the other end of the spectrum. Social relations, between both communities and within each community, are severed due to this difference. Social networks with the most potentials for resiliency are rooted in the built environment, with the nature, strength, and quantity of social ties, in this instance, influenced by development patterns (Carpenter, 2013). Because of the costs of participation, the poorest are less likely to be engaged in city government, community organisations, or civil society. The urban poor in developing countries who vote in order to secure basic public goods and services, lose out on an expression of policy preferences for this type of change (Desai, 2010). “The relationship between space and poverty, and access to economic and social opportunities through well integrated spaces, has been associated with a higher incidence of wealth at the smallest levels of analysis” (Carpenter 2013:14). Therefore, costs that assist in the governing of social initiatives for the marginalised communities when associated with agencies outside the community, take control and power

out of community members' hands. This complicates representation in the setting of emerging social practices, and any changes made do not emerge from the marginalised community itself.

3.3.2 Representation of 'new' informal spaces THE RIGHT TO DWELL

Social practices especially in urban settings are difficult to define and contain into a homogenous character of space. According to Soja (1989), the possibility of independent conceptualisation and inquiry, do not produce an unquestionable autonomy or rigid separation between the physical, mental and social space. Soja views the production as proceeding from these three spaces, which interrelate and overlap, where the defining interconnections are the areas for contention between formal and informal use and the illegal appropriation of unused or unoccupied space.

The planners of space go about producing the material base where the prescribed social activities should take place. The users, and in general, the public only participate by neglecting their difference in the mostly homogenous space provided. This would align with Soja (1989:122) when he states that "spatiality, as a product of transformative processes is associated with social tensions and contradictions." It is in these social tensions where the emergence of new informal spaces occur and Lefebvre's (1991) "representation of spaces" regulates the reassertion of social practices in space. While these formerly 'dead' spaces that are unused, hosted skateboarders whose subversion of the South bank can be seen as appropriation. New functions, previously unanticipated by the original architect are created. The reality is that public space has never been accessible to everyone in society (Herring, 2008). This claim infringes on the users right to the city in that it gauges admittance to spaces according to one's adherence of the social practices promoted there. The created spaces fit within the larger frame of reference and gain relevance by asserting *the right to dwell* (Lefebvre, 2014).

3.3.3 Spatial symbolism signifying meaning for marginalised communities THE RIGHT TO PARTICIPATE

Place attachment is based on past interactions and the potential for future interactions between human beings and their physical surrounding. "Geographic space is the stage in which we assign meaning and where social interactions are set. The bonding of people to place occurs through personal, group, or cultural processes, notably those related to social networks. Rooted in the field of architecture, space syntax argues that the function of society follow form, or that various social phenomenon are likely to occur because of physical structure" (Carpenter, 2013:13). The signs and symbols assigned by society in the built environment occur due to the social practices observed in the setting. This can cause different scenarios in adjacent communities, where dominant groups oppress marginalised

groups. In some instances marginalised groups are labelled as deviated groups to be aligned back to the wider society.

Cartels in Nairobi County are believed to control water resources and any investments or initiatives to provide alternative access in an attempt to improve access to community members are often thwarted (Moraa, Otieno & Salim, 2012). This resultant social practice can be traced back to the way architectural order places services in these settings. Functions in the setting of marginalised communities have followed the arrangements common in architectural formations. These formations include any human intervention designed to negotiate between the inhabitant and the natural landscape. Community participation in allocation of water access points have in some instances been seen to be no more than just "being responsible for the pipe work from water chambers [provided for by the WSP] to their water selling points" (Peal & Evans, 2010:5). This attachment of significance by allocating and giving authority to groups within the marginalised settings creates a gap for a new social and material order. The material order -the built environment- is conceptualised and constructed within a boundary formalised by the deviated social practices emerging from the setting. To this end, the informal space housing the water access points is embraced within this context for the marginalised community using the setting. In this emerging context, the *right to participate* is ever harder to actualise without a clear understanding of the perceptions and meanings held by the community members. Their perceptions are strengthened further by the built interventions providing water and sanitation services.

3.4 Chapter summary

In this chapter, Lefebvre's triapartite theory of space production was applied to the context of marginalised groups in society. This marginalisation is seen to not only arise from poverty, but also from a difference in social practices. This need for conformity reasserts Lefebvre's call to reassess the relationships between people and space. In chapter four, the cases chosen are used to observe relations between poverty, space, and access to reliable water and sanitation services provision.

CHAPTER FOUR
THE RESEARCH METHODOLOGY

4.1 Background to the methodology approach

Understanding perceptions of people as they navigate the urban fabric, in the study, can be better approached through qualitative research design. As a means for pathway analysis of Water and Sanitation Services (WSS) provision through facilities implemented in marginalised settings, viewing the intended research setting as insider allows an understanding of how people interact with social phenomena (Creswell, 2007). This is because qualitative reseach takes a subjective approach that strives for a better understanding between human interventions and the end-user (Babbie & Mouton, 1998). To assist in the study's inquiry, Lefebvre's *theory of space* is used to guide the approach to our critical reflections on the city, everyday life and the positioning of marginalised communities in WSS delivery (Pugalis & Giddings, 2011). This is an appropriate research trajectory because Lefebvre's writing is concerned with the meanings attributed to the individuals experiencing the space being studied (Lefebvre, 2008).

As part of our research approach we intergrate both case study design (Yin, 2009) and Grounded Theory (Charmaz, 2006). In the data collection process the case study approach is used to collect data in both the initial and successive cases. In the intial sampling, the cases are analysed using both case study design (Yin, 2009) and textual analysis (Silverman, 2013). The resulting pathway analysis in the initial data analysis is used to assess milestones achieved in the successive samples. Constant comparison acts as a simultaneous and concurrent process of coding and analysing the collected data (Partington, 2000). This process highlights areas of path-breaking transition in the pathway developed from the initial analysis, and provides foundational basis for a spatial appropriation model.

4.2 Research design

Drawing on Lefebvre's (1999) statement that *space is being socially constructed* and as a guide to an interpretivist paradigm, this study situates public facilities for water and sanitation in marginalised communities. The study uses two approaches of case study research and Grounded Theory. The case study deisgn is used to expound on the cases chosen and specifically in the initial samling and analysis to provide a pathway with which to analyse the successive phase of the study. In the successive analysis Grounded Theory is preferred as it provides "an explicit method for analysing process, which can be seen as a temporal sequence that may have identifiable markers with clear beginnings and benchmarks" Charmaz (2006:10). By identifying change in a community through appropriation of spaces for social initiatives, a relationship between the changes in routines and beliefs systems and the interior environment can be determined. Thereafter, these emerging characteristics of

space can act as indicators that can be studied effectively, to identify changes in the setting and provide discernible links to the effects of spatial development in marginalised communities. Because the present represents the past the experiences and outcomes of a specific event, it has some degree of interdependency with the persons involved (Charmaz, 2006; Blumer, 1969). To this end, marginalised settings are directly influenced by the occupants in the setting, as well as the political agencies of power at the time of appropriation.

The transfer of knowledge between the community, with its routines and belief systems, and the agencies of power that oversee development in the setting is worth noting. The Lefebvre triad integrates human experience, knowledge and the imagination by understanding:

a. *Spatial practice* as 'perceived' to be tangible, generated and used;
b. *Representations of space* as 'conceived' of mental concepts, bureaucratic abstractions and rational knowledge;
c. *Spaces of representation* as 'lived' and experienced, culturally and symbolically coded with meanings (Pugalis & Giddings, 2011).

This tripartite view of space is not so much a model as it is a pathway towards one. This concept provides a suitable framework for a project of this nature. For example, *the right to the city* for citizens of all social standing is vital especially because of its focus on water and sanitation services. The provision of these services is a bone of contention in marginalised communities of Nairobi and Kiambu counties, where a large number of the population live in informal settlements.

Figure 4.2 below illustrates the process applied to the research approach used in this study. The data collection started in 2013 uses a case study method to idenfity cases in both the initial and successive phase which run from January to June 2014. The data collection and analysis is iterative, refining both areas of collection and the information being analysed. The memo writing coincides with the analysis, whereby emerging codes become concepts, and these concepts later translate into categories. The analysis process in the initial stage uses both narrative analysis and pattern matching to draw out the pathway diagram. In the successive stage the analysis begins with a line-by-line coding of textual empirical data, which are then presented in the form of memos. The final concepts are used in axial coding in order to create an empirical pathway model that demonstrates the appropriation of space observed in the settings.

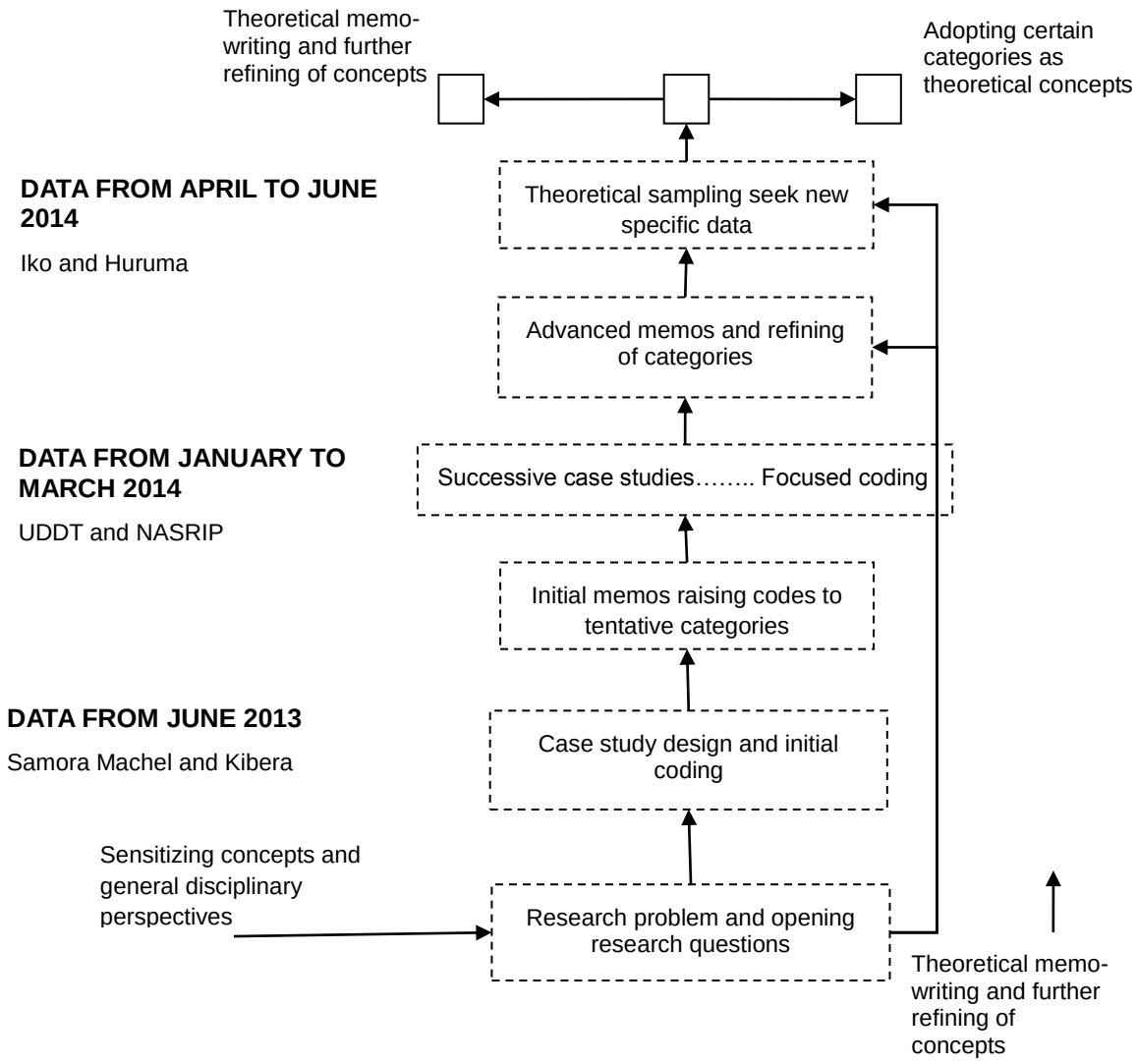


Figure 4.1: Adapted research process (Charmaz, 2006)

Because data collection and analysis are not independent or separate activities, the research process is itemised to follow an iterative process shown in figure 4.2. Case study research is used when trying to understand a real-life phenomenon in depth (Marshall and Rossman, 2006). In this study in conjunction with a Grounded Theory approach, case study research design using Yin's (2009) approach is applied by: a) The case study protocol; b) Itemising case study evidence. The resulting evidence collected is then analysed using Grounded Theory and the subsequent questions arising are then used to identify successive samples. The same the same approach used in both the case study protocol and itemising case study evidence.

4.2.1 The case study protocol

Sampling

The units of analysis were chosen using purposive sampling technique which according to (Babbie and Mouton, 1998) is done to align the cases chosen to the objectives of the study.

The characteristics of the initial chosen cases are compared to aspects seen in social innovation as outlined in chapter two.

Overview of the case study projects

In 2005 the Tsonga Environmental Resource Centre was awarded a Bronze Award in the Holcim Foundation's first competition for sustainable construction projects. Additionally, 2007 the centre received a CIA Award for Architecture from the Cape Institute for Architecture, South Africa (Schalcher, 2008). It was initiated to provide food security through a vegetable garden; improve socio-economic standards through a recycling centre; and act as a space for community gatherings (Cowen, 2005). In Nairobi, Tosha Biogas Centre was chosen. This project was conceptualised by Umande Trust, and implemented in Kibera from 2007, and currently has similar running projects. The Biogas Centre provides cooking and lighting facilities; toilet facilities at minimal charge of Ksh10; communal space for gatherings; and a plot for a vegetable garden.

In the successive sampling, due to an inability to continue with data collection in Cape Town, the case studies chosen were limited to Nairobi. In this respect Thika UDDT, Gikomba Fresh-life toilets, Huruma biogas centre, and Limuru Iko Toilets were chosen. These were suggested by both the Ministry of Water and Irrigation under the NASRIP program, and AWSB which is the Water Service Board servicing both Nairobi and Kiambu Counties. Characteristics of these projects were seen to align to the objectives as itemised in the consent letter.

Objectives

The aim of the study as mentioned in chapter two is to, assess the provision of water and sanitation services and their influences on community capacities of informal settlement occupants in Kenya's Nairobi and Kiambu counties. Therefore the case study objectives are itemised as the following:

- Investigate community participatory approaches in water and sanitation projects
- Outline process of knowledge transfer within stakeholder engagement
- Discuss design strategies for equitable access used in the chosen cases

The path-dependent process that emerges culminates in an evolving view of transitional social innovation that is further tested for occurring stages of path-breaking transition in the successive cases chose.

Case study issues

The initial sample cases chosen are aligned to characteristics of social innovation as itemised in chapter two. These aspects together with the fact that the projects were initiated by a needs-driven services approach in marginalised settings added to their applicability.

Additionally, these centres provide an avenue for assessing provision of water and sanitation services and their influences on capacities of marginalised communities.

Field procedures

- *Presentation of credentials*

This involved introducing the research topic at the Non-Governmental Organisation in both Nairobi and Cape Town. An overview of the intended respondent participation and interaction with the investigator is given.

- *Access to the case study sites*

An ethics consent form [appendix: DC01], clearly stating the objectives, goals and desired outcomes of the research were tabled out for a contact person to review and sign. This was to ascertain that the participants of the research are informed of the investigator's intentions and their voluntary participation in the research study. The consent is attached as part of appendix A.

- *Sources of data and procedural reminders*

The source of data needed for the case study will be acquired from both the institutions that initiated the projects, and the community members using the six water and sanitation facilities. This will only include individuals who are directly involved in the development and management of the water and sanitation facilities.

Case study questions

The approach to the setting in the next section is done using the following research questions:

1. What types of community participation occur in social initiatives that lead to stakeholder engagement?
2. Which tools, processes or techniques for modifying access to Water and Sanitation Services (WSS) systems assert custodianship to marginalised communities?
3. How do design strategies inform building environment features that guide marginalised communities toward socially equitable access to Water and Sanitation Services?

Consequently, to align the desired outcome of the research with the information to be gathered from the participants, Yin's (2009) level of questions was applied to the data collection strategy. Therefore, accordingly a level 1 question is asked directly to the interviewee; verbal line of inquiry, while level 2 questions are asked of the individual case to the investigator; mental line of inquiry. Figure 4.9 tabulates the verbal line of inquiry and mental line of inquiry in addition to suggesting potential sources of data.

Table 4.1: Matrix of reposdents to be approached and corresponding objectives

		Government employees (concept)	Government employees (collaboration)	CBO committee members		
Verbal line of inquiry	Types of community participation		X	X	**Mental line of inquiry**	Are the occupants involved in the appropriation of the space and facilities?
	Assertion of custodianship	X	X	X		Do the community members see the value in the placement of the facilities?
	Use of Design strategies for equitable access	X		X		How does design play a role in promoting inclusion through social innovation projects?

A guide for the case study report

The case study report is embedded in the data analysis and implication of knowledge outcomes, where a discourse of the data collected and literature survey is done. Using 'the production of space' (Lefebvre, 1991) as a lens to review how transitional social innovation can be used to address path-breaking transition in marginalised settings.

4.2.2 Review of the planned data collection

WSS projects that have received uptake from the communities they serve were located in Kibera informal settlement in Nairobi while in Samora Machel, Cape Town a change in political representatives resulted in closure of the project. The government and UN-Habitat development project for upgrading Kibera settlements is a good gesture but it falls short of a comprehensive plan which recognizes the challenges of the settlements and commits to changing the living conditions of the people (Mutisya & Yarime, 2011). This recognition can be done by accepting that the perceptions of communities in these settings can influence the implementation of the project. To outline the process, an initial data collection was arranged to help in developing a pathway analysis of social innovation. The initial data collection was to observe and note emerging concepts in the setting which speak to Pugalis and Giddings's (2011:283) claim: "sentiment that the political cry and demand for a renewed right to urban life is not be reduced to a renewed economy, but to a reclaiming of the city by way of entry (access) and the right to dwell (be). It offers scope to (re)produce the city in new and imaginative ways through participation. Therefore, Architects may find *the right to the city*, interpreted as a theoretical concept, to be a powerful democratic design tool".

The WSS projects chosen, for initial data collection, ranged from basic public toilets (in Samora Machel) to bio-centres (in Kibera), developed to act as alternative energy sources within the settlement. These projects are based on loose stakeholder engagement hierarchies outlined by managing NGOs under CBOs. The main running and management was done under civic and social enterprises comprised of stakeholders outside the community that they served. Therefore the levels of participation were relegated to tokenism and bureaucratic consultation not truly representative of the setting. Members of the communities are not given the opportunity to learn and disseminate knowledge to further develop their setting. However, the economic aspect of the WSS projects implemented in marginalised settings has added monitory value to the community. Unfortunately, the ability of members to embed resilience strategies in their subsequent places that emerge from these projects is lost. Therefore any transfer of ownership to local community members failed because of lack of identification from the conceptualisation and implementation phases of the WSS project.

4.2.3 Rationale for analysis approach of the study

In this study the initial sample is analysed using the case study analysis approach of pattern matching. The use of pattern-matching analysis is "considered as one of the most desirable strategies for analysis, as a technique that compares an empirically based pattern with a predicted one" (Tellis, 1997: 5). In the initial analysis the predicted patterns used are those itemised from both the Typology of Social Innovation (Moulaert & Deveinquire, 1994) and The Adaptive Cycle (Moore, et al., 2010). The following successive analysis uses the pathway that emerges to assess and compare how individual and collective run facilities fit within this pattern. "Thematic analysis, a naturalist version of content analysis, [is] combined with Grounded Theory and the constructivist approach of narrative analysis" to form a deeper understanding of how marginalised communities view facilities for sustainable development (Silverman, 2013:267). According to May (2012) the sequencing and structure of narratives can be better understood through close reading of text, to focus on causality and the links formed by individual narratives. This linking of events ensures that there is no non-random sequence of events, but by recording past experiences the study can see how "people lead storied lives". This interpretive approach looked at in the context of marginalised settings, foregrounds both the individual narrative that higilights a identity and a sense of self; and collective narratives by looking at government documentation of the facilities.

The thematic analysis results in emerging concepts that drive the definition of spatial appropriation; the hybrid narratives within the complex platforms of stakeholder engagement; and the community-based organisation promoted by government institutions to promote a validation of self by marginalised groups in society. The resulting path-breaking transistion model, that illustrates the juncture where the empirically based pathway is seen to emerge.

This model highlights the social structures during the appropriation of WSS facilities in marginalised settings.

4.3 Setting ground in the field of study

The initial data lays the foundation for understanding social practices in the appropriation of space in marginalised communities. The adaptive model adopted from the resilience theory forms the conceptual framework for social innovation. The framework follows through four phases: release, reorganisation, exploitation and conservation (Moore, Tjorhbo & Holroyd, 2010). For Westley (2008), these phases are further identified through the stages of pattern recognition, building and brokering relationships as well as knowledge and resource brokering, and network charging. This cycle has areas of intersection with the typology set out by Moulaert and Devinquire (1994). The idea that emerges results from communities recognizing that change is needed in the existing processes of water usage. Once this happens, stakeholders engage in participatory activities within their networks in a bid to uncover the full potential of community members and build their capacity. Through training programmes and workshops, skills are dispersed to serve the wider community. Once the system has been adapted to enable the exploitation of all its resources, regenerative design relies on a cyclic model to guarantee the sustainability of the interventions developed (Westley, 2008).

Table 4.2: Comparison of conceptual frameworks used for data collection

TYPOLOGY OF SOCIAL INNOVATION **(Moulaert & Devinquire, 1994)**	**ADAPTIVE CYCLE** **(Moore, et al., 2010)**	**SOCIAL INNOVATION FRAMEWORK** **(Westley, 2008)**
Community mobilisation	Release	Pattern recognition
Economic strategies and social policies	Re-organisation	Build and broker relationships
Vocational training of local community	Exploitation	Knowledge and resource brokering
Job creation	Conservation	Network charger

Communities living in marginalised areas do not build emergent settlements, but are allocated a space by the area chief. These allocated parcels of land are owned and controlled by the government and the members of these villages are screened to validate displacement or lack of land. When approaching these settings, the first point of contact is the local government body. Drawing on the research problem, when appropriating a space in settings of marginalised communities, social relations amongst members and the agents who influence change should be encouraged. The interaction between members in society and the difference in service provision dictates the degree of inclusion that communities have

within their setting. Therefore the study approaches the need for water and sanitation services from the perspective of the implementing agency to the user.

Sources of evidence used in both initial and successive data collection

These are adapted from Yin (2009) and are also in line with Charmaz (2006).

- *Interviews*

During the unstructured interviews and in-depth interviews an interview schedule was used to guide the conversation. This included both level 1 and 2 questions which are used in reference to Yin's (2009) principles of questioning interviewees. The level 1 question is asked directly to the interviewee (verbal line of inquiry), while level 2 questions are asked of the individual case (mental line of inquiry).

- *Observations*

Direct observations range from formal to casual data collection activities and involved observations made during meetings, facility visits, and interviews (Silverman, 1993). This included formal observations of: facilities in a single homestead; facilities in a densely populated residential area; facilities in a public market; and facilities at a bus-stop.

- *Document analysis*

Analysis of a terminal-evaluation report done by AWSB for the purpose of reviewing the water and sanitation program in marginalised settings.

- *Physical artefacts*

New systems for sustainable resource management to promote change in how marginalised settings deal with sanitation were observed.

- *Archival records*

Analysis of schematic drawings of the Iko Toilet facilities.

- *Journaling*

Records of the researcher's experience is documented in a reflective research diary, which is later incorporated into the analysis in Appendix E.

Case study database

This includes a documented analysis in the chapters of the discussion and implication of the knowledge outcomes. The case study database, in *Appendix DA02*: *Navigating the data analysis using Grounded Theory*, is described in four components:

- Tabular materials: itemised as line-by-line coding and focused coding
- Analysed terminal evaluation document

- Notes written as memos during comparative studies of the cases
- Narratives emerging from analysis of primary data and the reflexive journal

Maintaining a chain of evidence

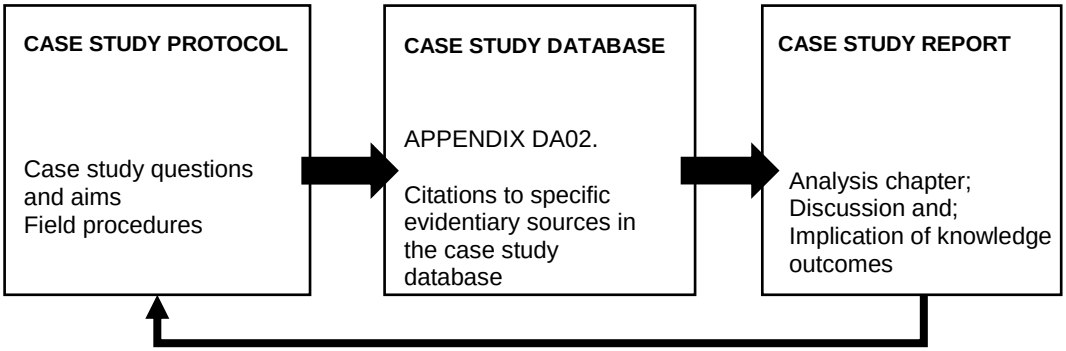


Figure 4.2: Adapted chain of evidence (Yin, 2009:45)

The chain of evidence as shown in Figure 4.2 is a tool that can be used "to address the methodological problem of determining construct validity, thereby increasing the overall quality of the case study" (Yin, 2009:25). The report makes sufficient citation to the relevant portions of the case study database i.e. project documents, interviews and/or observations. Secondly, the database reveals the actual evidence and also indicate the circumstances under which the evidence was collected, in this case the time and place of the interviews. Thirdly, these circumstances are directly linked to specific procedures and questions contained in the case study protocol to show that the data collection followed the procedures stipulated by the protocol. Finally, the protocol indicates a link between the content of the protocol and the initial study questions.

4.3.1 Limitations of the initial setting

Social action groups and political agencies make up most of the gatekeepers in social initiatives found in marginalised settings. These stakeholders create barriers to access information, especially concerning active community participation. As a result, WSS projects in Cape Town were inaccessible and this was exacerbated by protests against the poor conditions of water and sanitation services from embittered community members (Davis, 2013). Projects in Nairobi were physically available, but stakeholders refused to be recorded during interviews and this affected the richness of the data.

4.3.2 Justification of the Initial sample

As seen in Table 4.2 the case studies chosen are subjected to the criteria identified in the objectives that link to social innovation strategies seen in chapter two. It is important to ensure that the samples chosen are relevant to the emerging narrative of transformative

social innovation. The links in the process of sustainable development seen were connected to collective community groups and provision of water and energy for day-to-day living.

Figure 4.3: Pictorial comparison of the Samora Machel Environmental Centre in Phillipi, Cape Town and Tosha Biogas Centre in Kibera, Nairobi.

The images in Figure 4.3 portray similar structural buildings developed as permanent structures to house the initiatives studied, while the surrounding homes of the community served as temporary structures. Table 4.3 outlines the suitability of these projects for this study.

Table 4.3: Comparison of the initial study samples' characteristics

Outline of case study objectives	**Tosha Biogas Centre**		**Samora Machel Environmental Centre**		
Community participation	Managed by Community Based Organisations	Training workshops	Managed by community representatives	Community information centre	
Knowledge transfer	New skills in construction	Capacity building	New skills in construction	Capacity building	Small-scale farming
Design strategies for equitable access	Biogas energy for cooking	Regenerative energy for lighting	Passive heating and cooling	Rainwater harvesting	

4.4 Initial data collection

Table 4.4 identifies each case study question and it is appropriated with the relevant data collection methods. The first objective aligns with the case study question that looks at the types of participation and calls for direct contact with repondents as well as documentation which is also useful in asserting how custodianship is ensured in the marginalised settings. The objective aligned to design strategies concentrates on respondents that are linked to sustainable development as highlighted in chapter two of the survey.

Table 4.4: Correlating data collection tools to research questions

Outline of case study questions	Site analysis	Interview	Observation	Document analysis	Journaling (memo writing)
Types of community participation		X	X	X	X
Modes of knowledge transfer used in asserting custodianship	X	X	X	X	X
Building environmental features that guide equitable access to WSS		X	X		X

Table 4.5 below itemises the methods used in the data collection tools listed in Table 4.3. The data collected was mainly empirical, and project documentation to fill gaps that emerged when reviewing the case studies. To address issues of bias, the data collection methods were triangulated.

Table 4.5: Tabulating data collection methods

METHOD		STUDY UNIT	TYPE OF INFORMANT	LOCATION	DATA TYPE	ANALYSIS METHOD
Interview	01	UMANDE_2013-001	Key internal agent	Kibera, Nairobi County	Empirical text	Pattern Matching
Interview	02	AWSB_2013-002	External agent	AWSB, Africa-Re building	Empirical text	Pattern Matching
Interview	03	AWSB_2013-003	External agent	AWSB, Africa-Re building	Empirical text	Pattern Matching
Document	04	Evaluation report	External agency	Umande Trust	Documentation	Thematic analysis
Document	05	Project Report	Internal agency	Cowen Architects	Documentation	Thematic analysis
Image	06	Tosha Biogas Centre	Internal agency	Umande Trust	Non-empirical imaging	Pattern Matching
Image	07	Tosha Biogas Centre	Internal agency	Umande Trust	Non-empirical imaging	Pattern Matching
Image	08	Tosha Biogas Centre	Internal agency	Umande Trust	Non-empirical imaging	Pattern Matching
Image	09	Samora Community project	External agency	Cape News	Non-empirical imaging	Pattern Matching
Field notes	10	Umande Trust Offices	Author	Kibera, Nairobi County	Empirical text	Thematic analysis

4.5 Comparison of case studies outlining a pathway to social innovation

Water governance relies on water demand management, which can be better understood when recognized as a strategy for social innovation. It is a new way of thinking about skills, or interventions which addresses complex social problems (Wolfe, 2009). This strategy has

the potential to alleviate the hardships emanating from lack of water access and improve design interventions in informal settlements. In marginalised communities this approach seems to work because it is concerned with active participation of the community in the projects implemented. The following sections outline the main areas that were found in the case studies, highlighting engagement between the users and the political agency providing water and sanitation services.

1. **Umande trust water and sanitation projects**

These projects are mainly in Kibera Nairobi and they were first funded by the Athi Water Services Board. From the outset, their primary objective was to provide affordable water services to informal settlement dwellers. Today, the projects have expanded to include electricity and gas provision (Omotto, 2010). The impact of planning and conceptualizing programmes for cost recovery results in loss of in-context information in the implementation of projects greared toward equitable access. Therefore all subsequent stages are distorted because the agents are outsiders and community members mere actors, with no power or control over the projects. The economic strategies and social policies that emerge are managed by the agents, while the main labour force are community members who work at the project settings.

Figure 4.54: Construction of Biogas Centre in Kibera

As shown in figure 4.4, the vocational training that was done, mainly involved construction and this culminated in the release of the initiative (AWSB_2013-002). Here, the jobs created do not uplift the local community beyond the release stage at the beginning of the initiative.

2. Tsonga environmental centre community garden project

This project was meant to provide Samora Machel inhabitants with a centre which can serve as a recycling material collection point, workshops for vocational training and a water reservoir for a community garden. However, the initiative failed to realise most of its primary objectives, except for the community garden, which now runs as a commercial endeavour. Today, the centre has been vandalised and reduced to an illegal shelter for homeless people (See figure 4.5) (Phaliso, 2012).

Figure 4.5: Tsonga Centre abandoned in 2012 (Phaliso, 2012)

As a concept, the idea of rainwater harvesting for the purpose of subsistence farming, was a means to drive socioeconomic upliftment (Rendall, Cowen, Goven & Collis, 2005). Similar to the project in Kibera, the Tsonga Environmental Centre did not apply the typology concepts. Although the project was meant for the community, members were not part of decision making process. The vocational training focused only on construction (Schalcher, 2009) and not actual business ventures in the initiative. The workshops did not create the desired jobs for the local community. The only surviving part of this project is the vegetable garden and it is managed as a sole proprietary business.

Selecting areas of the predictive sequence in observed case studies

As discussed in the rationale for the approach to the study, the predictive sequence of patterns in social innovation reveals the sustainable development initiatives in both case studies. These cases higilight the need to see the potential of inclusive *community initiatives*[1] in social innovation projects. Examples of these were seen in the community initiative at Samora Machel that supported both a garden and a recycling program; while in Tosha there was the group of women who had a farming program with the biogas compost. In Table 4.6

[1] Community initiatives in the study are ones seen to emerge from a need to mobilise individuals in an effort to give a voice to marginalised groups in society.

below, both projects are compared to the typology of social innovation (Moulaert & Devinquire, 1994). This comparison is important in characterizing properties that would make a social innovation viable. According to the project reports done by Cowen Architects (Rendall et al., 2005)- the main implementers of the Tsonga project-, the community received assistance from political agencies. This was done by aligning what the community considered their gravest need, with what the planners conceptualised for the space appropriated. Economic viability was not considered when designing the project's business models. Therefore, the training that was provided did not contribute to continual job creation for the marginalised community. In the end, only the vegetable farming survived and it is been managed solely by a community member.

Table 4.6: Comparing project characteristics to Typology of Social Innovation (Moulaert & Devinquire, 1994)

Typology of social innovation	Tsonga environmental centre community garden project	Umande trust water and sanitation projects
Community mobilisation	The community was a recipient of assistance in pooling resources to change the state of water collection and food security in their setting.	The community was a recipient of assistance in coming together to change the state of water and sanitation in their setting (AWSB_2013-002).
Economic strategies and social policies	Not broached by the organization.	Communities in informal settlements have benefited from lobbying done by civic organizations, which resulted in a new water policy emphasizing "water as a basic human right" in Kenya (Kenya, 2002, p. 10). This means more strategies that are aimed at improving both access and monetary returns to government water service providers. The community uses alternative energy solutions for both cooking, for example gas, and electricity (Equal Rights Trust, 2012).
Vocational training of local training	During the building of the project facilities, local community members were used as labour force and given basic training during the construction stage.	During the building of the project facilities, local community members were used as labour force and given basic training during the construction stage (Omotto, 2010).
Job creation	The community garden provides subsistence for the families involved by providing lower priced vegetables	During the day-to-day running of the initiative, community members take an active role, where they are remunerated for their efforts (Omotto, 2010).

Mobilisation of the marginalised community in Kibera was done through a civic organisation, Umande Trust, committed to fighting for the civic rights of unrepresented people in society. They provide WSS projects in informal settlements by raising funds from both government and NGOs. The main difference with the Tsonga Project is that even though the projects are

built on government land with funds from donor organisations, the local community members have to pay to use the facilities. On the one hand this approach provides revenue. On the other hand it further marginalises those who cannot afford to pay.

In the following table 4.7, the adaptive cycle, based on the resilience of a system, is used for the next comparisons of the projects. According to Moore et al. (2010) attaining a balance between the capacity to learn and adapt, and the ability to self-organise, is crucial to building resilience. The second aspect of the adaptive cycle is defining the role of an institutional entrepreneur. They are seen to leverage resources, create new institutions or transform existing ones. Based on Moore et al. (2010), "institutions define our behaviour in relation to the broad belief that represent our culture (signification), the rules and norms that define laws and practices (legitimation), and the financial, material, and authority resources that define our political and economic life (domination)". Within this sphere of life's processes, entrepreneurial skills that contribute to this agency are: pattern recognition, relationship builder and broker as well as knowledge and resource broker, and network charger (Ibid, 2010).

Table 4.7: Comparing project characteristics to the Adaptive Cycle

Adaptive cycle	**Tsonga environmental centre community garden project**	**Umande trust water and sanitation projects**
Release (Pattern mapping)	The concept was tabled at the local government and local NGOs and after approval it was funded.	The concept was tabled at AWSB and after approval, it was funded as a pilot project (AWSB_2013-003).
Re-organization (Build and broker relationships)	The projects are managed using a two-tier approach: the state through the ward councillor and other community organizations. Both stakeholders are the main beneficiaries of this project. i.e. sewerage and garbage collectors association.	The projects are managed using a two-tier approach: the civic organization (Omotto, 2010) and the other community committee (UMANDE_2013-002, 2013).
Exploitation (Knowledge and resource broker)	The initial funding was provided for by several NGOs and the funds were used for equipment, training manuals and seedlings.	The initial funding was provided for by Athi Water Services Board and is now managed through CORDAID (AWSB_2013-003). The initiative has yet to make plans of accessing running funds through other means outside external organizations.
Conservation (Network charger)	Not broached by the organization, as the centre was unable to sustain itself and it is currently in a dilapidated state.	Not broached by the organization, further probing needed.

The first series of the adaptive cycle: self-organisation, includes the release and re-organisation phases. At this stage, the required skills of an agent are: pattern recognition and, building and brokering relationships. This is demonstrated in the case studies by the organisation of CBOs, which are run by community members. This puts in place a two-tier

hierarchy, where the government institutions formulate rules and regulations to control the WSS projects managed by the CBOs. Because the government institutions organise and authorise the allocation of resources, they hold the sense of agency in society. As depicted in Figure 4.6 below, teams of women in Philippi come together to start up groups that were responsible for the seedling nursery.

Figure 4.6: Seedling nursery at the Samora Machel Environmental Centre

To offer relief in terms of food security in Kibera, vegetable gardens were supported at the base of the biogas centres, as shown in Figure 4.7

Figure 4.7: Subsistence farming at the base of a biogas centre in Kibera

This aspect of the biogas centre illustrates the significance of cultural aspects that are supported by the farming practices initiated in the social initiative. By disregarding fencing around the garden, any financial resource that may have been accrued is lost.

The second series of the adaptive cycle runs through learning and adapting to both the system and the community at large. At this juncture, the exploitation of knowledge and conservation would run alongside knowledge and resource brokering, as well as the skill of a network charger. The exploitation of knowledge is seen in the training and skills workshops that run during the construction of the projects. The technical knowledge of homemakers is

passed onto the community, an integral part of the construction of the WSS projects. For this stage to have a far-reaching impression on the marginalised community, conservation of skills and 'new' service provision should be done. This stage is not broached by any of the case studies, although it is an important part of the process of service provision in the informal settlements.

The predicted pattern is outlined in the stages of the typology of social innovation (Moulaert & Devinquire, 1994), and the adaptive cycle (Moore, et al., 2010). To further understand the impact of this pathway-dependent pattern, the study applies Siverman's (2013) textual analysis of the collected data. In the next section, initial coding moves the study toward contextualising social innovation for developing contexts. For social innovation to be associated with *social initiatives*[2], there needs to be an understanding of community needs from the conceptualisation of projects. Therefore the coding is viewed from the built environment perspective which constitutes the architectural formations in informal settlements. Within this aspect, the study will highlight the relationship drawn between the society (human agency), and the natural landscape which is the setting of this process.

4.5.1 Thematic analysis of the textual data

Table 4.8 represents the thematic codes from the initial case studies from the two contexts. These thematic codes emerged from data and are categorised into physical settings, human agency, and the natural settings. The coding is a mixture of in-vivo coding and open coding used to derive narratives for further discussion.

Table 4.8: Initial coding of first case studies

PHYSICAL SETTING	HUMAN AGENCY	NATURAL SETTING
Building is a social construction catalyst. Sustainable construction	Building a sound democracy Co-ownership Engagement Ownership People centred processes Well-being	Ecology driven Place with identity Sense of place

Human Agency

Human agency is the initiator of social innovation and can be seen through a need to have sound democracy. This is essential in an African context, where power struggles affect resource allocation and dissemination. As seen in section 4.4, Moore and Westley (2011) suggest that societal behaviour is defined by structures. And for Giddens (1984:29) the model illustrated in Figure 4.8 shows us how these behaviours relate to each other. By associating the ability to leverage resources, agency is highlighted as a means to observe

[2] Social initiatives in the study are those that embody the principles of social innovation of having characteristics that lead to changes offering socio-economic relief to marginalised communities.

emerging changes in marginalised communities. Therefore the power and control associated with agency is seen to directly relate to the facilities with the authority to allocate these resources. As discussed in chapter two service-oriented business models such as the biogas and substitence farming are prone to risks that can be mitigated by adopting resilience strategies. These strategies form new narratives that guide a pathways approach to help marginalised communities attain agency through collective bargaining power. The structured approach below outlines a model that is used in the successive case studies to discuss the observed agency in collective and individual facilities.

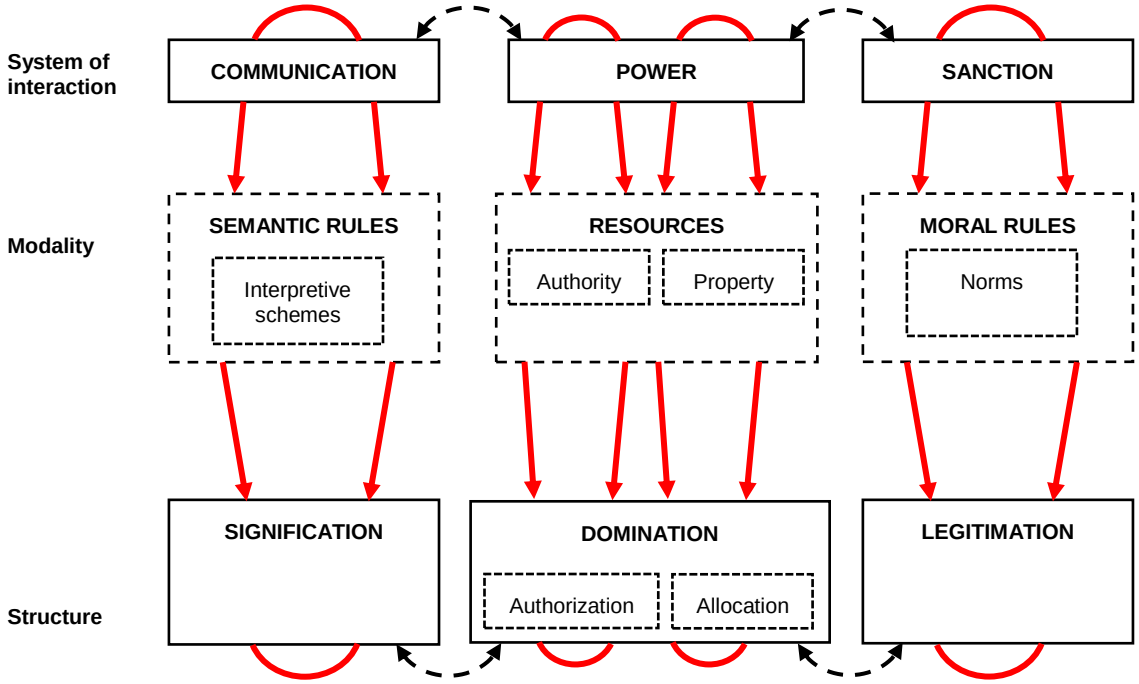


Figure 4.8: The stratification model of structure (Giddens, 1984:29)

In informal settlements, the process of democracy and governance is marred by segregation stemming from education and literacy levels, as well as ethnicity and religious challenges. For community mobilisation to have an effect on society, relevant initiatives with active engagement need to take place and ownership and co-ownership should focus on the needs and wellbeing of the community members. This could open up existing boundaries because basic needs, in particular water and saniation services transcend social barriers, and are necessary in this context. By employing a community centred process that concentrates on collective needs, as opposed to individual preferences, the degrees of ownership can be spelt out. The role of the built environment in this process is outlined in the next section. For structures to fully realise their potential there must be a platform through which to articulate

the desired outcome. Therefore, facilities may in this instance be seen as the mode in which social structures are translated to marginalised communities.

Physical Setting

Within the facilites, the culmination of ownership and engagement result in a participatory approach to conceptualising design interventions. These networks emerge from the interaction of marginalised groups and political agencies and result from the re-organisation of relationships within social initiatives. The new partnerships find ways of alternative water and sanitation service delivery in marginalised settings and gives way to the adoption of regenerative design principles. To facilitate building resilient communities in marginalised settings, regenerative design can be used in the implementation of sustainable construction practices. The design features that are placed within the built environment also serve as containers for the conservation of culture during social transition. The significance of design interventions locate symbolic knowledge which assists in reflecting water safeguarding tools and techniques. This knowledge can additionally guide the process of human agency, using power to ensure resource allocation and authority partially resides in the community. As the built environment that direct this process, activities for community members can be integrated helping agents to broaden the reach of the social initiative. This creation of place that provides identity and a sense of belonging is a means to ensure active participation in the development of urban environments within informal settlements.

The Tsonga Environmental Centre in Cape Town has since its inception in 2009 lost significance to the marginalised community it was meant to serve. According to Phaliso (2012), “the area’s ward development forum [has been accused] of stealing the donated funds and equipment. Monwabisi Mbaliswano, the previous ANC ward councillor, claimed that the blame lay with the current councillor. Mbaliswano said that soon after he had left his post, the centre was locked, abandoned and criminals soon took advantage of the empty building”. The structure which is still a government asset, has been left to criminals who have scared off other residents and taken co-ownership of the building. This new co-ownership exposes power struggles between the government and criminal lords in the townships. These non-verbal communication associated with criminal activities in built structures meant for the upliftment of the marginalised community, changes both the rules that define practices, and authority over resources that regulate political life.

This is different from the biogas centres in Kibera, where the built structure is owned by the social enterprises and run by community organisations. In this case, the rules of usage and payment systems are governed by social enterprises, whch then collect revenue from the community organisations. This forms a co-ownership between the marginalised communities and the social enterprises. By authorising and governing allocation of the bio-centres, these

social enterprises have power and control over water and sanitation services projects in this marginalised setting.

Natural Setting

The natural landscape makes up the setting in which all activity is based. It is therefore important that designs, especially those that direct access to water and sanitation, be conceptualised with the setting in mind. Informal settlements are complex settings where the densities and lack of reliable services hinder the process of a ‘good-fit’ design. This challenge can be mitigated by actively engaging the community members in the design process. By aligning the design parameters with the values of the community, the interventions can be proactive instead of reactive to challenges of the community. This means that the attributes given to the facilities emerge from the community, thereby creating an identity for the settings. Through this approach, the facilities become both significant and meaningful.

Policies that regulate service provision for water and sanitation are controlled by political agencies which influence the emerging marginalised setting. To this, the loss of Samora Environmental Centre can be attributed to the planning done during the transition of ward representatives that led to the closure and current misuse of the facility. The loss of the facility and subsequent degeneration of surrounding natural landscape are experienced by both the political agency and marginalised community in Philippi. Here, the government institution sanctions transient groups to lay claim to their asset and depriving community groups of a project that was meant to benefit them. By accepting criminal activity as a norm, this takeover of government property is legitimised by political agencies, which in turn do nothing to help the marginalised community. This implies that the project lies outside the confines of policies that would have protected it after government representatives were changed during political handovers.

Informal settlements policies have geared local government in Nairobi toward more reliable access to water and sanitation services. But in an effort to reduce municipal costs, regenerative design strategies applied in the biogas centres have further alienated the marginalised communities. Policies for access to safe and reliable services do not cover provisions by municipal councils, thus the new centres are out of local government jurisdiction. This results in new complex problems especially since the marginalised setting is situated adjacent to the Nairobi Dam and Ngong River that feeds it.

The emerging relationships between the defined setting, engagement, validating communities

Social change within emerging economies can utilize the built environment to empower community members in informal settlements. The design features can be a means to mediate meaning in the effort to safeguard water by indicating changes of interaction

between the built environment and the natural landscape. The formation of a social innovation concept is done by recognising patterns which give rise to context specific projects. These projects signify a change or an alternative way to access and use water resources, thus resulting in the release of social innovation. These changes in the way stakeholders now interact with each other results in new policies, laws, and institutional facilities to govern the relationships. At this stage, the participation of community members in the new networks formed is important to the distribution of ownership. The social innovation initiative extends beyond the initial perceived impacts, and results in similar projects are replicated around the community. The members of the community now become recipients and no longer agents in the initiative. External agencies take ownership of the initiative, while locals are attached as actors who receive training within the project, but play no active role in the project. The built environment that is subsequently constructed does not consider the cultural significance of the community, nor does it give access or allocate water resources effectively, as water access is still a problem. This study engages with the community to ascertain concept and design development involvement. The social innovation framework (Westley, 2008; Moore & Westley, 2011) is integrated with the typology of social innovation (Moulaert & Devinquire, 1994), and additionally, concepts that emerged from the initial sample are used to contextualise pathway analysis in social innovation further and make it applicable to informal settlements in Nairobi.

The pathway for social innovation is seen to emerge in the conceptual frameworks adapted to analyse the initial case studies i.e. typology of social innovation (Moulaert & Devinquire, 1994) and the adaptation cycle (Moore et al., 2010), and it is these stages in the design process that bring to the fore the preferences and needs of the end user. When these aspects are combined with a need for custodianship, they resulted in stages where resilience and governance are integral phases during the conceptualisation of social innovation initiatives. Furthermore participation and networking was seen as leverage for community members to advocate their needs to the wider population. As the design process is conceptualised, a participatory approach can be adopted to incorporate ideas from the community. Presently, the design is conceptualized outside the sphere of the community members, and implemented through external agencies. This approach disregards a significant stage where orientation and conceptualization can help attain community support of the proposed projects. This could also assist in selecting appropriate sites and adequate zoning of spaces according to their needs. Through this, places of significance with design interventions that assist in safeguarding water can be implemented. These new conceptualized objects promote the role of community members as custodians of their resources. And design elements emerge from cultural significance and can help communities conserve their culture and build capacities. This provide space for a community to single-

handedly come up with ideas for future solutions through new governance systems in-place. The intention is to give the community a sense of ownership and the ability to empower themselves and access their local water resources.

4.5.2 Summary of findings: developing a pathway analysis for social innovation

The design process of service provision facilities can have significant impacts in achieving social innovation objectives. By aligning the needs of communities in the conceptualization of places and settings, ecological stewardship can foster optimum use of the built environment. This would motivate stakeholders to use design features as objects of mediation toward greater efficiencies. Senior researcher, Dr. Richard Meissner of Council for Science and Industrial Research Water Governance Groups (CSIRWGG), has reported that damaged relationships and stunted professional networks are negatively affecting water governance (Burger, 2013). Therefore the pathway analysis highlights the role of social capital and development of capacities so that positive results may be more evenly distributed (Tello-Rozas 2015). This would allow a re-negotiation of institutional boundaries (Grimm et al. 2013) where spatial appropriation of formal urban spaces can be a means to integrate socioeconomic disparities and use structuration theory more deliberately, especially in understanding the role of agents in the process of change (Cajaiba-Santana 2014). Within these projects it is therefore prudent to value the contributions of stakeholders through physical representation.

Table 4.9 below shows steps that guided the relational sampling to further observe the emerging pathway outlined (Hammersely, 2006). The phases represent organisational structures while in the structuring process these steps are linked to the design process:

1) the appropriation of space: this appropriation is linked to understanding community practices so as to observe production of space.

2) the engagement that occurs between stakeholder groups: in the design process conceptualisation of how space is utilised and the creation of place.

3) the creation of distinct places filled with significance brought about social practices of the community: after the creation of place is conceptualised this stage allows for the placement of fixtures and fittings to suit the activities in the space. These activities should ideally be sustainable and promote custodianship if the natural environment.

4) how the society transforms through this transition of better governance: at the final stage, the design should include details that promote cultural significance and allow the local community to claim ownership of the built environment.

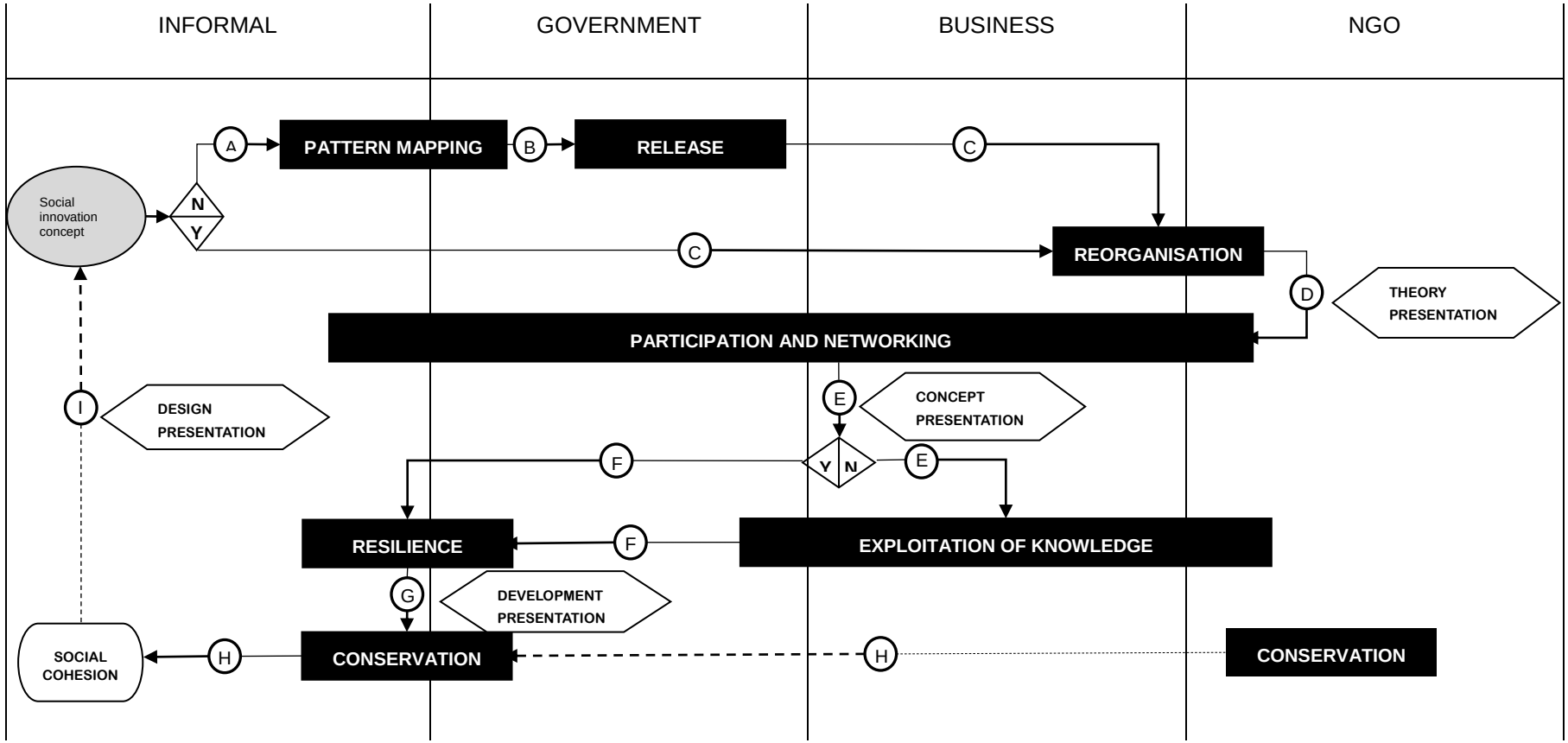
When converted to a block diagram, as shown in Table 4.10, it can be used to revisit the processes that result in the organizational structures observed. In view of the gap in the

design process, orientation and conceptualisation, the onset of the activity flow is seen to begin with the existence of a social innovation concept. Once the concept is realized, then a baseline report made available to all stakeholders gives opportunity for feedback. This should ideally result in a finalized concept where stakeholders have engaged and arrived at mutually acceptable decisions. In this study, design development allows for a deeper interrogation of community resilience and means of up-scaling. At this stage labelled social cohesion in table 4.10 the final design to be implemented can be verified to ensure that social cohesion aspects reflect positive impacts in the community has an opportunity to use participatory approaches adopted to create communities that cater to WSS access.

Table 4.9: Outline of adapted frameworks and linking events of the structuring processes

	Structure's properties	Structuring processes	
PHASE 1: SPACE	**PATTERN MAPPING** Recognition of problem through community engagement	Micro-scale in-context community projects	Graphical representation of community activities
	RELEASE OF INNOVATION Building relationships through; economic strategies and social policies	Develop a value model to outline roles of stakeholders	Orientation and contextualization
PHASE 2: ENGAGEMENT	**REORGANISATION OF RELATIONSHIPS WITHIN INNOVATION** (The Young Foundation, 2012: 27-30) Private sector involvement	Responsibility of each sector to the other to ensure appropriate implementation	Sequences in transition or dynamic spaces
	Public sector involvement		
	Non-profit sector involvement		
	Informal sector involvement		
	PARTICIPATION AND NETWORKING Level of partnership according to Arnstein's (1969) ladder of participation: non-participation, tokenism and citizen power	Joint action	Adjacency or connecting spaces for place making
	Degree of ownership		
PHASE 3: PLACE	**EXPLOITATION AND KNOWLEDGE BROKERING WITHIN INNOVATION** Implicit (tacit) knowledge learn by doing i.e. Mobilized building initiatives Explicit knowledge learn by reading i.e. vocational courses	Exploiting the place formed to promote economic strategies/social policies (see stage ii)	Conceptualize new objects (structures/fittings/ design interventions)
	RESILIENCE IN COMMUNITIES AND REGENERATIVE DESIGN Coevolution of interior environments to ensure stability of natural and built systems	Sustainability of design interventions within its 'place' and the community it serves	Design features that promote interdependencies with the natural environment
PHASE 4: TRANSITION	**CONSERVATION OF CULTURE DURING SOCIAL TRANSITION IN DESIGN FEATURES** Interior interventions that have cultural significance to water safeguarding tools and techniques.	Features that allow permanence using cultural links to embed design and change	Elements in the interior/built environments that emerge from the community
	GOVERNANCE TO ENSURE CITIZEN CONTROL OF INNOVATIONS Active participation of community members in the lifecycle of initiatives within the financial, human and technological resource acquisition.	Conveying ownership in created 'place' and its representation to the community	Use design interventions to transfer ownership to the community

Table 4.10: Block diagram of emerging pathway analysis of social innovation



A : Micro-scale community projects

B : Develop value model to outline stakeholder roles

C : Appropriated responsibility for implementation

D : Joint action

E : Exploiting place to promote economic strategies and social

F : Sustainability of design interventions within its *place* and community

G : Features that allow permanence using cultural links to embed design and

H : Transfer of ownership in created *place* and its representation to the community

I : Adaptation and emergence of new ideas

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i : Recognition of problem

ii : Building relationships

iii : Relationships in innovation

iv : Levels of participation

v : Degrees of ownership

vi : Coevolution of interior environments and natural environment

vii : Cultural significance to water safeguarding tools and techniques

ix : Accordance to social capital and inclusion

4.6 Successive sampling resulting from initial setting information

In this second phase of the research, the case studies chosen follow a similar approach as the initial case studies utilising the case study protocol and procedures itemised in section 4.2.1. The Athi Water Service Board, which is the governing body of all public WSS systems within Nairobi and Kiambu Counties was approached to ascertain which projects fit sharply with the objectives of the study. To this end four settings, two urban and two rural were selected, namely: Huruma settlement and Gikomba Market in Nairobi County and Limuru Town in Kiambu County and Gatwanyaga in Thika District.

Table 4.11: Case studies used in the research

STAGES IN DATA COLLECTION		PROJECTS
Initial Projects	March - June 2013	Tosha Biogas Centre in Kibera, Nairobi County. Tsonga Environmental Centre, Cape Town.
Comparison Project 1	January – March 2014	Thika UDDT toilets, Gatwanyaga, Thika District
Comparison Project 2	January – March 2014	Gikomba Market, along Nairobi River, Nairobi County.
Comparison Project 3	April – May 2014	Huruma Biogas Centre, Off Runda Estate, Nairobi County.
Comparison Project 4	April – May 2014	Limuru Iko Toilet projects, Limuru Town, Kiambu County.

4.6.1 Urban case studies

Gikomba Market

This is a market situated along Nairobi River and it is considered an informal market, although the allocation for the setting is the responsibility of the local government. The activities have grown and expanded to a section of informal settlements adjacent to the market.

Figure 4.9: Arial view of Gikomba Market and vegetable stalls, in Nairobi (source: google maps)

Huruma settlement

Marginalised communities are situated in Nairobi's informal settlements bordered by modernised areas inhabited by middle to high income earners. (See image below). The adjacent Runda estate has its own dedicated WSS systems which excludes the informal settlement. This limits access to basic water and sanitation services due to restictions of the Runda Water Company. Access to the WSS is supplied to the estate dwellers as private water supplies also supplement the County water supply. Consequently, the adjacent informal village of Huruma is and further marginalised due to lack of access.

Figure 4.10: Arial view of Huruma Village and rooftop view of settlements, off Runda Estate, Nairobi County (source: google maps; author).

4.6.2 Rural case study

Thika UDDT Toilets

In this rural setting water and sanitation projects that offer an alternative design to a pit latrine are promoted. The UDDT unit has at the disposal level a composting pit where the user can easily access it. The rainwater harvesting unit offers additional water resource. This example of a context specific programme is implemented through the AWSB whose mandate is to provide water and sanitation services to Nairobi and Kiambu Counties.

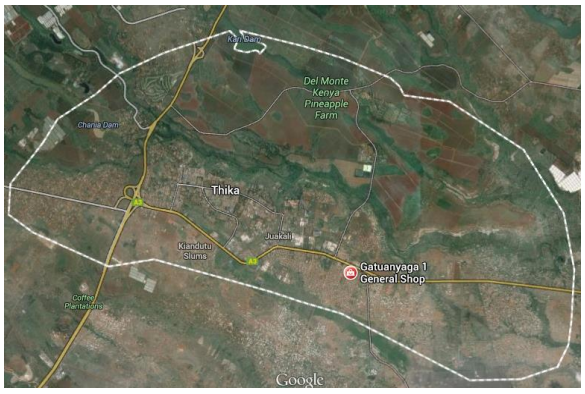

Figure 4.11: Arial view of Gatuanyaga area, and one of the UUDT units (source: google maps; author).

Limuru Iko Toilets

In the rural setting an investment to provide access to WSS in previously underserved areas has resulted in the process of our case studies. These facilities are the only ones in an area with dense population of a market and bus terminus. These areas have a high population of low-income earners which has influenced the poor access to WSS. The local government has built only one toilet facility in the general market place, and another one at the public bus terminus. Due to limited access to WSS the community, according to the community members interviewed, is considered marginalised even though it is not an informal settlement.

Figure 4.12: Multiple views of Limuru Town and an Iko-toilet project, Kiambu County (source: google maps; author).

4.7 Clarification of limitations of Grounded Theory in the study

Grounded Theory as a tool for analysis concentrates on specific contexts. This makes it difficult to generalise the knowledge outcomes and provide a platform for other contexts with similar challenges. In this research, the study is context specific and as such treats all collected data as significant thus narrowing the implications of the research. To further understand the role of marginalised groups in implementing and using social innovation projects, by using results from the first case studies to approach the second sequence of case studies, the emerging narrative of how underserved areas are provided access to WSS (Potter and Hepburn, 2008). By using results from the first case studies to approach the second sequence of case studies, the emerging narrative of how underserved areas are provided access to WSS.

Justification for successive case studies

From the preceding sections a pathway analysis of social innovation explains the organisations that are found operating WSS in the case studies and how they were developed. This was done using both they typology of social innovation (Moulaert and Devinquire, 1994) and the adaptive cycle and its social innovation framework (Moore, et al.,

2010; Westley, 2008). The successive phase of the research takes the pathway delineated and assess cases where agency and multi-stakeholder engagement was seen to occur. This gives the study the opportunity to further analyse the need for inclusion of marginalised communities in the development of the urban fabric to improve provision of water and sanitation services.

4.8 Approaching the field

Traditionally, Kenyan communities are hierarchical in nature. The higher levels in the organisational structures deal with challenges of actors according to levels of importance, leading to the division of power and control. Chiefs in an area are given the duty of attend to the challenges of the community. This means that they are the government representative at the entry point through which community members make contact with political agencies. This causes conflicts between government institutions that provide services, and the citizens who receive inadequate access to water and sanitation. The plight of the marginalised groups do not reach higher levels in the organisational structures due to their lack of representation. In the appropriation of formal space within marginalised settings, the chief decides who and where members of the community would reside. They are also part of the process in the mobilisation of the community members, and the placement of the projects in the setting. The community members are seen as recipients of the projects and essentially do not manage the higher level processes that interact with the main programme.

In the study's approach to the field, the political agency that organises the structures in the WSS programme was used to map the appropriate projects to assess. This is because, an approach to the project themselves without authorization from higher level actors impeded the initial data collection of this research. In the second phase of data collection, the projects chosen fulfil the main objective: having marginalised groups in the community as the main organisation running the projects. This approach is appropriate because, according to Babbie and Mouton (1998) purposive sampling offers a way to select projects which meet the objectives of the study. The data was collected through interviews, images of the site, and observations.

In order to ground the data collected, the pathway that emerged from the initial data analysis is used to organise data. Grounded Theory through memo writing uses narratives to present the data collected and picks out emerging concepts in the data. Therefore, a narrative analysis approach as outlined by Booth et al. (2012) was used. This is an appropriate approach in that it outlines steps that result in a study of emerging patterns in the body of evidence collected. In line with this approach, the study begins by:

a. **Developing a model of how the interventions work, why, and for whom**. In this instance the role of design in appropriating space through biological re-assimilation as stated by Lyle (1994) is a model that fits WSS in marginalised communities. This approach of *regenerative design* looks at natural process of dealing with sustainable production and consumption of resources. The process of sanitation in three of the projects are good examples of this as they do not use conventional means of waste disposal. In the final project, the political agency choses to revert back to municipal services for provision of WSS as a better alternative.
b. **Developing the data analysis**. In order to understand the empirical evidence from the cases, comparisons are made between the projects. These form a process of collection and analysis, that is based on Grounded Theory. Review and analysis of cases form a basis for further data collection and bring to the fore the importance of marginalised community participation in the appropriation of space for WSS projects.
c. **Exploring the relationships in the data.** The datasets assembled indicate a binary relationship between the political agency and the marginalised groups in community. This relationship which runs as a 'top-bottom' approach, disengages the government from the community it serves.

The aim of this section is to describe the micro-level activities that happen prior to implementation of the project at site, and the macro-level explanations of the programme that places these projects in marginalised settings. Design plays an important role in the appropriation of space, which often happens during conceptualisation of the project. The site orientation and the consideration of the needs of communities is crucial to both the success of projects and the protection of the natural landscape that support habitation. Firstly, the role of design according to Lyle's (1994) model of biological re-assimilation in composting toilets is discussed. Secondly, a value chain is used to delineate the process observed in the composing toilets of Gatuanyaga and Gikomba Market. It outlines the resources put into the project and the final outcomes and impacts of the programme on the marginalised communities. The final assessment examines the assertion of agency through networks in the internal relationships of the project, which the community experience, and control of the programme by the political agency. Table 4.12 indicates the data collection methods used in the study.

Table 4.12: Summary of data collection and analysis method in all four projects.

Project 01: Gikomba Market compost toilet project, Nairobi. **January – April 2014**						
METHOD		**STUDY UNIT**	**INFORMANT TYPE**	**LOCATION**	**DATA TYPE**	**ANALYSIS METHOD**
Interview	06	GIKOMBA_2014-006	Internal agent	At project site	Empirical text	Line-by-line; focused coding
Interview	07	GIKOMBA_2014-007	Internal agent	At project site	Empirical text	Line-by-line; focused coding
Images	14	Gikomba Market compost toilet project	Author	Nairobi	Empirical imaging	Narratives analysis
Field notes	18	Site visit at Gikomba Market	Author	Nairobi	Empirical text	Narratives analysis
Project 02: Gatuanyaga compost toilet project, Thika. **January – April 2014**						
METHOD		**STUDY UNIT**	**INFORMANT TYPE**	**LOCATION**	**DATA TYPE**	**ANALYSIS METHOD**
Interview	01	AWSB_2014-001	Internal agent	AWSB, Africa-Re building	Empirical text	Line-by-line; focused coding
Interview	05	AWSB_2014-005	Internal agent	AWSB, Africa-Re building	Empirical text	Line-by-line; focused coding
Images	17	Iko-toilet facilities at market and bus-stop	Author	Thika	Empirical imaging	Narratives analysis
Field notes	18	Site visit at both bus-stop and market projects	Author	Thika	Empirical text	Narratives analysis
Project 03: Huruma Biogas project, off Runda Estate, Nairobi **April – June 2014**						
METHOD		**STUDY UNIT**	**INFORMANT TYPE**	**LOCATION**	**DATA TYPE**	**ANALYSIS METHOD**
Interview	08	HURUMA_2014-008	Internal agent	At project site	Empirical text	Line-by-line; focused coding
Interview	09	HURUMA_2014-009	Internal agent	At project site	Empirical text	Line-by-line; focused coding
Document	12	Evaluation report	Internal agency	AWSB	Non-empirical text	Line-by-line; focused coding
Images	14	Huruma biogas project	Author	Nairobi	Empirical imaging	Narratives analysis
Field notes	18	Site visit at biogas centre	Author	Nairobi	Empirical text	Narratives analysis
Project 04: Limuru Iko-toilet projects, Kiambu **April – June 2014**						
METHOD		**STUDY UNIT**	**INFORMANT TYPE**	**LOCATION**	**DATA TYPE**	**ANALYSIS METHOD**
Interview	02	AWSB_2014-010	Internal agent	AWSB, Africa-Re building	Empirical text	Line-by-line; focused coding
Interview	03	AWSB_2014-003	Internal agent	AWSB, Africa-Re building	Empirical text	Line-by-line; focused coding
Interview	04	AWSB_2014-004	Internal agent	AWSB, Africa-Re building	Empirical text	Line-by-line; focused coding
Interview	10	LIMURU_2014-010	External agent	LWC, Limuru Town	Empirical text	Line-by-line; focused coding
Interview	11	LIMURU_2014-	Internal agent	At Iko-toilet	Empirical text	Line-by-line;

	011		project		focused coding
Document 13	Tripartite agreement	Internal agency	AWSB	Non-empirical text	Line-by-line; focused coding
Images 17	Iko-toilet facilities at market and bus-stop	Author	Kiambu	Empirical imaging	Narratives analysis
Field notes 18	Site visit at both bus-stop and market projects	Author	Kiambu	Empirical text	Narratives analysis

The next section uses the field notes and observations taken during the site visits to the projects. This information lays out the projects in the four settings and appropriates the design strategies used, where necessary. Outlining the project, and understanding the design intervention that is implemented onsite allows for a better understanding of the meanings attributed to the facilities, by both the political agency and the community members in the marginalised setting.

4.9 The role of design in appropriating space in individually run projects

Here, Lyle's (1994) regenerative design seeks to use waste as a resource and is used as model to show how the intervention of composting toilets works in projects 1 and 2. This is shown in Figure 4.13 below, where biological rea-assimilation is done, as indicated in the project, through composting. This type of waste management process biologically decomposes organic material under controlled conditions. The loosely structured soil-like material can be handled, stored, and applied to the land as a beneficial soil amendment without adversely affecting the environment.

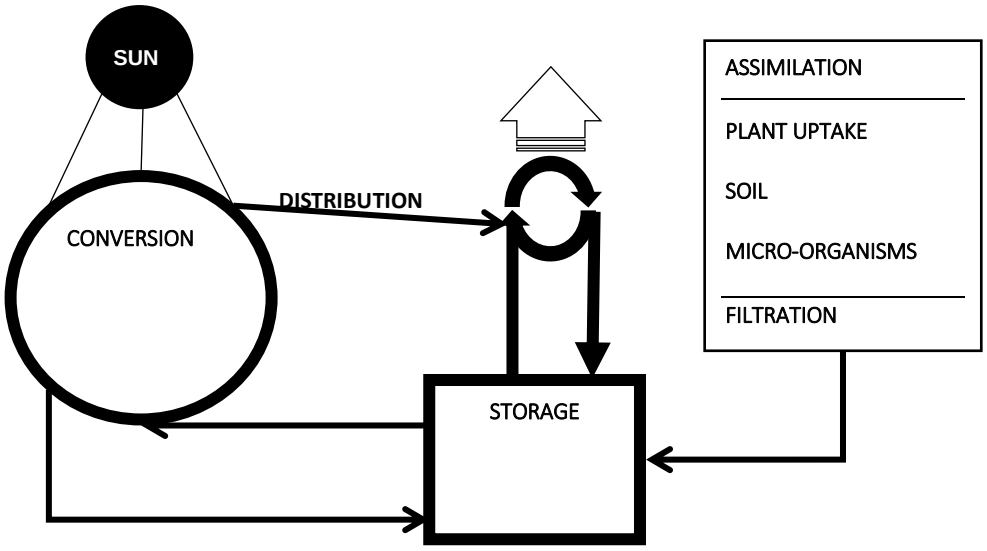

Figure 4.13: Biological re-assimilation (Lyle, 1994:231).

According to research done on biosolids, enhanced fertility and improved water holding capacity of the soil is just one of the many benefits of using this alternative type of fertilizer (Anon, 2014). The composting done at project 1 in Thika uses this means of sewerage system, as digging pit-latrines is hazardous due to the shifting land mass of the area. In Figure 4.14, the example shown is in close proximity with a subsistence farming project which benefits from the biosolids produced. This allows for the family to make fertilizer that improves the soil quality on their plots.

Figure 4.14: Composting toilet in Gatuanyaga, Thika.

The projects are built by the political agencies and do not offer the community alternative interaction with the programme and their setting. Architecture as a practice of conceptualising and constructing dwellings can produce building of cultural significance (Lefebvre, 2014). Without linking these spatial forms to a precedence of power and control, buildings lose the ability to have meaning to the inhabitant of the dwelling created. In an area where there's limited rainfall, the compost can become a resource to subsistence farming by adding nutrient levels to the soil, and increasing the harvest. In this way the compost toilet can be promoted in the locality. This can give new significance to the community, and creates a place where sanitation can be seen as resource. In this instance the local community can access not just a means to dispose of their waste, but also impact their environment directly by improving soil quality. These changes in social practices can be directly linked to the built environment that is introduced through WSS services for marginalised groups.

In Gikomba Market, composting toilets which are mainly provided by a social enterprise called Fresh-Life, are used by the public. An example of this facility is shown in Figure 4.15 below. The main difference is that in the urban area, the setting is mainly informal and there is no subsistence farming where the waste may be used. Therefore, biosolids are collected

regularly by the providers of the facility who collect a service charge from the community member operating the toilet. The *Kazi Kwa Vijana* (KKV) youth, contribute to the sanitation process by dissuading public defecation amongst the local community. In this instance there are visible signs of power and control. The social enterprise owns the facility which, means the composting is controlled by a profit based organisation. Power in the setting is based in the political agency which instructs where these toilets are implemented.

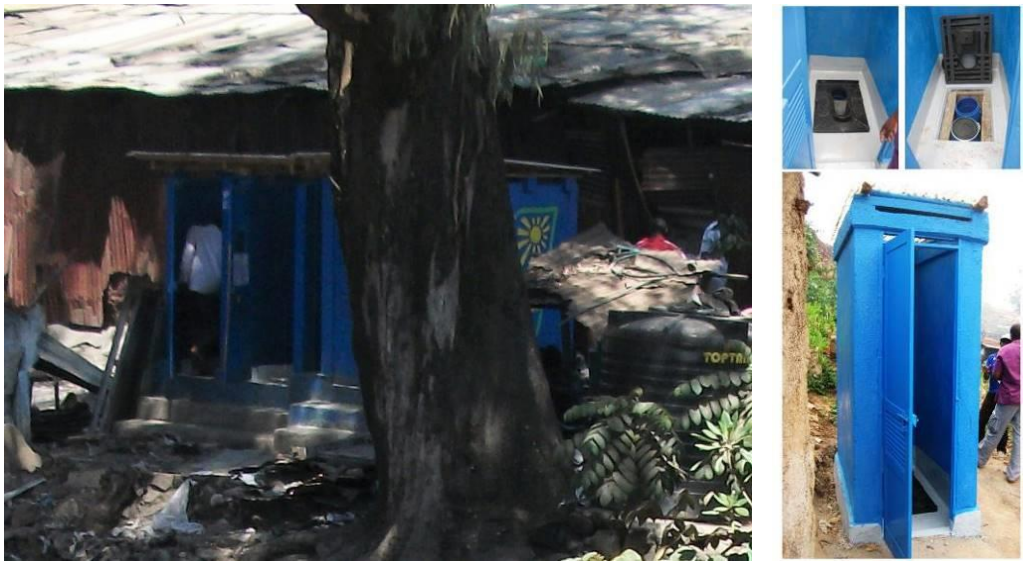

Figure 4.15: Composting toilets in Gikomba Market, Nairobi; and an inset of working components

The projects depicted here are trying to reduce the reliance of the marginalised community on municipal services. This is done by adopting regenerative design strategies, through biological re-assimilation in the provision of water and sanitation services. Thus the community's right to water and sanitation as stated by the Kenyan Act of 2002 is not a preview of the government, but one that is handed over to social enterprises which intend make profit from the services provided. The neglect of the marginalised community's right to the city means that the community does not have any control or power over space appropriation. Significant architectural structures, in the form of WSS projects, do not create meaning in their setting because of the distinction created by the separate social relations of the political agency and the marginalised groups.

To better understand the difference between the two social groups, their relationship is further described by drawing conclusions from the projects' value chain as shown in Table 4.13. In this table, the political agency is seen to be in control of the first stages which places resources for the projects using interdepartmental programmes. The community which only becomes involved after the output of the programme, loses their sense of agency. Marginalised groups who have no representation in the power structures, are neither at the near order or far order of the appropriation of space. The architect, who confers with the

political agency does not represent the user, but the political agency that owns the power and resources to provide water and sanitation services. This suggests that the marginalised groups in the community are at the mercy of the architect and political agency. Against this backdrop, representation at the appropriation of space proves difficult as the marginalised groups are not a part of the design process.

Table 4.13: Value chain of composting toilets

RESOURCES	INPUT	SOCIAL INITIATIVES	OUTPUT	COMMUNITY INITIATIVE	OUTCOME	IMPACT
Designers, clients, community members, government institutions	Usage matrix, training programs	Sensitisation workshops THIKA	Obscuring of information given to the community members. THIKA	There is no community initiative rising from the composting toilet project. THIKA	Single individual runs the water and sanitation project not the community.	The community at large view it as part of a government facility and not as a community facility
		It is not a social initiative but a profit making business. GIKOMBA MARKET	The project information is owned by the proprietor GIKOMBA MARKET	The community are not involved in the project except as paying users. GIKOMBA MARKET	The proprietor makes money from the community and fertilizer. GIKOMBA MARKET	
Water access, sewerage extraction	Rainwater harvesting. THIKA	No social initiative organised.	Day-to-day running resides with an individual not the community	There's no active participation from the community to realise an initiative that represents the context it is in.	The community in Thika does not benefit socially or culturally from the facility THIKA	The community has improved access to water and sanitation services.
					The market benefits from a cleaner setting. GIKOMBA MARKET	
Roof run-off, water storage tanks	Storage during water shortages. THIKA	The facility is not built as a community based unit.	Waste as a resource for fertilizer is seen in Thika, but it is not up-scaled to provide socio-economic benefits to the individual or community. THIKA	The compost made is used in the individual's farm. THIKA	Management of the facility and development prove difficult due to lack of guidelines and programme policies.	The narrow context limits the extended reach the project can have on the wider community since the project touches on social and cultural aspects of the setting. Water and sanitation access, and waste disposal can influence the setting, for better or worse.
			The market community does not know about the fertilizer. GIKOMBA MARKET	In the market it is carried off by the proprietor of the toilet facilities. GIKOMBA MARKET		

4.10 Understanding individual agency in the composting toilets project

Lamsal (2012) argues that, as our cities grow and change, it is important that we do not lose sight of the unintended consequences of rapid migration to urban areas. This is because it may result in unequal distribution of goods and services to the citizens. Macro-level patterns arising from structures created by interacting agents (Goldstein, 1999) follow the model, shown in Figure 4.16, as outlined by Giddens (1984). Where there are relationships and consequences, the patterns in the structures that arise from the structuring process relate to the contexts and meanings in the setting. The relationship between structures emerges from external forces (macro-level explanations) while the structuring process, from the loss of agency. In this case, the loss of agency is often blamed on internal motivations during micro-level activities.

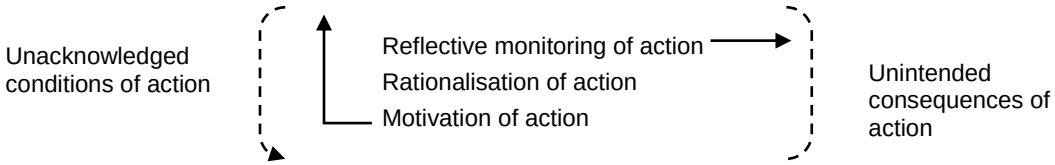

Figure 4.16: Model of the agent (Giddens, 1984).

The model gives a sequence of rationale of the marginalised community is that is used to assess this appropriation by understanding 1) The motivation to informalize unused land, 2) The reason the community chooses to do so, and 3) How this appropriation is justified and sometimes supported. The under-served areas have united access to WSS promoting the community to appropriate space that was for formal use. The unacknowledged conditions of action is the limited access to WSS by the marginalised community, which result in the unintended consequence of the appropriation of formal space. The marginalised community are motivated by the fact that the space is unoccupied and therefore unused, making it ideal for putting WSS facilities. The local NGOs and local government support these actions by not demolishing the WSS facilities. Therefore the rationale for political agencies was observed as: 1) their motivation for assigning facilities was to formalise the appropriation of space 2) the reason being that it provides an opportunity for access to previously under-served areas and, 3) monitoring is done through the National Government and an annual evaluation report.

This study uses the model of the agent to put these aspects in perspective in order to focus on the distinction between the community and political agencies. In the first sections of the value chain, as seen in Table 4.12, the motivation for assigning and developing interventions is done by political agencies. The process of justifying the relevance of the programme is done through social activities which result in campaigns for sensitizing the communities.

Although this happens in the Thika project, it is not similar in the Gikomba Market Projects because the community does not manage these facilities. Therefore any monitoring of the projects, and subsequent impact of the programme are difficult to assess because power and control is outside the community.

This study endorses the definition that space is not simply "an empty dimension along which social groupings become structured, but one which has to be considered in terms of its involvement in the constitution of systems of interaction" (Lamsal, 2012:119). This means that the transfer of information between political agencies and the community is indeed the platform for the transfer of agency. Therefore, existing organisational structures that assist communities to define, regulate, and validate their space are pointed out by the architectural forms constructed on site. These interventions guide the marginalised community to navigate themselves in society and assert agency through systems of interaction and learning. In addition, the internal relationships which are the outputs of the programmes, and the outcome of the projects, which are driven by political agency in the marginalised setting are discussed in the next sections. The idea is to highlight the role of community participation in the design and implementation of WSS projects in marginalised settings. This is because for community programmes to work, the community itself has to be an integral part of both the programmes and the projects on ground.

Internal relationships that influence the WSS in compost toilets

The outputs of the project can be seen from two dimensions: 1) the effect on the social relations in the community, and 2) the interaction of the building with the new landscape that the project creates. These two dimensions lay the ground for the unacknowledged conditions for the actions taken by the political agency, and the ensuing subsequent reactive actions by the community. This is outlined in the value chain, where information is not easily accessible by the community, as in the case of the Gikomba Market, or information fails to outline all the advantages of the composting projects, as seen in the case of Thika. In the extracts below, the government institutions seem to have realised the need for community participation in order to improve service provision in marginalised settings.

> *"So when the reforms were introduced the ministry realized that there was a need to work together with the beneficiaries to ensure sustainability of the projects" (UDDT INT05-02).*

Although this is an important factor which indicates how the programme is developed, there are still barriers arising in marginalised settings, which often result in the re-assessment of project objectives. When this happens, political agencies usually step back and try to address these barriers before proceeding with the programme. One participant commented:

> *"Some of them are saying; I don't want this project, this project is going to react badly environmentally. Then you answer their questions, the ones you cannot answer, you tell them; now you have to back look at the project objectives then we'll call again for all the feedback you have given us" (UDDT INT01-02).*

To fully comply with Kenya Act of 2002 on the delivery of water and sanitation services to citizens, government institutions have outsourced these services to private companies. This has led to the commercialisation of facilities and further exclusion of the poorer members of community. The commercialisation of *public facilities* has worsened the problem of poor sanitation. For the projects to fulfil their objective of providing reliable and accessible sanitation services, the community needs to be fully involved in the implementation of the programme.

> *"So instead of finding people have relieved themselves there by the river, and by the trees and other places. At least they use this facility. As you were told before, the waste is collected in the morning and it goes to make fertilizer. Every morning, so we arranged with them and we're partnering with the community" (GIKOMBA INT06-01).*

In the Gikomba Market project, the compost toilet is run by a community member who has no access to the socioeconomic benefits of the composting process. This is because the compost is collected and delivered to a different site, where it is then sold. The community members, who are the main producers of the compost, do not enjoy the economic benefits even though they pay for the use of the toilet facility. The private companies make profit from two sources: the use of the facility, and the sale of the compost. In the Thika project, the compost toilets are situated in homesteads, according to the interviewee at the site, not all members of the family use the facility. Some family members and neighbours are therefore deprived of vital information about the advantages of composting.

The implementation of biological re-assimilation plays a fundamental role in creating an environment that can help improve the health and wellbeing in the community. By safely introducing waste into the landscape, the adverse effects of polluting the river are reduced, as in the case of Gikomba Market. In Thika, the biosolids are re-introduced into the environment as fertilizer for subsistence farming activities on the plot. During these processes, political agencies managing the programme do not usually highlight the advantages of biosolids. Instead they concentrate on duplicating the toilet facility. By so doing, the community members miss out on vital information on the composting toilet that could benefit their setting. This approach undermines the role of the government as an institution that protects citizen rights, and limits the extended reach the composting toilets can have on the wider community and their environment.

External agencies that exert control on the WSS in the compost toilets

The unacknowledged condition of external agencies assuming power and control is seen in the outcomes of the programme for composting toilets. These outcomes differ in the two settings. In Thika the project is managed by an individual and in Gikomba Market it is managed by a social enterprise. However, both projects are managed under the auspices of community members. The political agencies define the spatial appropriation because they provide the resources and inputs. By controlling the inputs and resources, these political agencies essentially drive the community initiative, thus minimising the social and cultural impact of the programme.

In the Thika case, the political agencies provide the built facility and training to the agent in the community. Through this community agent, they monitor and control the composting toilets implemented in this community. All workshops and training exercises on the compost toilets, held away from the setting, are attended by the agent and not representatives from the community. Therefore, the political agency controls the outcomes of the programme. The impact of the alternative sanitation facility is limited, as the community are not included in the programme's process. In the Gikomba Market, the facility is wholly owned by the social enterprise which runs it through a community member. There are no workshops or training initiatives, because the community is seen as a user and not a partner in the process. This means that there is limited participation of community members, even though the project is meant to improve their health and wellbeing.

The unintended consequences of external agencies assuming control of the WSS programmes and projects, further alienate marginalised communities in the provision of water and sanitation services. By transferring the responsibility to provide this service provision from government institutions to social enterprises, the quality of the service provided to the community is compromised. This can be mitigated by allowing the marginalised community to play a more definitive and active role in the programme. The government institution from its position of control, can help regulate how marginalised communities receive water and sanitation services. This would mean that composting toilets, whether implemented in rural (Thika) or urban (Gikomba Market) settings, must be responsive to the needs of that particular context. Regulating the programme can promote agency in the community and further enhance the understanding of the meanings associated with the appropriated space for the project. This can best be achieved by having more interactive activities with the community members during and after the design and implementation of the projects.

By validating the marginalised communities' role, political agencies can assert their *right to the city* through WSS programmes. Through systems of interaction already structured during the implementation of the composting toilets, further learning programmes can assist in

extending the reach of the projects. Validating the marginalised community then takes on a more profound meaning, over and above simply confirming their participation. By using the projects and the process of appropriation, the marginalised community can have a voice as to how places are created in their setting.

Summary of the first phase of data collection

"Agency is the fundamental element to create any sort of change" (Lamsal, 2012:115). Therefore, when advocating the improvement of the quality of service delivery to marginalised communities, we should bear in mind that "all social actors have a role in developing power structures" that influence how regulations control the distribution of access to WSS in marginalised settings (Anon, 2005). In these power structures, marginalised communities can have an active role in the structuring process that triggers changes in their setting. The projects implemented by political agency are commendable in that they intended to increase water and sanitation services. However input from the community members is critical for the attainment of this objective. In fact an interactive and reciprocal relationship between human agency (marginalised communities) and social structures (political agencies) and the mutuality of social development and human interaction process (Anon, 2005). Interdependencies which are collectively called 'binary processes' occur between the stakeholders and ensures that facilities serving marginalised communities are inclusive so as to have more uptake that leads to successful programmes.

The WSS projects in themselves cannot bring about much needed social development, without interaction with the marginalised community on the appropriation of space. This would allow them to establish themselves as a formal organisation. This "collective bargaining that can be used as a resource for agents with similar views, norms and values" (Lamsal, 2012:120). An example of 'collective bargaining' is seen in the CBOs and offers a platform to incorporate the marginalised community's sense of agency. In the second phase of the data collection, projects that make use of the CBO are used to assess how this promotes the participation of the marginalised community and increases their *right to the city.* The CBOs act as a unit of social development enacted by the political agency and through legal agreements they are able to interact with the government institutions providing water and sanitation services.

4.11 The role of design in appropriating space in group run projects

Data collected in first phase of this study suggests that there are glaring concerns about active community involvement in the selected projects. The case studies chosen here emerged from discussions with local communities about best practices, and stalled implementation from similar projects. The Huruma project was one of the case studies identified. This project started in 2009 but it has to date failed to meet its main objective as

far as the provision of water and sanitation services to the informal settlement dwellers is concerned. The Limuru Iko-toilet projects were identified as case studies that had provided according to the main objectives, both water and sanitation services as well as small-scale businesses within the project building.

To show how the intervention of biogas toilets works in the Huruma project, Lyle's (1994) approach of the water cycle in regenerative design is used. (see figure 4.17 below). The difference between the Huruma project and the compost toilets is that the storage stage completes the cycle by producing methane gas before the dried compost is ready for use. The methane gas emitted was to be used in households, but because of the shortcomings of this strategy for providing sanitation services, the community reclaimed responsibility for waste disposal. The water storage in the urban setting is used to conserve municipal water which is then sold to the community members by an onsite water vendor. Although there's no regenerative design strategy in the rural facility, socioeconomic strategies aid the community to use the facility to generate financial resources from the provision of water and sanitation services.

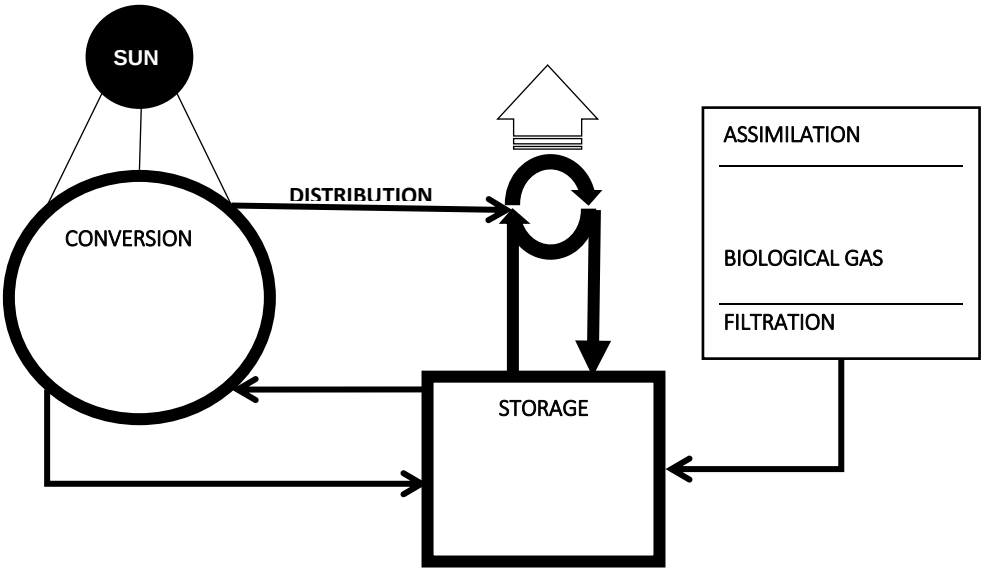

Figure 4.17: Biological re-assimilation (Lyle, 1994:231).

Despite the critical need for water and sanitation services, the only facility built in the community is currently not operational. For the Huruma Self-Help Group (SHG), managing the project depicted in Figure 4.18 has been ineffective because since the inception of the project in 2009, the external agencies, have visited the site irregularly and given little or no support to the group managing the project. The images in figure 4.18 depict the closure of the project, in the third photo the tap to access water has been removed.

Figure 4.18: Huruma Biogas centre

The appropriation of space in this instance was done through NGOs and local churches in the area to locate the project. The Huruma SHG were only involved after the project parameters were decided. The architecture in the informal settlement is in direct contradiction with the project that is implemented. The informal settlement is mainly constructed from timber and iron sheets, as seen in Figure 4.19, while the implemented project is from quarry stones and concrete. By building the biogas facility three stories higher than the surrounding buildings, it assumes some degree of importance. However, the facility has lost its status in the community because the project is no longer functional.

Figure 4.19: An example of typical housing structures in Huruma

Design in this instance has had little or no impact in changing the space appropriation in the marginalised setting situated in the urban area. This is mainly due to the differences in social relations between the political agency and community. These differences are manifested in the spaces chosen for the representation of the marginalised community. In the rural area, the design of the public facility incorporates retail outlets meant to generate more revenue

from the facility. Design then redefines the appropriation of space in sanitation services by attaching interactive social relations to change society's view on sanitation facilities.

The public toilets in Limuru use large Roto© Tanks at the top of the building, and at the bottom of the plot to store municipal water, as seen in figure 20. The grey-water in this case is drained into municipal reservoirs that dispose it away from the site and from users of the public facility. The providers of the facility chose, in this instance, to rather provide waste management than use regenerative strategies managed by community organisations.

Figure 4.20: Views of the Iko-toilet at Limuru Town bus-stop.

The projects are run by a Limuru SHG for physically challenged individuals. According to the local government informant, these projects were built to replace previous informal units that the Limuru SHG had constructed as a means of economic support. The Limuru SHG was considered as viable to receiving the orders for running the project because they were seen as a marginalised group. Although water and sanitation services are provided by the local government, they are paid for by the Limuru SHG managing the facility. In addition to these payments, the group also pays rental fees to the social enterprise, one of the stakeholders in the WSS programme. The marginalised group's right to water in this instance is entrusted to the social enterprise which currently charges rent to the SHG running the public facility. By paying for the use of the facility, the group has no control or power over the programme or project they manage. The appropriation of space where the projects are situated is chosen by the local government which acts as the political agency, even though they were not involved in financing and implementation of the project.

The value chain in Table 4.14 is used to draw out the internal relationships within the Huruma and Limuru SHGs managing the facilities, and the political agencies responsible for the implementation of the programme. From the previous data collection, the political agency controls the resources and inputs in the value chain. The marginalised groups in the community have no representation in the control and power structures of the WSS

programme. The Huruma SHG in the urban setting are disadvantaged significantly because their project is currently not operational and efforts to resuscitate it have been futile. In the rural setting, the projects are seen to run optimally even as most of the generated revenue is used to pay rent and WSS bills, leaving little money for the SHG running the facility. The community initiative in both settings is ineffective in the marginalised setting where it is implemented, because agencies controlling projects have diverted socioeconomic resources.

Table 4.14: Value chain of public ablution blocks

RESOURCES	INPUT	SOCIAL INITIATIVES	OUTPUT	COMMUNITY INITIATIVE	OUTCOME	IMPACT
Designers, clients, community members, government institutions	Interior spaces, project parameters, usage matrix	Sensitization workshops for the biogas. HURUMA It is done as a profit-based project. LIMURU	Delineation and obscuring of information given to the community members within marginalised settings. The communities are subject to the will of the benefactors and external agencies.	The able-minded take the project and use it to further their individual agendas	Single SHG runs the water and sanitation project not the community.	The community at large view it as part of a government facility and not as a community facility
Water access, sewerage extraction	Piping, taps, metres	Creation of Self-Help Groups (SHG)	Day-to-day running is entrusted to a group and not the community	There's no active participation from the community to realise an initiative that represents that specific context.	The government regulates water and sanitation services in the informal settlements. This unfortunately there are no social or cultural benefits for the community.	The government has increased revenue, and the community has improved access to water and sanitation services.
Water storage tanks	Storage during water shortages	The facility is not built as a community based unit, but as a business unit, where the SHG sells water as a vendor. HURUMA The SHG charges users of the facility in order to pay for water and sanitation services provided by the local government LIMURU	Isolation of the commune aspect bringing to the fore the economic aspect.	The community form the labour force during construction. Sometimes the community members, no payments for the labour provided. They also just receive the completed project with no guidelines for up-scaling the facility.	Management of the facility and development is difficult due to lack of guidelines and programme policies.	The narrow context limits the reach the project can have on the wider community since the project touches on social and cultural aspects of the setting. Water and sanitation access, and waste disposal can influence the setting, for better or worse.

4.12 Understanding group agency in the ablution block project.

Appropriation of space is directed by everyday life activities (Lefebvre, 1991) and these day-to-day activities are not only directly "motivated by individuals, but also [they] come about from reflective monitoring, where the individual can rationalise their actions" (Giddens, 1984:6). In this instance, there is visible internal motivations of the marginalised communities from their internal activities within the SHGs. If the community has no say in their projects, and take no part in the appropriation of space, they may not assume the intended custodianship. This is seen in the social initiatives associated with the ablution blocks and the SHG managing the blocks. In both instances, the group agent and community interact only when community members make their payments to use the facility. This both isolates and relegates the facility to a purely business entity instead of a communal facility. The community does not view the block as a space where reflective monitoring of civic action occurs, nor as a place where their right to the city can be actualised. As stated in figure 4.13, the social activities done by the SHG are constrained to the sale of both water and access to the sanitation facility. This is seen in the extract from a group agent running one of the facilities in Limuru.

> *"Yeah we rent, so sometimes I don't have a clear figure of Athi… Because ours is rented by the Iko Toilet. That concept is very unclear to many people, in fact we're at war with Athi Water, because their bill is so high, we never benefit." (Limuru INT11-04).*

The specifications of the project are decided by the political agency which provides resources for the implementation of the project. The government through their regulations, further alienate these settings, causing increased separation in the society. For marginalised communities to foster a sense of agency in the appropriation of space, suitable motivation needs to be introduced. This motivation should emerge from the community itself. This can be assessed from the unacknowledged conditions stemming from government regulations. Marginalised groups in society need to affirm their right to participate in the production of space in their setting, especially as these spaces result in the places where they live in. By accepting the difference in the social relations within these groups, relevant approaches can be validated through interactive development strategies that build community capacity.

Here, "human *routines*, based on rational thought, and not on the often hidden *motivations* that drive our actions, are separate conditions. The relevance of the separation between routines and motivations can be witnessed through the capabilities possessed by individuals and the unconscious results of their actions" (Lamsal, 2012:117). These capabilities are what constitute the capacity that help communities apply their knowledge of suitable solutions to challenges facing them. On the one hand, the government sought to have revenue from

supply of water and sanitation services to marginalised groups, while the community aims to improve their health and wellbeing by having adequate access to water and sanitation services. Therefore the formation of SHG serves both purposes. For the community, they are able to carry out their daily activities that depend on access to clean water and reliable sanitation, and for the government, it can receive payment for the provision of water and sanitation services. The political agency are motivated to delegate the management of the projects to SHGs because of the revenue they are able to generate from marginalised groups in communities.

The intent of the political agency and the actions of the community members are dissimilar. The daily activities of the community contradict the motivation behind the WSS programme implemented by the government. This is evident from the impacts of the programme on the social conditions of the members of the community especially in cases where the WSS projects are meant to improve the health and wellbeing of the community. The consequences of what community members do are events leading to spatial appropriation, which would not have happened if the community had behaved differently. This appropriation is not within the scope of the political agency and they have no power to have stopped it (Giddens 1984). These consequences discussed in next section look at the internal relationship that influence the WSS in the public ablution blocks. This brief outline of the internal relationships and influence of external agencies, extracted from the value chain in Table 4.13, is used as a lens to understand the role the SHC in influencing the process controlled by the political agency.

Internal relationships that influence the WSS in the public ablution blocks

The marginalised community in the implementation of WSS projects, participate in the design process through the SHGs that they form. These representative groups are a part of the stipulated criteria for political agencies to handover ablution blocks for community management. Although handover of the built structure is usually done, the soft issues such as training and project documentation are often not accessible to the SHG. The wider community that the ablution block is meant serve are also not included as one of the stakeholders of the programme. This means that the ablution block is not a social initiative, but a means for the government to provide water and sanitation services. The appropriation of space, and the subsequent creation of place in this setting is achieved without the input of that particular community. Whilst the practical basic need of access to services is achieved, the social structures that determine the use, and subsequent value and meaning of the project are lost.

By not highlighting the difference in social practices of the marginalised community, the program loses an opportunity to validate the social practices of the community through

design in the spaces produced. This culminates in a loss of social structures that exist in these marginalised contexts. Spaces created by the built facility are more than physical structures that confines spaces for service provision. They incorporate within them a place where community expresses itself. From a design point of view these places are created from the appropriated spaces. In this respect, the participation of marginalised groups in community, plays an important role in ensuring that spaces conform to their current social practice. In the rural setting, the ablution block forms an informal space where people in transit can access public information from the board at the front of the shops, as seen in Figure 4.21. There are also seating areas around the retail shop frequented by passers-by, as seen in Figure 4.22. This place is not recognised in the design and leaves no room for the community to interact with the space. .

Figure 4.21: Side view of Iko Toilet at Limuru bus-stop showing community members at facility

The community initiative, where needs for a social space can occur, is unnoticed and superseded by the need to create a viable economic space. This, overshadows the social and cultural input of such projects. The groups are formed simply as a means to make money. These community organisations therefore fail to show a true representation of routines that occur in the setting. This would include how the space is ultimately used by the community members which often results in unequal access to water and sanitation services. In response, the consequence is slow improvement of marginalised settings through participatory approaches which are a result of the appropriation of formal space.

External agencies that exert control on the WSS in the public ablution blocks

During the conceptualisation of projects in marginalised settings, external agencies should accept the unacknowledged conditions of their actions. By providing built structures where

public access to water and sanitation services is limited to paying citizens, marginalised groups in the community are excluded from reliable access. This is disconcerting because Kenyan Water Act of 2002 is still in effect, yet many people are unable to access WSS services. Public facilities are therefore not accessible to all, but are controlled through payments and the level of 'public' it serves. When these facilities are implemented in informal settlements especially in the urban setting, they are usually not very helpful because most members of these informal settlements are low income earners. The Limuru SHG commissioned to run the ablution block in this setting is unable to sustain the project, because community members cannot pay uninterruptedly for services provided. Although members of the Huruma SHG acknowledge the risks associated with the lack of proper WSS, the project remains closed.

> *"You know even the way we have close this toilet here, it's very risky to the citizens of this community" (Huruma INT08-03).*

The handover process between the social enterprise is reliant on payment for the use of the facility when this did not occur, support for the project waned resulting in project failure and subsequent closure of the facility. These activities, as itemised by the Huruma and Limuru SHGs, shows the group's ability to create collective bargaining tools. These committees are meant to point out the ability of marginalised communities to advocate for the right to accessible and affordable water and sanitation services. They are therefore able to assess the needs of the community and attempt to understand the regulative power of the projects implemented in their setting. But if they receive no backing from the political agency in place, the relevance decreases as does the functioning of the project. For example, in the case of the Huruma ablution block it eventually had to close down because of lack of requisite support.

In the rural setting, the facilities are still functional because of the support from the political agency channelled through the social enterprise involved in the provision of these facilities. The main difference in this case is that the political agency takes payment in lieu of rent for the use of the built structure. Marginalised groups in this community are then unable to take charge, or address their specific needs because they are not a part of the WSS programme. By taking control of the revenue generated from the facility, the social enterprise is in effect controlling the initiative and its impact on the society. The struggles for power and control between the political agency and the Huruma SHG managing the ablution block affects the impact of that the project on the community.

Summary of the second phase of data collection

As mentioned before, people are not marginalised, but it is the setting in which they are in that causes the *difference* that marginalises them. This perceived difference hinges on Giddens (1984:11) argument that the *"events would not have happened if the actor had behaved differently"*. This difference which is will be highlighted in the next section of the analysis, is seen more vividly in informal settlements. Despite the existence of regulations to codify spaces homogenously, informal settlements have mainly subverted these rules. The formation of CBOs within these communities allows in one sense, for the marginalised communities to validate their *difference* within moderate boundaries of the political agency. Through a sense of agency, the architectural formations are then used to define, regulate and validate learning in the projects and enhance interaction. It is from these categories that the emergent coding are discussed.

4.13 Chapter summary

Architecture provides a powerful tool in society that can define, regulate and validate communities. Social initiatives that deal with access to basic needs such as a water, provide a suitable platform from which *the right to the city* (Lefebvre, 2008) for marginalised groups in community can be launched. By accepting and exploiting the different social practices of groups in a community, spaces created in a setting can be used to guide relations within the society. The political agency has within its preview a dynamic social tool, in community oriented provision of WSS services, with which to outline the appropriation of space. Through interactive engagement and learning activities with the community, marginalised settings can be viewed as spaces that represent social and cultural differences and ultimately build resilient communities.

In the next chapter of the sucessive analysis, this study address the political agency that initiated the projects for marginalised communities; and the users who are benefiting from the facilities provided. The information to be used has been gathered from open-ended interviews which were later analysed using line-by-line coding. As a filter to derive significant data, thematic concepts are used to align the discussion with aspects of community participation and engagement between stakeholders in the project. By using a line-by-line action coding, as outlined by Charmaz (2006). According to Grounded Theory this coding sets the pace for highlighting each response as significant to the analysis of the process experienced by both the political agency and the marginalised community. This action coding helps to generate the codes that mark the milestones in the process of implementing WSS projects for marginalised settings. These milestones are depicted in a relationship matrix emerging from the WSS programme discussed in the case studies, which outlines the design process of implementing the public facilities.

CHAPTER FIVE
KNOWLEDGE OUTCOMES FROM THE COLLECTED EVIDENCE

5.1 Introduction

The logic of data coding for a Grounded Theory project differs from quantitative logic, which applies *preconceived* categories or codes to the data. In Grounded Theory the codes are *created* by defining what is seen in the data. Through this active coding the study interacts with the data. Line-by-line coding moves the study toward fulfilling two criteria for completing Grounded Theory: fit and relevance. The study fits the empirical world and when constructed codes are developed into categories that crystallise participants' experience. This means using the active coding to identify emerging processes in the data that can assist in interpreting hidden assumptions. Relevance is attributed to the interpretations done using the *pathway analysis of social innovation* that emerged from the initial data collection. The analytical framework is used to interpret what is happening and makes relationships between implicit processes and visible structures (Charmaz, 2006).

The fieldwork done indicated a separation in how the WSS projects are implemented, and where power and control of the programme and the projects reside. The programme sets out the frame of reference for interaction and it is drawn up by the political agency. However the project running and management are handled by the CBOs or other organisations set up by the community. This indicates that the relations between the programme implementation and the running of the projects happen at two levels quite separate from each other. On the one hand, there are the dimensions that dictate the parameters of the programme, and on the other hand there are characteristics that describe the project being run. Because the political agency provide resources to develop the programme and implement the projects, they control the extent of the programme. This control in turn influences the type of project implemented in the setting and the community member capable of managing the facility. Although this is true, the evidence on the ground points to varying application of the programme parameters. The documentation used to evaluate how well the projects are run, and the handover documents spell out roles and responsibilities of stakeholders and provide secondary data of the participation of marginalised groups. The emerging codes from the data are then used to make comparisons from the different respondents in developing appropriate categories that highlight processes.

The data from line-by-line coding of the first successive data collection includes both the political agency and community representatives on the ground. At this stage of the analysis the study works with emerging indicators in both programme and project implementation. These indicators are assigned to describe emerging concepts derived from the participants'

responses. The assumptions are used to interrogate the information in order to identify successive relevant cases which can help to explain the emerging narrative.

5.2 Phase One: Fitting the emerging processes to the marginalised setting[3]

As a pre-requisite to grounding this study in the information gathered from the respondents, day-to-day activities influencing emerging codes are outlined in *Appendix DA01*. This is important if our theoretical underpinning of *the right to the city* (Lefebvre, 1991) is to be a lens in the study. The activities are divided into: the political agency, and the marginalised community, where the former creates the structures in which the latter interacts with. Our main interest is to interrogate the process, and thereby bring out aspects that cause the distinction between the two stakeholder groups to widen. The tables represent a description of the main activity identified in both the political agency and marginalised community. These activities are then linked to direct quotes from the interview transcripts. The comparisons are done to link the organisational process to the outcomes seen at the community level. We begin by looking at the representation in the programme of WSS services, and thereafter the appropriation of space for the projects under the programme. The concluding section is about the modified approach used by the political agency in the provision of water and sanitation services. The marginalised community's role is brought out in the responsibilities that they undertake in the project. This is seen more vividly in the Thika case study because the projects are implemented in a private setting, as opposed to the Gikomba case study where they are implemented in a public setting.

5.1.1 Programme representation from stakeholders groups

The programme for water and sanitation in marginalised settings was conceptualised from the draft policy for informal settlements (Limuru INT04-04). This policy has guided the interventions that are currently being implemented. Although geared toward assessing the reliability and adequacy of water and sanitation services in marginalised settings, it lacks participation from the communities living in the setting. In Table 5.1 memos discussed in *Appendix DA03* the coding itemise points that signify aspects in the process experienced by both the political agency and the marginalised community.

[3] This section is extracted from the conceptual memos in the case study database in *Appendix DA03*.

Table 5.1: Emerging comparisons from the initial memos for the implemented program.

POLITICAL AGENCY	MARGINALISED COMMUNITY
Program identification of stakeholders "So we're only talking about casual…they are not KKV" (Gikomba INT07-01). "So we didn't bring in people from afar…we employ just those people who are here" (Gikomba INT06). The community on the ground represents individuals who live in the informal settlement known for its economic hardships.	*Influence of community representatives in the program* "There's the labour policy; you cannot be employed for more than six months continuously…this is why you see the ones from KKV, the casuals we had at the beginning, there were not reinstated" (Gikomba INT06-01). The community has no influence in the programme, they are just passive actors appointed by the political agency.
Resources assigned to the program "We launched a report to say…this is where we're going to source the money... we introduce the project we want to do in the community" (UDDT INT01-02). Financial resources are controlled by the Water Service Board (WSB). The same applies to human resources used to implement the programme. They are all employees of the same WSB.	*Assigning roles to community participants* "Then they have **ownership** of the project based in if its labour they're providing" (UDDT INT01-02). "If it's contribution, what kind of contribution we need from them…to do manual jobs in the areas…and you see that builds **ownership**, they feel they're a part of that project" (UDDT INT05-02). The community is seen as a labour force working in the project. They have no managerial positions and their responsibilities are outlined by the political agency.

In order to provide marginalised groups in society with adequate water and sanitation services, the WSS programme has forced government institutions to enlist assistance from NGOs and Social Enterprises. The marginalised community seen in the programme represents groups with economic challenges. By gaining access to the community, the political agency asserts itself as an agent of change by controlling the implementation of WSS facilities. It is from this perspective that the community is seen to have no say in the design of WSS programme parameters. This is further enforced by the fact that the community members are employed and paid by the political agency, as stated by Gikomba INT06-01.

This is the first sign of lack of agency transfer that influences the WSS for marginalised communities. The resources employed to ensure that the projects are implemented identify positions of power and control. The role assigned to marginalised groups is seen to be lower in the levels of hierarchy. This is because there are no managerial duties assigned to community members, therefore ownership of the facility and physical space is lost. Ownership is important especially when dealing with finite resources because it engenders the safeguarding of access points. WSS projects are key facilities for this access in marginalised settings, as individual members or community groups do not have adequate access. Subsequently, transfer of agency which influences control of projects can give marginalised communities representation in programmes that implement WSS facilities in their settings.

Ownership of physical space is approached in the appropriation of formal space. This represents the process of choosing suitable sites and acknowledgement by political

agencies of the influence of society when projects are constructed. In the next section, we look at how appropriation of space takes shape in marginalised settings.

5.1.2 Appropriating space for project implementation

Planning of structures in marginalised settings is informal and makes discerning culturally meaningful places difficult for an observer. Therefore when grounding the data by concentrating on the experiences of the respondents (Charmaz, 2006), the role in appropriating space is decided by the respondents in both their verbal and non-verbal communication. This is important because the feeling of being removed from the process of identifying and articulating the production of space is observed in the repossession of formal space that was previously used by marginalised communities as an open market area. In Table 5.2 political agencies have taken over the production of space, while the marginalised community navigate between boundaries demarcated for them.

Table 5.2: Emerging comparisons from the initial memos for space appropriation

POLITICAL AGENCY	MARGINALISED COMMUNITY
Appropriating physical space for the project The political agency uses their resource and those of the NGOs to say which area in the setting is used. "They [NGOs] already know the kind of space we can use in that particular community" (UDDT INT05-02).	*Community involvement in appropriating physical space* "Yes, along the river…this riparian area…we agree with them [NGOs and Social Enterprises] and they set up at a particular place" (Gikomba INT06-01). All appropriation within marginalised setting is done by the political agency.
Social space The political agency wishes to change social practices for the program to work. "Those cultural differences that we get…what do you do with them? You convince them that the world has changed" (UDDT INT05-02).	*Social space* "So now…the traders are quiet just the way they were asked to move…But…we didn't have that good relation because they were seeing we are evicting them" (UDDT INT05-02).

Decisions about the site to be used to setup WSS projects in marginalised settings is mainly provided by political agencies. As stated "[NGOs] already know the kind of space we can use in that particular community" (UDDT INT05-02). These decisions are made in isolation from the community living in the setting and the marginalised community is excluded. From this separation the government deepens this feeling by giving precedence to NGOs and social enterprises to provide facilities (Gikomba INT06-01). Importance of social practices for the success of WSS programmes is seen in the implication of political agency statements of "convincing communities of *difference* that they should change" (UDDT INT05-02). By not respecting a community's *right to difference*, the projects implemented are in danger of being considered irrelevant. In some areas quiet resignation is the result of this disregard of the community's social practices (Gikomba INT06-01).

This distinction between what the political agency intended, and the expectations of the marginalised community creates a binary process. Separate, parallel processes occur within the same program making project definitions complex. Although the desired output of an increase in water and sanitation provision is seen, the outcomes and impacts on the community do not enforce equity and reliability.

By advocating for external political agencies, i.e. NGOs and social enterprises to participate in spatial appropriation, the government divides agency and by extension change from digging pit latrines in marginalised contexts. This is seen more clearly in the compost toilets implemented in both cases mentioned in the previous chapter. In wider public use, as seen in the next section, this project is given to social enterprises which charge the community for usage. This modified technique of dealing with water and sanitation provision, a change from digging pit latrines, is highlighted in the following section.

5.1.3 Modified water and sanitation access for marginalised settings.

Current means of waste disposal uses technology to assist in the reuse of resources to create a place for effective health and wellbeing. In the case studies natural processes are used for waste disposal as a means to separate solids and liquids, which are then re-introduced into the surrounding waterways. This approach of regenerative strategies create a cyclic process of use and reuse of natural resources (Lyle, 1994). In marginalised settings this can improve both the wellbeing and livelihoods of people by using waste as a resource. The compost toilets are a good example of regenerative strategies that benefit both the socioeconomic and environmental aspects in society.

Table 5.3: Emerging comparisons from the initial memos for modified access in water and sanitation provision.

POLITICAL AGENCY	MARGINALISED COMMUNITY
Project techniques implemented at site "Some of them were born here, other were raised here. So we didn't bring in people from afar, and bring them here" (Gikomba INT07_21).	*Influence of marginalised groups on new technology projects.* "So we can continue with them, we employ them for three months on a renewable contract" (Gikomba INT06_07).
Processes initiating new facilities "Hmm…like now we have this program called 'Fresh Life' for these toilets (Gikomba INT06_155)." "And if you look, like a toilet such as that one, it is serving the local community" (Gikomba INT06_159).	*The role of marginalised communities in new facilities* "We agree with them [Fresh Life] and they set up at a particular place" (Gikomba INT06_158).

As seen in Table 5.3 the compost toilets are used to reduce the burden on municipal services. In this case, the biological re-assimilation acts as a process to convert waste to a resource (Lyle, 1994; Anon, 2013). For the government institutions, this reduces their financial expenditure on the marginalised groups whereas in previous years the use of public toilet facilities, like Freshlife, were offered as a free service. The political agencies retain the

service provision with the added benefit of additional revenue, which was not always the case in the past. In contrast, the marginalised community now have an added expense, because they have to pay to use the public water and sanitation facilities.

5.1.4 Questions arising from phase one of successive analysis

In the process outlined in the previous sections, the active participation of the marginalised community is not well defined. The political agency seems to hold sway over decisions made in the conceptualisation and implementation of the projects. The regulations governing the programme determine which social practices are preserved and which ones are to be discarded, without any input from the marginalised community. This raises the following questions:

- How does the political agency intend to safeguard the rights of the marginalised community in the implementation of WSS projects?
- What steps are taken to ensure the community has the capacity to engage with political agencies?

These questions are answered in the next phase of successive analysis where projects are run by CBOs and SHGs. These CBOs are formed by local community members to ensure that representation is fair and accepted by everyone in the setting.

5.3 Phase Two: Bridging the gap of community engagement through Community Based Organisations (CBOs)

Participation where stakeholders attend meetings and training, is different from engagement that ensures that stakeholders in the process learn from each other and apply this knowledge to the process within the setting. In this case it means that not only the marginalised community is expected to learn and implement, but the political agency as well. This type of interdependent relationship safeguards social practices and builds trust for a ‘good fit’ in design and social networks that improve engagement within the community. Therefore the gap that was observed in the previous analysis is filled by the introduction of CBOs in the running of the WSS project. Once these CBOs are formed, they represent a centre where marginalised communities interact and therefore validate their participation. This transformation of basic service provision which engages the community through the CBOs introduces a different means for WSS access. For the community to adapt to this change of service provision, they have to be able to understand the transfer of responsibilities, and the capacities needed to maintain reliable service. The next sections look at: a) how these community based organisations represent a participatory approach used as a tool for effective project evaluation by the political agencies, and b) what

capacities result from these CBOs that promote resiliency in communities faced with reduced water and sanitation resources.

5.3.1 Community Participatory Approach (CPA) as a tool for effective project evaluation

The WSS projects implemented in marginalised settings are run with the help of CBOs and SHGs that work in collaboration with social enterprises in the area. This approach is seen to improve service provision to the marginalised communities, although the management and control of the project lies with the political agencies. In Table 5.4 emerging descriptions for active participation of marginalised groups is outlined. This shows the programme aspects that support participation and how they are received by the community organisations running the projects.

Table 5.4: Emerging comparisons from the initial memos for community participatory approach

POLITICAL AGENCY	MARGINALISED COMMUNITY
Project management of implemented facilities "The ownership [of the ablution blocks] was almost shared between the NGOs and the communities, and the NGO would be Uncle Sam…where they would actually control the [ablution] blocks (Limuru INT04-04). "The procurement was not in the right manner…it was left to me. I reviewed it, and the costs were within the cost… so I can take control" (Limuru INT02-04). "Well…I think there was a financing arrangement between Athi and the contractor. I think [when] it was built then" (Limuru INT10-04).	*The role of CBOs in running projects in their setting.* "Yes we rent, so sometimes I don't have a clear figure of Athi…now the other question is, where does the council comes in? You know what Iko did…they're the ones who wrote the proposal to the council, then they just look for the money to build the toilets, that's what the council did" (Limuru INT11-04). "We didn't know that when we generate money it should become a CBO" (Huruma INT08-03). "We cannot sell water, because we have not yet…registered" (Huruma INT09-03).
Being accountable for rendered services through the WSS program "Because we did informal settlement policies…we realized there were so many people unserved. This is in-spite of so much money being sunk in Kibera" (Limuru INT04-04). "This is something that should be sorted by the Limuru guys… when people realized later [that there was a problem with the projects], they started running away" Limuru INT02-04). "Rent [the problem arising from in the projects]? I think this is something you need to check up with Athi" (Limuru INT10-04).	*The CBO/SHG's ability to enforce the political agency's responsibility for adequate and reliable WSS service* "You know…with Iko-Toilet it is very complicated. The concept is very unclear to many people, in fact we are at war with Athi because the water bill is so high… But then, why do I pay Iko then? They say they're recovering their costs" (Limuru INT11-04). "The city council came…to cut the connection. We told them they shouldn't cut it, because they are not the ones who installed it anyway" (Huruma INT08-03).
Evaluating the suitability of the WSS program in service provision "Yet if you went to the actual structures they were at most…doing interviews and documenting miseries of people, but not actually not giving then the infrastructure… Where they [the local WSP] did not intervene some of these ablution blocks have not been completed" (Limuru INT04-04). "So under what circumstances these ones were financed by Athi, I don't know…Actually, there's no report you're going to get in Athi between those two projects" (Limuru INT10-04).	*Community assessments of service provision by government institutions.* "But you know, you should cut it because you didn't provide us with a metre" (Huruma INT08-03). "I was told by another guy who used to be there…he told me that most of the material came from AWSB then… I couldn't understand" (Limuru INT11-04). "The toilet itself, it satisfies…with a lot of war" (Limuru INT11-04).

As seen in the summary of management in the implemented facilities, there are different perspectives of what this management entails. If we look at the political agencies, the process is unclear and all respondents have different responses to the management or ownership, as pointed out by Limuru INT04-04. The distortion seems to start at the procurement and construction level, where ownership is given to the institution expected to manage it (Limuru INT02-04). This is mirrored in the community where they do not know the role of the political agencies. Due to lack of written documentation, each political agent depicts themselves as the owner of the project (Limuru INT11-04). When the community's role takes on more responsibilities, then they are expected to register as a CBO. This information is kept from the community which is a key figure in making the projects function efficiently. This was raised in Huruma INT08-03 Line18 "Not all members of the committee are privy to the documentation of the project."

The lack of clear guidelines on management and ownership leads to lack of accountability from the political agencies. This is draft "informal settlements policy" (Limuru INT04-04) was done for grassroots service provision but is still not implemented. The government institution now feels that accountability should be done by other political agents within the stakeholder group (Limuru INT02-04). The community in turn feel that the network created between it and the political agencies is very complicated. This complication has led to unjustifiable high costs in the running of the facility (Limuru INT11-04) and these costs are not subsidised by the local government, which poses a problem for the SHG on the ground (Limuru INT10-04). This means that an effective evaluation of the impact of these projects is difficult to perform as stakeholders do not share information.

The evaluation provisionally performed by the political agency as they strive to improve water and sanitation access in marginalised settings, is done once over the whole period of the programme. Once complete, they then used local Water Service Providers (WSPs) to help bridge the gap so as to improve projects (Limuru INT04-04). However, the local WSP disagrees with this assessment stating that "under what circumstances these [projects for Iko Toilet] were financed by Athi, I don't know" (Limuru INT10-04). As far as evaluations go "there's no report you're going to get in Athi [for] those two projects (the ones visited at site 04) (Limuru INT10-04). The SHG that runs the facility believes that offering reliable services to the community is a well-deserved outcome despite the lack of relations between the political agencies (Limuru INT11-04). The community works under duress with a lot of regulatory interference coming from the political agencies and most them are not explained to the community.

The 'terminal evaluation' after the implementation of the first phase of water kiosks and ablution blocks was done using an external agent. By not keeping the evaluation in-house

political agencies in government risk losing vital information that could produce knowledge outcomes relevant to the settings. External agents are not involved from programme conception and therefore their perspective of the WSS programme might be biased. The evaluation report was concerned with illegal connections and non-payments by the marginalised groups in Kibera (Doc 12). The root of civil disobedience is caused by a need to satisfy basic needs of an individual. Engaging in use of water from illegal connections is a sign that access to water is difficult in the community. By ensuring reliable connections as opposed to noting gaps in economic viability of water provision, political agencies can provide a platform for the development in marginalised settings. Evaluation of projects and programmes for WSS provision is therefore important in ensuring that equitable access is delivered to all communities.

In this section the role of ensuring community participation for effective evaluation of WSS projects was discussed. The evaluation done by the political agencies is seen to be informal at best and most documents provided are insufficient to drive knowledge outcomes. The community which is meant to provide the base information is not privy to the process that would be enriched because of their involvement in the evaluation. In the next section, the means to enrich the process through community participation is looked at through building capacities.

5.3.2 Building resilient communities through increased capacities

The CBOs are a complementary tool to an inclusive process that signifies a radical change in service provision for marginalised settings. Within this new framework there is an opportunity to use the platform of community organisations as a means to improve capacities in marginalised communities, thereby building resilience. This ability to adapt to perturbations in current water resource access is vital to ensuring the health and wellbeing of society. By ensuring that social practices of marginalised groups are integrated in the production of spaces for WSS projects, places designed for the community help to safeguard water and sanitation provision. In Table 5.5 these points are situated in both the political agencies and the marginalised community. Through legal documents the political agency attempts to reach the marginalised community and enlist their assistance in service provision. On the contrary this approach is ill-equipped to meet the varying needs of the marginalised groups as their specific social practices were not considered prior to the implementation.

Table 5.5: Emerging comparisons from the initial memos for building resilient communities

POLITICAL AGENCY	MARGINALISED COMMUNITY
Development of legal agreement to obtain compliance within the projects "What am saying, there was a contract between Athi and Eco-Tech, but that contract was contested because it wasn't straight. It was like we were losing the facility" (Limuru INT04-04). No, there has never been a handing-over process, either between us or the council. Well, they have never handed over [the ablution block]. Because I asked to who –are they paying rent], they even brought me the chairman. Because the Town Clerk is not aware, and in Athi I was told, I don't know what, so… there was supposed to be a tripartite agreement between Athi, council and then the Iko-Toilet or us. You know Athi could finish with them and forward them [ablution blocks] to us "(Limuru INT10-04).	*Agreements used to ensure CBO/SHG comply with regulations enacted by the political agency.* "There's a very big problem because the toilet, you didn't give the disabled you gave another NGO… me, I don't have an agreement with them [AWSB], they don't even know me" (Limuru INT11-04).
Increasing community capacities to ensure relevance of the implementation processes to the CBO/SHG "So you find in some of the bio-centres they are being run by Umande Trust… the partnerships, we want to ask for proposals with our NGOs in our areas so that they can take the soft issues of the capacity building for sanitation" (Limuru INT04-04). "So, the local council our municipality was not also [involved], because it was supposed to be a joint venture between the council, Athi and the guy…something needs to be done" (Limuru INT10-04).	*Additional aspects in the WSS program that are geared toward increase community capabilities* "I am fighting for their rights [the disabled]. It's good because my federation is coming [along]" (Limuru INT11-04). "The project it was introduced by these people [called] Umande…now that was as far [draining water from the biogas chamber] as we could take it [an attempt to fix the biogas emission that has stopped] as a community" (Huruma INT08-03).
Performing training to build both communities' and political agencies' capacities in the program. "The consultancy, there is a component of the social aspect…we are also able to identify the communities, the challenge is that we are not able to track downstream, what will happen in the future. It is important to follow-up on training, [though] we might not be able to it as AWSB" (Limuru INT04-04). "Because even when we came on board, we were just seeing, and we came to know [later] when someone came from Athi to some inspection…yes, we really didn't know" (Limuru INT10-04).	*Learning programs that ensure growth and sustainability of the program.* "We have never gone for any training, [even though] they recommend ours to others because it is best run. It is also good because it changes the community's attitude…towards the disabled" (Limuru INT11-04). "You know the way we have closed this toilet here, it's very risky to the citizens of this community" (Huruma INT08-03). "The toilets, we were not shown [how they operate]. The Umande people have come in the past… I didn't understand what they investigated or what they thought of it. Because at the moment they have stayed back for a very long time without coming back" (Huruma INT09-03).

In an effort to ensure equitable access to water and sanitation, the government institutions enacted a handover agreement to ensure all stakeholders were represented in the process. Whilst this was agreed upon at the outset, the implementation did not work as planned. As stated by Limuru INT04-04 "[the] contract was contested because it was not straight." At the local level there seemed to be no legal document at all albeit the council is aware that the tripartite agreement exists. Unfortunately, the community is not part of the agreement either, raising serious concerns about the representation in the WSS contract.

The political agency, by enlisting the assistance of social enterprises, loses the facilities to external stakeholders (Limuru INT04-04). If the local government is not involved in the implementation or management of the facility then the community has no local contact to assist them with the facility. The community which forms organisations to bridge the problem of minimal communication, complain that the political agency do not keep constant contact (Huruma INT08-03). These organisations offer a good opportunity for the political agency to access the community for transfer of information. This contact can be translated by introducing training programmes for the community facilitated by the political agencies.

Training programs offer a platform that can disseminate knowledge to ensure growth and sustainability of WSS projects in marginalised communities. Because the communities have been neglected at the level of training (Limuru INT11-04), it is difficult to upscale programs to provide for diverse challenges concerning access to water and sanitation. This is true as pointed out by Huruma INT08-03 “[that by closing the toilet] it’s very risky to the citizens of this community.” Therefore the community sees the importance of reliable water and sanitation to the health and wellbeing of their community. But even efforts to repair the facility and get help from the political agency have been unsuccessful. Here, there is a clear distinction between expectations of the marginalised community, and the actual access to services provided by the political agency.

Documenting the community participatory approach in the handover agreement

The handover document represents a change in the way political agencies choose to deal with advancement in the development of informal settlements. Occupancy evaluations based on running of WSS facilities are done by CBOs in charge of the running of the facilities. This has been difficult because some projects are run without the tripartite agreement, while others have been shut down awaiting records of CBO registration. These different implementation stages in the community participatory approach show that significant changes are limited to few projects in the programme. However, for efficient implementation of the WSS programme, and subsequent effective running of the project, the structures that house the services need to be allocated decisively (*Appendix DA05*). This would need the authoritative structures embedded in the political agencies to include stakeholders in the outer margins of society. As seen in the previous section, the community members in these marginalised settings are aware but incapable of executing change. These limitations are mostly due to insufficient resources, be they monetory, human or technical capabilities. By availing of the necessary tools needed political agencies can gradually assist the transition of custodianship to help improve the sustainability of water and sanitation services. Adapting the management style and subsequently taking ownership of resource facilities can be the drivers to change in both social and economic aspects of marginalised communities.

5.3.3 Summary of successive data analysis

In this second phase of successive data analysis observed further delineation of social issues that are the backbone of the WSS programme. The political agency, although determined to provide adequate water and sanitation services, lacks a grounded approach to the communities they wish to serve. By not observing the distinct social practices of the marginalised communities they approach, the resulting spatial production is not suitable for the community. This is seen to severely hinder the community's ability to access the intended services, as seen in Huruma. These challenges emerged in the two previously discussed public facilities, where in Gikomba service provision was taken over by social enterprises while in Limuru the running costs are seen as a burden to the SHG running the facility. The new approach of introducing community roles in provision of WSS services limits the impact by failing to give accountability to both parties. Each stakeholder group runs independent to each other while working on the same projects and through the same programme. By distancing themselves from each other, the political agencies and the marginalised communities tend to hinder the effectiveness of the community participatory approach.

In the next section the relationships between the experiences of the political agencies and the marginalised communities are outlined. The response from interviewees in the line-line coding section outlined in *Appendix DA03* is categorised in a table shown in *Appendix DA05*. These categories and properties are further analysed and linked to the collected data in memos that assign meaning to quotes selected from the respondents.

5.4 Drawing out the frame of reference

Comparisons of respondents from the four case studies is grouped according to the properties revealed in the line-by-line coding (seen in *Appendix DA03*). The emerging properties are further delineated in the memos (seen in *Appendix D04*), the following analysis of the memos categories emerge and are further discussed in *Appendix D05* and *D06*. The emerging relationship and its relevance to the design framework for social innovation is depicted in Figure 5.1.

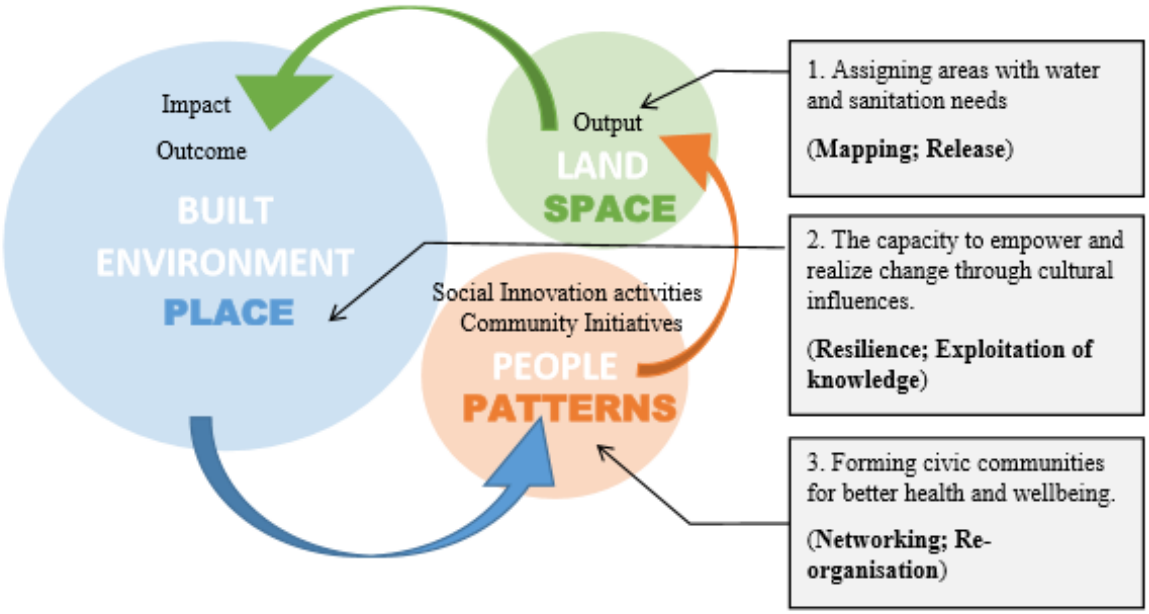

Figure 5.1: Diagrammatic process of space production and place creation

To better understand this relationship, we begin by assigning the sections of the properties itemised in *Appendix DA06* to explain how they fit and assit in making meaning from the data. In this first stage of exploring emerging data, early memos are used to look for processes in the field. According to Charmaz (2006:81) “memos are useful for charting observed and predicted relationships in the data and between the emerging categories”. The initial memos in *Appendix DA04* are used to observe relationships in data from line-by-line coding in *Appendix DA02.* Thereafter, an analysis of the emerging properties is done [as seen in *Appendix DA07*], linking the respondents quotes and discussing the relationship between the interviews done. By clarifying the process, categories emerge to point out steps experienced by the respondents which are assigned the following headings:

a. **Ownership**: project placement, project documents, ownership transfer,a dn advancement programmes.
b. **Accountability**: instructions for accountability, levels of accountability, evidence of accountability, and integration.
c. **Compliance**: project guidelines, compliance assurance, intervention for compliance, and incentives and outcomes for compliance.
d. **Evaluation**: efficiency, properties of evaluation, and evaluation programme and impact.
e. **Transformation**: old resource points, instruction for transformation, and principles of transformation in new contexts.

f. **Adaptation**: change, joint composition, improved processes, policy intervention for locality improvements.
g. **Relations**: interaction, outcome of groups, new partnerships, and emerging programmes and their impacts.
h. **Transfer**: methods of transfer, units of transfer, positioning, and uptake measures and its impacts.
i. **Capacity**: building capacities, learning programmes, feedback, and community capabilities through capacities for learning.
j. **Follow-up**: instructions for project, disseminated information on project, upkeep of facility,a nd development of facility and expansion of building programme.

The main aspect drawn from these headings is the distinction between the perceived participation of marginalised communities and the actual participation seen in the WSS programme. Practical access, motivated by a community's social practices is seen to be built on understanding substantive processes. Therefore, the elaborations seen in the memos are "done deductively, comparing one respondent to another. The comparisons allow the study to affirm the emerging codes and to interrogate the relationships between the sub-categories that later form categories" (Groat & Wang, 2002:182). This approach to the analysis of data is relevant to the study of creating places through the production of spaces by:

a. Elaborating codes emerging from stakeholders who appropriate space
b. Verifying emerging patterns through comparison, and
c. Illustrating the points of abstraction so as to present a generic process that identifies significant services in the built environment.

5.4.1 Assigning sub-categories to the category of agency

Ownership

Transfer ownership of facility from the national government to the local government, and from the government to the community is done through formal and informal methods. Through the hand-over document, CBOs have access to formalise partnership that protects their rights while delivering services to the general population. This is complemented by the SHGs formed to consolidate resources in marginalised communities, in a bid to increase diversity in socioeconomic activities. Full management means control of finances and future development within the project, and hence the partnership is viewed as a PPP (Public-Private Partnership). Due to lack of clear boundaries, the project hand-over is left incomplete and leads to a lack of control of finances by CBO on site. The transfer of resources is withheld from the community and therefore full control of projects may offer an alternative to

the current state of ownership. Due to inadequate instruction at the programme level, agency is assumed by the stakeholder with greater power.

(**interview extract highlighting the emerging narrative discussed in the memo**)

Limuru INT11_15 “Because now, it’s being managed by disabled. But people, a lot of people think we are being helped by the council to run the toilet.”… _63 “But Iko why do you give our project to an NGO?”… _67 “Yes and the middleman is an NGO, then the NGO takes our money.”

The marginalised community is seen to navigate the structure of agency with great difficulty as the political agency does not provide any strategy for addressing the problems that they encounter in the process. The social enterprise, one of the stakeholders in the political agency acts as a gatekeeper between the marginalised community and the government institutions. This leads to aggravations between the partners in the newly formed relationship for service delivery to marginalised settings.

Accountability

From the extracts, there is a visible gap in the information shared between the political agencies. This results in lack of accountability for the contribution of partners and the duties they are expected to perform. The distinction in the levels of responsibility reflects how the programme works. Government entities that own the asset are unaware of what is going on, partly because of lack of due process. This is highlighted when the interviewee questions what role of the county has in the process of providing WSS access to the community. There is clear evidence of management problems especially at the level of information sharing between the political agencies. This lack of evidence to identify accountability for funds when provision is “[seen] as cartle” has severe impacts on the projects on the ground.

(**interview extract highlighting the emerging narrative discussed in the memo**)

Limuru INT11_124 “Yes but what is the role of the council?” _138 “But now you see it’s like a cartel.” _So essentially, what they’re doing is exploiting the citizen.”

This apparent lack of due process and accountability are reflected again in the responses of the marginalised community members who do not see the role of their local council in the process. Ironically the resources are provided by the local council. Because the local government is not involved at the ground level, there is a general feeling of mistrust in terms of resource allocation and payment of revenue to the authoritative power.

Compliance

The political agencies are meant to support service delivery to marginalised settings. Therefore these special provisions should work towards improved living conditions and

reliable services. To make sure that political agencies work according to set guidelines, the local government institutions and the leadership needs to be part of the process. The design interventions of the service projects highlights the relationships between the community and the political agencies. These relationships are important because they show how programmes and projects are managed on the ground.

(**interview extract highlighting the emerging narrative discussed in the memo**)

Limuru INT11_223 “I was paying them because it’s genuine, but now they’re not genuine. I was supposed to you [Athi] or to eh the new municipal council?”

The fact that the marginalised community is paying for the use of a public asset shows that there are gaps of information-sharing between political agencies and the domarginalised community. Clearly some of the stakeholders in the political agency do not comply to the rules set out in the programme. According to the Athi Water Service Board that supplies financial resources to build these facilities, the projects should be controlled by the Local County Government and not private entities.

Evaluation

The general management of programmes and projects should be done strategically to ensure greater efficiencies. This could be difficult if effective interdepartmental relationships are not negotiated and maintained. Assumptions of duties that are being performed by different representatives within the program, can lead to ineffective processes in the flow of service delivery. In this context, research projects are conducted but often stakeholders are disinterested in the results of these research projects. The physical changes in the environment are not considered beyond the visible changes. When the various components of the working programme are not clearly defined, it leads to problems during evaluation of works. This is reflected in the levels of disagreement between the national and local government representatives especially when joint ventures do not materialise.

(**interview extracts highlighting the emerging narrative discussed in the memo**)

Huruma INT09_98 “That is something that I didn’t understand. What they were investigating, or what they thought of it?” _124 “From the inception of this project, we cannot tell you, truly, I cannot say there has been any benefit.”

Limuru INT11_223 “The toilet itself it satisfies, with a lot of war.”

The consequences of these agreements (an analysed example can be found in *Appendix DA04*) to the marginalised community are far-reaching. For example in cases where mobilisation has not resulted in organisations that have enough influence to effect change, the projects are seen to shut down. But where they are able to consolidate and influence the

political agency, then the project runs albeit with a few hurdles. The marginalised community communicate evaluative remarks about the impact of reliable service delivery on their setting, although they have no forum to voice these views to the political agency.

5.4.2 Assigning sub-categories to the category of interaction

Transformation

The informal community remains unplanned and with a high number of marginalised community groups, due to poverty, age, gender and education levels. The differences that emerge in informal settlements are often caused by cultural differences. Because of these differences, the projects implemented are seen to have fallen short of transforming these marginalised settings through increased service delivery. If they document the cultural differences in this space, the suitable pilots should have been the next cause of action rather than choosing different sites far away from the marginalised setting. The value added by the projects can be seen from three perspectives: a) The space appropriation where political agencies decide on removal of structures; b) The actual development of the structure that is outside the influence of the marginalised community; c) The resulting service that is offered by the government institutions.

(**interview extracts highlighting the emerging narrative discussed in the memo**)

Gikobma INT06 “You see in most of the informal settlements there’s not even a toilet.” “It’s only now that they’re organizing.” “Hmm like now we have this program called ‘Fresh Life’ for these toilets.” But even the Ministry is going to help them put up more ‘Fresh Toilets’ along the river riparian area so that we remove this waste problem.”

Huruma INT08_50 “Biogas. This biogas has never worked, I don’t know what happened in the chamber… it never produced.” _ 54 “Yes, we charge people for the toilet though there are some that are not used often, because they are not used optimally due to the bushes. There are many bushes they use.” _128 “It has no revenue, first of all, where should he stay without water [water for vending]?”

Huruma INT09_23 “So now we did not know that, so now we are waiting for that…for the Attorney General’s office. Because we did not have the one from the SDO [Social Department Office].” _110 “The supply here is Nairobi Water…you know even the way we have closed this toilet here, it’s very risky to the citizens of this community.”

Limuru INT11_126 “You know what Iko did, Iko is an NGO. They’re the ones who wrote the proposal to the council. Then they just took the money to build the toilets, and that what the council did.” _157 “They came through the council that’s what I was

asking you. How…what is the role of the council? The toilet that was there was demolished for Iko to build another one." _206 "In fact I was told by the guy who used to be there, because I took him to Dagoretti, because we rent another one in Dagoretti Market. He told me most of the material came from Athi, then I was like…I couldn't understand and I couldn't comprehend."

In some of the marginalised settings, transformation of service delivery occurs outside the resource provided by the council. As seen, the projects sometimes fail to operate and leave the community with health risks. Where the project is operational, the community is often unable to understand the role of their local council or the intended impacts of the programme.

Adaptation

By involving community groups in the delivery of services to their communities, government institutions stimulate changes that directly affect their ability to attain their policy directive for 'human right to water'. Due to poor service delivery, the responsibility reverts to the same marginalised community, to provide this same service. For instance, once the facility is constructed, political agencies no longer monitor the changes they initiated. Policies are meant to emerge from the context they serve, therefore to formulate relevant policies, political agencies have to collaborate with the communities on the ground. Implementing programmes without policy directives to guide the improvement of livelihoods in the marginalised setting is inefficient service delivery. To this end, it is imperative that stakeholders in the government institutions underscore the importance of policies in the implementation of service delivery projects for marginalised settings. This approach should ensure that the available resources are adequate and fall under the directive of government institutions, whose responsibility is to administer the use of natural resources within their counties. The NGOs also play an important role in inputting financial and physical resources to mitigate the shortage of resources in marginalised settings. Although forming alliances with NGOs is good, it is more beneficial to galvanise the community since they are directly affected. Regulating structures is essential but without a clear understanding of the social parameters within which NGOs are expected to work,could have negative impacts on the attainment key objectives such as formalising resource allocation and organisational authorities in marginalised settings.

(**interview extracts highlighting the emerging narrative discussed in the memo**)

Gikomba INT06 "As you were told before, the waste is collected in the morning and it goes to make fertilizer."

> Huruma INT08_106; 108; 110 “Now complaints from the people in the community, we discovered here…they informed us that what we were doing, it is not the way things should be done. We should have an exhauster vehicle, now in this setting…where should such a vehicle pass?”

The programme in one setting strives to provide service outside municipal trunk-lines, thus the private collection of waste. Because the community pays to use the facility, the privateers make profits from biosolids for fertilizer but the profits are not shared with the marginalised community. In the setting where privateers do not collect biosolids, the marginalised community is expected to dispose the biosolids from their bio-centre, at an added out-of-pocket expense. In this instance both the setting, due to a lack of infrastructure, and the income bracket of the community prove prohibitive.

Stakeholder relations

Active engagement does not require all stakeholders to assume leadership roles. The innovation needed should normally emerge from learning outcomes due to formalised interaction. This would promote learning in the program process that would result in more context-specific projects. These learning areas should have a direct impact on the required training for ensuring that agents in the programme are assigned roles that they can perform. When agents are unaware of the needs of the community, the benefits from the programmes may be underutilised and this may result in the misuse of resources. This is clearly seen where political agencies’ interpretations of the intended impact of the projects implemented in their areas vary considerably. Insufficient information about the program in the community impacts how the projects are managed. The programme resulted in CBOs, a new approach to managing service provision in WSS. Both the national and county government encourage this new approach by signing agreements with the CBO. A sample of this can be seen in *Appendix DA05.*

The projects implemented in rural areas are done so under different circumstances as opposed to urban settings where high densities seem to reflect poor service delivery. The financial resources for allocating facilities varies significantly although the facilities are similar in design. Frameworks and guidelines to help in the management of these programmes are needed if the programmes are expected to have a positive impact on marginalised settings. The partnerships mentioned here are concerned with funding and not so much with the implementation and evaluation of programmes and projects. However whether the funding is a loan or grant, the community should have additional knowledge transfer training programs. The maintenance of the facility resides with the community and the local government and this is indeed a new forum especially given that the local county government is newly

formed. On the contrary, the local government provide a different account from what is expected at the national level. They are not involved in the programme at all and only offer provision of resource as a service to the projects that are run by marginalised groups in their area. They complain that they are not informed about development strategies meant for their settings and that they are not included in either the concept or development of the projects on the ground. This is in direct conflict with the tripartite agreement which emphasises the inclusion of the local service provider in the implementation of programme objectives.

The political agencies are aware of alternative knowledge outputs from similar research oriented organisations in the same area they are implementing projects. Unfortunately, there was no visible collaboration between the organisations providing water and sanitation services in the setting. Additionally, visits to the marginalised setting show that the marginalised community makes an effort to plant greenery in the area, although the political agents complain about the lack of space. Therefore integrated living with the environment is not seen to be important enough to add to the programme directives. The interview respondent from the political agency mentions that the project transfer is incomplete adding that there '…has never been a handing over process, either between [them] or the council (Limuru INT11_Line 70). Additionally, there 'was a big [opening] ceremony and [the local Water Service Provider] was not aware [and] for the first time [they] entered the [facility] (Limuru INT11_Line 272). The fact that the government asset has now become a source of business for other political agents within their stakeholder group, is indeed problematic. When the political agencies share in service delivery opportunities with the community, community member should not be charged rent, as the users already pay for using the facility.

(**interview extracts highlighting the emerging narrative discussed in the memo**)

Gikomba INT06 "I requested the District Officer to reinstate those of you we were with because we started the project together with…with you." "No, now we went there and spoke to them, and told them that if they're going to bring rubbish there, they should dump it in one place." "We agree with them and they set up at a particular place, and if you look like a toilet such as that one, it is serving the local community."

Huruma INT08_20 "Yes when one has time… the process is long."

Huruma INT09_We applied and we went down there. But now, when time came, you know before they put the metre…they had to come and view the piping so that they can continue. They were not satisfied with our piping installation and so they left with the metre. From that time, we never saw them again; we don't know where they went. Now, it became humph! Working as a community is hard work."

> Limuru INT11_191 “Even these people they have closed our toilets down, they have closed the soko [market] one twice, and I had to go and ask…how can you close our public toilet. Why?”

The relations between government representative leaders and the informal community group shows that decisions are made outside the group. This is different with the informal group which communicate with the community it serves during decision making processes. This highlights the difference in approach between the political agency and the marginalised community. Where the marginalised community has been directed to form formal organisations, the outcome varies. Here, it is difficult to attain key objectives and initiate a working relationship with the political agencies. In some cases, closure of programmes has been the undesired outcome of their effort to get reliable service provision to their setting.

Transfer

Explicit methods are used to transfer knowledge from one stakeholder group to another. In some instances there is use of knowledge transfer through public meetings. The political agency controls both the formal and informal methods of communicating the information used to direct the programme and projects. The main resources that are important in the programme are monetary. For the project to be deemed important, the marginalised community must benefit from financial resources.

When the project is termed as beneficial to the marginalised community, the political agency formulates tools to help them position the programme for greater acceptance within the setting. Although this is seen to help in increasing service delivery, the benefits attributed to the project are only those itemised by the political agencies. After implementation of the projects, the respondent from the political agency mentions that the project transfer is incomplete adding that there ‘…has never been a handing over process, either between [them] or the council (Limuru INT11_Line 70). Additionally, there ‘was a big [opening] ceremony and [the local Water Service Provider] was not aware [and] for the first time [they] entered the [facility] (Limuru INT11_Line 272). Some of the positioning strategies include loyalty schemes for families living in these marginalised settings. This includes children who are not catered for in the pricing of the present facilities. In the rural area positioning is done according densities, where the facilities are placed in areas with a large number of people transiting through the space.

The marginalised community is seen as a stakeholder who needs to be influenced and not as an influential actor. For political agencies to develop in-context solutions for complex problems in marginalised settings, they need input from the local community members Although uptake by marginalised community on the ground is important, uptake at

programme level is equally vital. When some of the agents do not fulfil their roles the programme is bound to be inefficient. This results in agents passing the buck, by shifting responsibility when aspects of the program are found to be inefficient. Slow transfer levels of the programme objectives results in poor service delivery. If this leads to further marginalisation of members within the community because of their socioeconomic differences, then the projects are considered an outright failure in this sense because of the additional overhead costs. This situation is worsened further by the local government's lack of involvement in the programme process.

(**interview extracts highlighting the emerging narrative discussed in the memo**)

Gikomba INT06 "So now the way you have said it, the work is not bad. The traders are quiet just the way they were asked to move." "When we catch them, or even take them to the police I think one problem we have removed and there won't be another who'll repeat." "No we haven't started these programs, but we have initiated the toilet facilities that we shall give to them."

Huruma INT08_06-08 "We can use the water inside, but selling we cannot sell. Because we have not yet acquired…we have not yet registered." _80 "Now they were trained and told when they have completed, they were told that there is another group that will come, and they will be the ones that drive this project forward."

Huruma INT09_11 "Now when they disbanded, the forms and the paperwork they had, you know those papers…they went missing. Even the people from Umande who were helping, the copies they had…even those could not be found." _32 "The gas, it has not been emitting. I don't know why, I don't understand. The project, it was introduced by these people from Umande."

Limuru INT11_Yes, I mean we don't even understand who owns the toilet."

These facilities are located within a service delivery programme and no knowledge of this fact suggests that the implementation of projects is without long-term programme objectives. Unfortunately marginalised groups are being removed from sites without fully understanding the benefits of the programme. In another instance, the group currently running the project were excluded from the main programme implementation and it could not acquire the much needed assistance to efficiently run the project. This is further exacerbated when procedures used by the political agencies during implementation of previous projects are missing in the project documentation.

5.4.3 Assigning sub-categories to the category of learning

Capacity

The basis of building capacities begins with identifying capabilities within the marginalised setting. This is done by listening to the members and itemising what they think about the programme before the project is implemented. Different agents in the political agencies do not use the information from the marginalised community from the outset. Instead the information is given to them after the concept of the programme has been finalised. The social aspects that emerge from the implemented programme are issues that should be dealt with by the political agencies involved from the outset. By objurgating their responsibilities to the marginalised community, they leave the project outside the policies and regulatory boards of the government institutions. The marginalised communities learn about the new project and programme directives through workshops and seminars hosted by the political agencies. This is in contrast to what the stakeholders within the political agencies say, as they mention that there are problems in the issuing of contracts within the program. Therefore, this aspect of learning from the political agencies is missed by the marginalised communities who do not sign contracts with the political agencies.

The national government has invested in social initiatives by engaging personnel to visit the projects in both rural and urban areas. Unfortunately, these personnel do not engage the local county government thus limiting the success of the programme. In rural projects, a lot of support is given to the community running the project, which results in the removal of local government from the process. The interdepartmental visits would mean more if the local government were involved in setting up localised centres to drive the programme initiatives. Currently the local county government is not part of the programme, but instead the national government opts for NGOs. This is odd because the national government intends to use the local county government to regulate the projects through licences. The issuing and following-up of this approach should include the training of the local government agents to ensure that they disseminate information needed for the efficiency of the new service delivery approach.

In response to the several facilities are being implemented by the national government, there is a need to highlight addional feedback from the community. This feedback aspect can be included in the mapping of proposed facilities. The local NGOs can play the role of formalising management systems which facilitate the handing over of the completed project to the local community. Even with the documentation of this approach, documented transfer of ownership is still difficult to attain. The effective use of these organisations falls short as records of processes are not kept. According to the political agencies the capabilities of the community are conveyed through the group and no one person gets credit for their

suggestion or contribution. In the case of management, they assume marginalised groups are disadvanteaged due to the varied literacy levels. This is evident in the way NGOs take over the organisation of the marginalised community, communicating their needs to government representatives. This makes difficult when the project has to identify the capacities represented in the community.

(**interview extracts highlighting the emerging narrative discussed in the memo**)

Gikomba INT06 “Even though you have been employed, you’re still local people. You understand the problem that is there…” “So unless we do something, from the government to the community level; community to become responsible, and the government to help where they can.” “So the end of this project the people who were with us from the beginning at the meeting. The way the plan was, we found them doing this [the compost toilets].” “Hmm that is something that takes waste and makes it into something useful. The project is very new, we haven’t really progressed far.”

Huruma INT08_90 “So the things that were done then, at the beginning I cannot understand.”

Huruma INT09_34 “It was said that there’s a stage where human waste will reach so that it emits gas. Now I don’t know if that’s the level it didn’t reach.” _42 “We ourselves, we decided maybe it’s the water that is limiting the gas emission. So we drained the water but still nothing.”

Limuru INT11_20 “That concept is very unclear to many people, in fact we’re at war with Athi Water.” _47 “Okay now what I don’t understand…the relationship between Athi and Iko.” _167 “Yes, for the market one whoever was there couldn’t train them. That’s why they gave it to us.” _258 “Yes even here we have never gone for any training.” _279 “So now if you’re given the facility after it has become operational who are you to ask questions?”

According to the leader working with the informal group, community members need to be a part of the solution in their setting. The know-how they innately have is vital for effective implementation of programme objectives. However, once the political agency directs the registration of the formal community organisations, this inclusive approach fails to be implemented. Community members are often ignorant of previous activities which tend to affect efficient management of the project. By not including the marginalised groups, the political agencies lose out on an opportunity to build capacities and enhance resilience in the setting. This leads to low innovation levels, and lack of interest in contributing to drive positive change in the programme.

Follow-up

When the political agency selects the project it disseminates this information to the community which will ultimately run the project in the marginalised setting. Although not all stakeholders in the political agency are aware of the instructions of the project within the programme, they are nonetheless part of the implementation team.. Some of the stakeholders within the political agency prefer to start with the community, as opposed to the NGOs on the ground. The ability to build capacities within the community to ensure that the projects are efficiently run is still a problem for the political agency. The NGO's role is now transferred to acquiring funds from international finance institutions. But this was problematic because the costs of acquiring fundin rose considerably resulting in the national government taking over the management of the programme. Unfortunately this has left capacity vacuum within the marginalised community, and it seems to be struggling to ensure sustainability of the service delivery programme. This is worsened by the fact that the local government is not included in the implementation of the programme. Because of the capacity vacuum the community had difficulties ensuring the efficient running of the project resulting in the need for financial assistance from the national government.

(**interview extracts highlighting the emerging narrative discussed in the memo**)

Gikomba INT06 "The traders we'll even see when they are being stolen and do nothing."

Huruma INT08_86 "Yes, we were handover when they completed doing…although we are still together, we are in the committee together." _94 "They have come in the past, the people who were helping us from Umande. They have visited in the past."

Huruma INT09_10 "Now, it came to pass working in the community is very hard work. The people who were part of the each committee of the project had a falling-out, each went their own way, here and there." _13 "All the ones for the application you know…they could not be found, no one knew who went with them. We could not figure out how they got lost."

Limuru INT11 "I have written a letter to the Athi…" _208 "Yes, that's what that man told me. Then I've been asking many questions, if it was built by Athi, why do we have the Iko? Why? I have never had the chance to ask." _281 "Yes there are a lot of problems, there's also a lot of information missing…eh…there's a lot information missing I don't know why. But you should check with the system, you know I must go to the system now…because we cannot survive if we are not in the system, because now we're out of the system."

The ability of the political agency to effect lasting change that can improve livelihoods in the marginalised settings is influenced by their relationship with the local community members. If the members are to attribute improvement to their setting to the implemented facilities, then this would be seen from their feedback on how well the projects work. Currently, this is not the case because CBOs, which provide access under political agencies have been unable to meet the needs in marginalised settings. Insufficient information transfer frustrates the community members willing to take part in the new forum for service delivery. For true and lasting change to happen, engagement where each stakeholder group learns from the other should in fact be the platform for inclusive service delivery systems.

5.5 Chapter summary

In this chapter, the data is used to illuminate the patterns and to generate a generic process for relationships between political agencies and marginalised communities. This process is highlighted in the case studies and reiterates the sequence of defining space; ensuring efficient regulatory programs; and validating communities through self-identity. This process runs concurrently with the emergent categories of agency, interaction and learning and should not be viewed as separate, but as complementary activities. This is aligns with the gap discussed in the literature survey that analysed the pathway aspects from chapter four, in this chapter the study probed the application of the pathway observed in social initiatives. This highlighted the bargaining power of projects run by formal community groups like CBOs that resulted in better run facilities. The conceptualisation, and design of these facilities was observed to be controlled by the government institution that employed the help of local social enterprises to design a context specific facilitiy without input from the CBOs.

In the next chapter a model illustrating the binary process observed between the marginalised communities and government institutions is developed to illustrate how space production is seen to intersect with the social structures that create place. The relationship between the political agency and the marginalised community is summarised through *axial coding,* using a relationship matrix that highlights the distinction between the two stakeholder groups. The political agency creates the boundaries of engagement in the programme by defining, regulating and validating space and the community interacts within these set boundaries through asserting agency, interaction and learning.

CHAPTER SIX
IMPLICATIONS OF THE KNOWLEDGE OUTCOMES

6.1 Introduction

In this chapter, the importance of agency and engagement between stakeholder groups are highlighted. This is crucial for meaningful appropriation of space in marginalised settings. The first section of the chapter focuses on the role of agency when defining spatial production of spaces in marginalised settings and how social practices are influenced by learning programmes. These relationships, illustrated in Figure 6.1, are the platform for social engagement arising from the new participatory approaches in water and sanitation services for marginalised settings (Tooke, 2003). The structures that were defined in the design framework for social innovation are now attributed to the implicit processes that emerged in the knowledge outcomes of the previous chapter. This production of space subscribes to Lefebvre's (1991) model and uses its triad of social practices, representation of spaces, and spaces of representation to evaluate the design process. In order to understand the context in which meaning is assigned to the process of space production by the marginalised groups, Grounded Theory helps to draw out emergent concepts. Through this approach, the knowledge outcomes are linked to empirical data to substantiate the process which helps to build the emerging framework.

In the first section, the implicit processes are assigned their stakeholder groups in line with the previous chapter. Comparisons are made between the political agency and the marginalised community to further understand the role of built environment in the process of WSS provision. In the second section, the relevance of the structures in the WSS programme are used to substantiate the implications drawn from the relationship matrix infigure 6.1.

6.2 Comparing the categories between the political agencies and the marginalised community.

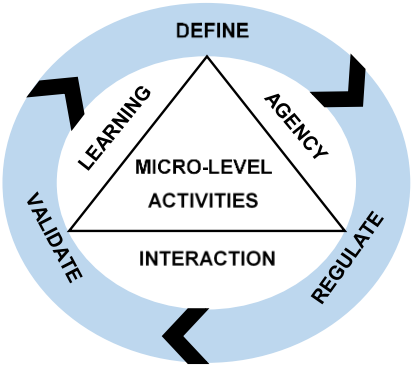

Figure 6.1: Relationship matrix between space appropriation and place creation.

In Figure 6.1 a diagrammatic illustration of the previous analysis section is shown. Here, we observe the outer ring, which the internal activities are bound, operating at a level of *space production*. As stated in the introduction the architectural forms give shape to the place by means of the project (Llopart, 2000). To understand how architecture assists to define, regulate, and validate the space, in a bid to offer marginalised groups in community an opportunity to assert their *right to the city,* the points along the process outlined in the focused coding are used to contain the active coding. This gives rise to the categories: *learning, agency* and *interaction* which operate at a level of *place creation.* The model is used to look at how the appropriation of space is constructed in this instance as a process in which society turns spaces into places.

The codes are aligned to the emerging categories to describe, and therefore define forms in space, which are important when ascertaining the role of stewardship in society. In line with Grounded Theory, memos are used in the previous sections to interrogate the experiences of the respondents. These memos remain in the two distinct groups of the political agency and the marginalised community. The intention is to separate the expectations of the macro-level explanations done through the programme, from the micro-level activities performed within the project. The relationship between overlapping areas as depicted in Figure 6.1 are to be highlighted in reference to the influence that the marginalised community has on the process. These interactions seem to happen along the processes followed when running the programme and implementing the project, as shown in Figure 6.2.

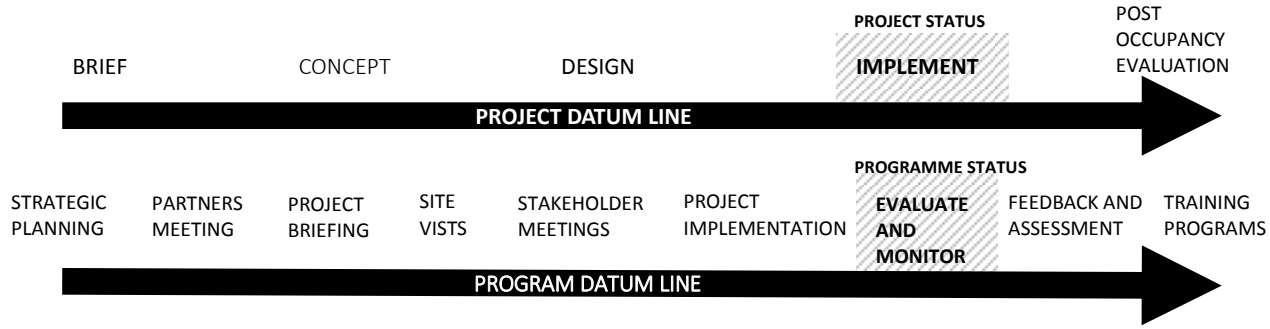

Figure 6.2: Design process set against the WSS program

The first datum line itemises the process of design, while the second one outlines the steps taken in the programme of implementing WSS projects in marginalised settings. The shaded stage indicates the step used by the national government to terminate their involvement and handover to the county government in both project and programme.

6.2.1 Defining spatial production while asserting agency

As seen in the focused memos, in section 5.3 of chapter five, the category of *agency* is emerges from initial memos that deal with respondents from the political agency. This is because power and control in the programme and project are held by them and therefore the marginalised communities are observed to react, as opposed to being proactive in their responses. In this section the reactive responses are discussed in response to the emerging category of agency. The function of the architectural form in the relationship between the political agency and the marginalised community is discussed in relation to its ability to define and regulate space production.

The role of political agency in the production of space in marginalised settings.

The projects are marked and mapped as assets of the local government through appropriation carried out with locally assigned NGOs. These political agencies are knowledgeable about the kind of space that can be used in the community (UDDT INT05-02). As stated by the political agency, “[when the project] belongs to the organisations, that is ideally not supposed to happen” (UDDT INT01-02). Other members in the political agency group believe that “the plan now is after construction, the project is now to revert back to the local government” (Limuru INT02-04), “to ensure that these projects are not turned into a commercial entity, denying people the services that were intended for them” (Limuru INT03-04). The external agencies acted as “gatekeepers, causing problems to arise, and the ablution block to become like a business to them” (Limuru INT04-04). Using design intervention that were intended as social initiatives, these approaches result in urban spaces where control causes one group to be dominated by another (Keatman, 2013). The political agencies still believe that “sanitation is good business, but it should also be social. [That] it should have a good social element, [where] even the communities know they have a role [to play]” (Limuru INT04-04). If this is true then the question remains: what approach does the government implement to integrate the marginalised community into the wider society through provision of WSS services? While this is important, we should remember that the marginalised groups have a role to play beyond using the projects provided by the political agencies. As the programme is developed and implemented, the political agency is responsible for assigning roles to community members as a way of including them in the new processes of service provision in their setting.

The programme for equitable water and sanitation services divides the roles given to community as a partial role in the running, but not ownership of the projects. The programme for equitable WSS has informal instructions that leave “the community in-charge at the end of the day when the Water Service Board (WSB) rolls out” (UDDT INT01-02). The community left in-charge “starts as a small CBO that were registered as SHGs, but later

upscale and register as societies" (Limuru INT02-04). The community run the projects but in the end the "CBOs now pay money to those people from Eco-Tact, and that is a problem" (Limuru INT02-04). This is so because "private companies who are limited in service provision are oriented towards services that will generate profit" (Aubrey, 2009). In the community, members who are unable to pay for the facilities are not catered for. But if the Kenya Water Act of 2002, and the government's promise to provide water as a 'basic human right' is to be used as a yard stick, then clearly these marginalised communities have no access to this right. It is arguable that people's actions control the change in societal structures and patterns, and these new structures are the result of the actions of both, the political agency, and the marginalised community. Their "right to be" (Goonewardena, et al., 2006) highlights this new social practice as a norm in the present spatial appropriation, even though the boundaries of rules and regulations affect "their right to dwell"(Goonewardena, et al., 2006). "The relationship between space and poverty, and access to economic and social opportunities through well integrated spaces, has been associated with a higher incidence of wealth at the smallest levels analysis" (Carpenter, 2013:14). This is evident in the way the CBOs organise social and economic activities that facilitate interaction between members in the marginalised community and the wider society. If projects are implemented to provide WSS, the equitability of access is still not addressed. These programmes fail to comply with the provision at a 'human rights' level, leaving the poorest of the poor with services they cannot access. This apparent lack of transparency has highlighted the need for compliance to equitable access of WSS in marginalised communities.

Because informal sector activities are often regulated, and sometimes actively discouraged by local government (Bangasser, 2000), the space is not well-kept. Accordingly, "the slums are seen as [somehow] sometimes messy" (UDDT INT05-02). The setting that emerges from the perceived *messiness* of marginalised areas affects the regulations put in place to allocate water and sanitation services. "To be able to mobilize the community to get them to participate in those kinds of projects" (Limuru INT03-04), this would improve WSS, "consultancy [is seen as an important] component of the social aspect" (Limuru INT04-04). Lefebvre's radical right to difference can be applied as a conceptual and political tool to mobilise against economic dominance and urban oppression. "Space then not only reflects the cultural identity of an area, but also shapes identities and dispositions" (Pugalis and Giddings, 2011:283). This is seen in the handover to the CBOs through a tripartite agreement which is considered by the local Water Service Provider as an appropriate model to improving water and sanitation provision (Limuru INT04-04). By being "encouraged to look at it at a business angle" (UDDT INT01-02), economic dominance is reiterated through external agencies. With the new County Government System, steps are being taken to

integrate the marginalised communities, especially those in informal settlements back into the wider society. So that according to Limuru INT04-04_132 “as we devolve the services, [there] should have a very strong department in the County Government on the informal settlement” (Limuru INT04-04). This means the provision of equitable access to WSS should be seen as the government’s responsibility to all its citizens especially those living in marginalised settings. “You know, access to water and sanitation should be what every leader is trying to achieve. You know the MCAs [Members of the County Assembly]” (Limuru INT04-04_184). This means that the differences observed between communities that result from limited access to WSS can be reduced by asserting agency to marginalised groups within the community. The narratives in the community run through the behaviour patterns of the community dwelling within it and help shape relationships with the wider environment.

Even though there are many NGOs conducting research on Kibera, the results of the research do not filter out (Limuru INT03-04). This gap in information sharing is a role that the local government can take in order to ensure that the marginalised groups are consulted when changes occur in their setting. This data can be stored in local government repositories so that they are available to all stakeholders to ensure that information reaches all stakeholders. If the local council, at the municipality level, is not involved in a programme that is supposed to be a joint venture between the council, ASWB and the [Eco-Tact] privateer, then even at political level, agency is uncertain (Limuru INT10-04_106). This makes it difficult to “manage the downstream of the water and sanitation program” which was a point raised by Limuru INT04-04_86. Because the community is not always a cohesive homogenous unit (Keatman, 2013), the views of people tend to differ when they interact. Therefore by promoting active participation of all stakeholders consensus can be reached on the types projects that can improve livelihoods of community members. All communities have a role to play in the improvement of society and by implementing inclusive programmes positive impacts can be achieved through improved engagement. The design of projects implemented in marginalised settings open up space for integrating community new participatory approaches (Tooke, 2003) through processes of conceptualisation and design development that are user centred.

Every design engages the living system that it’s part of, whether the engagement is planned or unplanned. By expanding the concepts of design to include engagement, the potential not only to sustain, but to regenerate can provide ways to develop interventions that contribute to the health and wealth of the whole environment (Reed, 2007). This model is the point of interest especially from the perspective of the marginalised groups. After the input from the political agency in the form of the WSS programme. In the following section the means of

interaction are discussed by exploring the responses from community groups running government initiated projects.

Mechanisms adopted by the marginalised community in dealing with produced spaces

The projects implemented by the political agencies represent new spaces in marginalised settings. These spaces are allocated by political agencies in the recognition of poor service provision. The marginalised communities as mentioned in the previous section, are not part of the process of space allocation. In the group run projects, where community members manage facilities used by the entire community, the projects were built by political agencies. "The project was introduced by these people from Umande" (Huruma INT08-03) at the urban setting of project three. The local community had contact with the social enterprise who slowly distanced themselves from the marginalised community. Huruma INT09-03 mentions that "they had come in the past" to assist in the running of the project. In contrast the rural area had a facility on site and when the social enterprise came the Limuru SHG was already there. "The toilet that was there was demolished for Iko to build one, then they had people there for almost three months to run the toilet" (Limuru INT11-04). The local communities clearly have no say in the appropriation of space when implementing the projects, and respond only to parameters set up by the political agencies.

As problems arise within the projects and the allocated setting, the community members struggle to find viable solutions to their challenges. For example in the urban setting:

> "The [gas] chamber started to fill with water [and they] started to drain it, but that brought with it problems of its own. Because now [they] were channelling it…towards the forest. The [local forest workers] informed [them] that what [they] were doing is not the way things should be done, that [they] should have an exhauster vehicle. Now in this setting where would such a vehicle pass?" (Huruma INT09-03).

In the rural setting the challenges were centred on the socioeconomic benefits of the projects.

> "Because ours is rented by the Iko-Toilet. All the money we get we pay bills, then we're left with nothing. In fact we underpay our people. Even these people, they have closed our toilets, they have closed the *soko (market)* one twice" (Limuru INT11-04).

The marginalised groups in both settings adapt to inadequate service provision by making allowances for the gaps in service delivery. By either looking for solutions by themselves or

accepting the poor and inadequate services, these community members surrender their *right to the city.* Although these mechanisms allow the facilities in the rural setting to function it is to the disadvantage of the marginalised groups. In the urban setting, when the system completely breaks down, the political agencies abandon the project and leave the marginalised setting without adequate facilities.

The project, and the architectural form define space by controlling the setting's allocation of water and sanitation services. This in turns regulates the interaction the marginalised groups have with the political agency. This type of interaction is seen in the urban setting where the political agency visits the site, but there's no mention of any contact with the community.. This suggests that, contact is initiated by the political agency not by the marginalised groups. This social structure highlights a form of dominance that exacerbates the marginalisation of the community. In the rural setting, the community's role is purely economic. The political agency is seen as landowner not as an institution to be approached when challenges arise. In the next section the importance of social practices of the marginalised communities is discussed. This is necessary because it shows the quality of interaction between the political agencies and the marginalised communities. As observed the CPA fails to acknowledge the importance of the marginalised communities' experiences in improving WSS services. By involving the community in service provision, the political agencies recognise the necessity for interaction between the two stakeholder groups in order to ensure efficient and reliable service.

6.2.2 Social practices in design processes that further community initiatives

If the quality of interaction improves, the political agency becomes less dominant while the marginalised community gains dominance in the running of the project. This is done as social practices are important in understanding the relationship at the project level. Thus enacted regulations that are followed by the community help members to validate their participation in the programme. The architectural forms are used by the political agency to control the access and dissemination of water and sanitation services, while the marginalised community interacts with the new methods of service provision.

To acquire knowledge through networking and partnerships to help build resilient communities, these communities should exploit their social relations to attain agency in their setting. Social practices endorse transformation to help actors adapt design processes to changing contexts. The transfer that emerges becomes a crucial tool for building social relations.

The power of new partnerships in WSS programmes implemented by political agencies

Architecture gives shape to places by means of the project, and thus *space becomes architecture*. The space designed by the architect at Ecotact influences the user and conditions his practice and in order to adapt to this space, the user tries to overcome imposed conditions, transforming them formally and conductively by adjusting their activities to suit the implemented design (Llopart, 2000). The creative element that gives shape through the implementation of WSS projects transforms the informal setting that the community lives in. The political agencies working in these settlements propose improved settings, even though their approaches differ. This difference is seen when government institutions observed that “most people were doing interviews and documenting miseries of the people. But not actually giving them the infrastructure” (Limuru INT04-04_28). The architect in this case is the political agent who has influence over the inhabitants of the setting. They are seen to have control over spatial demarcation where “sometimes even some of the people have to move some of their structures to pave way for some of these projects” (UDDT INT05-02). This influence directs the regulations and finances that give life to the projects. The WSB engages a contractor to deliver all the materials needed for the construction of the project. Once this is done, the day-to-day management of the site is left to the consultants who then give the running to the CBOs (Limuru INT02-04). In some cases the community may get funding from WSTF, whose mandate is to mobilise resources for poor areas (Limuru INT03-04).

The political agency normally keeps datasets strictly during the main building phasee by outlining the mobilisation, financing, and construction of the project (Limuru INT02-04). The community in turn is supposed to ensure that all the other things are taken care of, in terms of livelihood (UDDT INT01-02). Thus the space coded by society is one that emerges from the agency which formulates guidelines, rules and regulations. To users who navigate and spatially orient themselves, this co-determines activity, or indeed influences rebellion against conformity (Goonewardena et al., 2006). This coding is done by the political agencies where the demarcation of space and subsequent provision of built facilities show the extent of their involvement. The social structures that result from these new facilities are left to the community and it has to find ways to implement them in their setting. To ensure equitable access to water and sanitation services, the political agency looks at the current status of the service provision to assess the community’s ability to access to water and sanitation services.

With this support, government institutions have been able to develop water sources (Limuru INT03-04). Alternatively, the NGOs get money from donors and use the funds to intervene in

the settlements. Even though government representatives have been placed, an instrument that registers the process is needed (Limuru INT04-04). The regulated process of space production is highlighted especially, where not only the physical aspect of the architectural form is important but also the social structures that put it in place. These emerging social structures introduce the element of engagement between the political agencies and the marginalised communities. During active engagement, the community's place shifts and it now acts as a means to transfer information resources and energy for improved water governance (Cole, 2012). By aligning design features with community opinions on how they interact with the water and sanitation systems, sustainable design features can be used to adapt for continuity of systems within set boundaries of acceptable limits (Zari & Jenkin, 2009).

The boundaries of the WSS programme set the limits of what the political agencies intend to do in the marginalised setting. These limits are coded by formalised patterns seen in the guidelines used to draw up the implementation of the projects.

> "After we do the report, we invite everyone that was there through the meetings that we did, together with the partners who were involved… We train them and manage, then we phase out… Ideally they're supposed to work like that" (UDDT INT01-02).

> "The WSTF may provide some finances for further training to enhance sustainability. The NGOs in the area mobilise the community for us, where we tell them about the intended project. The Runda one, we were not the initiators, we were just one of the stakeholders, so that one I assure you, we don't know how it works" (UDDT INT05-02).

The experiences of respondents from government institutions show guidelines meant to regulate the process do not work effectively. Therefore the opportunity to use the built facility as a means for the community to validate their social practices is lost. The social networks with the most potential for resilience are rooted in the built environment, with nature, strength, and quantity of social ties (Carpenter, 2013). This lack of accountability is seen even in the construction where in some cases "there are outstanding finishing and fittings, where the [contractor] went away, so now it's pending" (Limuru INT02-04). Similarly, the local government "don't know anything about those [ablution blocks] built in the town" (Limuru INT10-04_198). "The local WSP which is a part of the contract to be signed for the running of the project are not aware of what is going on" (Limuru INT10-04). "Perhaps the problem is the political agencies are doing too much and in the process the relationship during the post-construction is lost, leaving the responsibility of who maintains those relationships as

something that needs to be fine-tuned. But the need to partner, and concentrate on getting the ablution blocks in Limuru, into the informal settlements where we concentrate more on management and sustainability is important" (Limuru INT04-04). "But that can prove difficult if the local government are "out there, but are not aware" of these guidelines set out in the provision of water and sanitation to marginalised settings in their area" (Limuru INT10-04_90).

Using Community Participatory Approaches to encourage good governance

New social practices of negative service provision causes new interactions for the local community, and leads to the emergence of new socioeconomic group. Participation through engagement requires learning from both stakeholder groups if adequate provision of basic services is to be met in marginalised settings.

> "Now **there were trained** and told when they have completed they were told that there is another group that will come… Yes **we were handed-over** when they completed doing, although we are still together, we are all in the committee together" (Huruma INT09-03).
>
> "Even here **we have never gone for any training**, and **they recommend our [project]** to others because it is the best run... It is also good because it changes the community's attitude towards disabled people in Limuru" (Limuru INT11-04).

The marginalised groups operating the facilities through community organisations as seen from the respondents' interview extract indicates that both groups received training. In the urban setting due to the removal of the committee that received training during the running of the facility, it stopped functioning and had to shut down. In contrast a similar community organisation in the rural setting has managed to effectively run the facility without any training. The similarities in the governance of the facilities is seen in the use of CBOs. Using this approach to integrate community members in the service provision, political agencies engage and thereby transfer information. But by not synthesising and applying the information, the process of active participation is lost.

In the next section learning programmes that can assist in the synthesis and application process are discussed as part of the operating principles of CPAs.

6.2.3 Influence of learning programs on asserting custodianship of place

The community is the dominant participant in the process of access to water and sanitation as they operate and direct the facilities on the ground. Once the new means of supplying services is done through a community participatory approach, increased capabilities are needed to ensure the programme is efficient. This means ensuring that training is given at

regular intervals to implement principles of safeguarding water in marginalised settings. The learning opportunities help the community to use the space to validate themselves and ultimately create place. Through this creation of place the marginalised communities can define their setting and acquire a sense of agency when participating in the production of space. This cyclic process can help to build resilience in the community because of its reliance on the input from members in the community on how to build meaningful places.

The transfer of management of WSS from political agencies to marginalised groups

The role of communities in the programme for WSS projects in marginalised is influenced by the community members. As stated by UDDT INT01-02 “the government institutions approach the field with an open mind and request the opinion of the members where the project will be implemented”. This outlines the contribution that is used in the programming of the project for the design implementation to follow. The details of spatial appropriation and concept are done prior to the meeting with the community which limits the influence that their verbal contribution may have on the overall programme. As part of site identification, the government institution identifies the site where people are supposed to manage the ablution block and thereafter the handover is done to that group. Moreover the government sees opportunities of forming partnerships with local NGOs who can take over the soft issues of capacity building and training (Limuru INT04-04). This is because the local government only has a customer-like relationship with the operators of the projects (Limuru INT10-04). In contrast other representatives in the same institution say that there are “workshops and seminars to raise issues” (UDDT INT05-02) where one would assume training and capacity building are taken into account. In some cases the point is stressed that “whichever way you want to look at it. We train them on how to maintain the projects, and how to maintain the systems and everything. We train them on how to run it, we train them on how to get revenue from it” (UDDT INT01-02). Some of the respondents represent the initiative that government has taken to include social aspects in the implementation of WSS systems in marginalised settings. This [government] sector is geared more toward the rural projects where the community can be directly involved as opposed to the urban setting where implementation of community programmes have to involve the local WSP (Limuru INT03).

In the case studies discussed some of the projects were “started with NGOs, where the [government institution] provides materials and they would mobilise labour through the community and other partners” (Limuru INT04-04). But after the implementation of the project there is still a gap in the service provided to the marginalised communities. “What support can the county government give [to] them? Continuous training, for example, is very important” (Limuru INT04-04). Some of the political agencies exclude people who live in informal settlements because of their circumstances and assume they’re inadequate. For

example, they say that “because [I am] really concentrating on informal sites, [but] if [I had] an opportunity to go out of town, [they’re] managed by intelligent people” (UDDT INT01-02). Whereas community representatives have problems with the new partners for example “specific issues like the contract where there are disputes” (Limuru INT03). The political agencies believe that “they know their needs, they already know what those people, [community members in informal settlements], need” (UDDT INT05-02). In some instances the need is profound. Limuru INT10-04 commented:

> “Yes so what I know is that from my point of view this is a disabled group and the toilet was put up there because there was a need. There are no toilets, the one which was there was in very bad shape, and they were the ones who were there, there was a toilet there that they were managing”.

Political agencies need to transfer information and knowledge to the marginalised groups in communities if WSS projects are to be efficiently managed. The reliability of water and sanitation services in marginalised settings is about more than just accessing a tap and adequate sanitation. These services are connected to other social aspects of the living conditions that help improve the livelihoods of community members. The technical issues that are related to ensuring that the community members view water and sanitation as a means to improve their setting need to be shared through suitable engagement activities.

Coping with technicalities of service provision.

The technical mechanisms that run WSS services are seen in the programme and project implementation. From the extract of respondent’s interview in the rural setting the marginalised community is excluded from the programme (*system).* The need to access information that would help mitigate challenges is important to the CBOs and SHGs that run the WSS projects.

> “Yes, there are a lot problems, there is also a lot of information missing (*laughs)* eh, there’s a lot of information missing I don’t know why. But you know we should check with the system, you know I must go to the system now. I have information now, I have been waiting for that information for me to go to the system. Because we cannot survive if we are not in the system, because now we’re out of the system” (Limuru INT11-04).

This need to be included in the process is in contrast to the view of the political agencies who stated that the needs of the community are known. The unique properties of the marginalised communities is not optimally used to ensure appropriated spaces are meaningful especially to community members. In contrast the facility in the urban setting has

run into challenges that are bound to difficulties with the political agencies that provide resources to the facility. This disruption in the process led to the closure of the project.

> "The people from the City Council came and found the piped water is running without a metre, so they cut the connection. We told them they should not cut it because they are not the ones who installed it anyway" (Huruma INT08-03).
>
> "Because now, you have heard this is the toilet here. We cannot have someone here to manage the toilet, because there's nothing, nothing at all that can be used to pay them" (Huruma INT09-03).

In this section we observe the missing link in the political agency's communication and partnership with the marginalised communities. This distinction led to the challenges in the running of the projects and in some cases complete closure. The sense of safeguarding of resources which comes from custodianship is lost as the communities are left out of the processes that govern the programme. In the next section we highlight the importance of engagement in effectively implementing both programmes and projects that produce spaces for water and sanitation access. Through this engagement, created places that hold meaning for the communities in the setting could mean improved livelihoods.

6.3 Social engagement arising from new approaches to WSS services for marginalised groups.

According to Ching and Binggeli (2005), an *analysis of user requirement + the existing space,* results in an *integrated design.* User requirements depend on: who the person is; what activity they intend to do in the space provided; and what they need to do the activity. To clearly identify user requirements, one needs to:

- Identify users
- Identify needs
- Establish territorial requirements
- Determine preferences
- Research environmental concerns.

In the WSS projects implemented in the marginalised setting, an impact assessment report was conducted by a private consulting agency for the government. Though the consultants visited the sites, they did not directly involve the community members there. By itemising the instructions set out by the political agency on the project life cycle and by disseminating this information, the community's role is set out. The running of the facility is solely done by actors outside the political agency, although management of some projects is still under the control of the political agents. This affects any development plans for the facility, whether these plans are structural or social.

The change in service provision, ensures that a new dual relationship is produced. Through this interdependent relationship, the marginalised community is forced to adapt in order to ensure improved processes in service provision. In response, the political agency enacts new policies to intervene so as to ensure the locality receives the desired improvements. The old resource points are redefined with adjusted designs to the built structure which is informed by the political agency. Thus, the instructions for the transformation occurring in the setting is defined by external actors who control resources in the setting. Subsequently, the values attached to the built facility are not derived from the community, but from external agencies. This produces a space that is not defined by the social relations found in the setting. The establishment of territorial requirements is thus seen in the division of spaces to ensure privacy, improve interaction and access in the setting. The lack of input by the community in the appropriation of the spaces where projects are implemented diminishes this requirement. Therefore user requirements and subsequent space appropriation is done outside of the partnerships formed in the WSS programme.

The division between project ownership and programme ownership should not be mistaken. The project is under the CBO, while the programme is under government institutions (*Appendix 05_13: Line 47-50*). This new approach of citizenship transfers public service delivery from political agencies to marginalised communities, where engagement occurs during and after implementation through evaluation programmes. These programmes should be written and assessed to ensure that they are up to date with the current context. This means keeping up with the current evolving county government policies to assist community member in raising their livelihoods. “The evaluation was done through field visits, interviews with the consultant and contractor, as well as, analysis of relevant project documents” (*Appendix 05*). As stated by both the respondents from the political agencies and marginalised communities, project documents were not forthcoming. “Well…I think there was a financing arrangement between Athi and the contractor. I think it was built then. There was supposed to be a tripartite agreement between Athi, council and then the Iko-Toilet or us” (Limuru INT10-04). This is in direct contradiction to the evaluation report that uses “relevant project documents” (*Appendix 06*). From the outset, information from the political agencies was contradictory making it difficult for the designated community organisations to effectively execute their duties.

Patterns of how stakeholders review and assess the value of water and sanitation projects is vital to ensure a well-rounded evaluation programme. This means including all formal sectors i.e. water and sanitation representatives from the ministry and its affiliated institutions and local government representatives involved in land reclamation and development. It should also include NGOs that constitute agencies that increase access to water and

sanitation within informal settlements, and the community members who the aforementioned stakeholder relies on to implement the water and sanitation programmes. Evaluation cannot be counted as a true representation of the context if the members whom these programmes target are neglected. Therefore, evaluation of the programmes should be made readily available to all of the relevant stakeholders. The properties of the evaluation refer to the characteristics that describe what it is, where it is situated, who itemises the features seen and those behind the scenes. According to the documentation, properties included are: "efficacy… efficiency… sustainability, and… relevancy*"* (*Appendix 05*)*.* These properties focus more on the financial, equipment, and management aspects of the water and sanitation projects than on the context. The description of these properties are highlighted in the context of Athi Water Services Board (AWSB). This separates the areas of influence from other stakeholders in the programme, especially in terms of indicators of sustainability such as social, economic and environmental biodiversity. The communities in this context could benefit from more inclusive property margins since some of the communities are situated in close proximity to a large water body i.e. Nairobi River as is the case of Gikomba Market, and Karura forest as is the case of Huruma.

According to *Appendix 05*, the construction works of the ablution blocks as well as the projects under consultants are still incomplete. By framing the evaluation report as a "*terminal evaluation"* suggests that it is the last evaluation report, even though the programme has not completed the projects indicated in the summary. Therefore the timing of the evaluation should be extended to include when the programme is complete and after the running of projects has extended beyond 2-5 years. This can be used to align future water and sanitation programmes. A programme is considered to be efficient from its "adherence to the work plan, adherence to procurement schedule, and adherence to set budget levels" (*Appendix 05*). All of these are set against the frame of the financial resources. The schedules mentioned can be seen as the input resource, both financial and human the ratio of the output to the input as well as the extent to which time is well used for an intended task.

Even though use of the public services is reliable in some of the CBOs and SHG facilities, service delivery is more than just using facilities. By accessing reliable and safe water, marginalised communities can mobilise to ensure improved services deliver results in improved livelihoods. Therefore the creation of Community Participatory Approach in service delivery has greater potential especially since civil society in the form of social enterprises is involved in the programme. Marginalised communities in this process of urban planning through the appropriation of spaces for the delivery of basic services can be re-integrated into the wider society. Architecture can, as seen in the relationship matrix of Figure 6.1, be used to **regulate, define, and validate** space production through the assertion of **agency**

through **interaction** and **learning** programmes. This could create places where communities can safeguard natural resources by applying their social practices.

In the last section of this discussion, reflection on the design framework for social innovation and its relevance in the cycle of the relationship matrix is discussed. As observed the distinction between the political agencies and the marginalised communities is delineated in the programme and project. These two processes run as binary series separating the stakeholder groups and disengaging the partnerships that are formed to improve service delivery. The networks which are discussed in the following section are analysed using the design framework for social innovation. The building of networks in an approach that involves two distinct stakeholder groups is vital if communication is to be used for reliable and efficient service delivery. This would improve both accountability and structures that delineate ownership and the resulting custodianship of service delivery points in communities.

The emergent hypothesis is seen as**:** *"meaningful spaces that develop concepts from a setting's social practices lead to safeguarding of places in marginalised contexts."*

Space production in informal settlements

Although informal settings are not designed according to an architectural planning framework, the spaces still carry meaning for the community living there. Spatial separations are done where one can observe a clear demarcation of activities in a home setting as seen in Figure 6.3. The washing and lavatory are separated showing that social practices discourage the performing of these activities in an adjacent manner. In the first image the washing lines are situated at the front of the house, while the toilet facility is situated at the rear end of the house. This is not seen where political agencies drive initiatives created to improve the setting, as they fail to provide reliable services by neglecting the social practices of the marginalised communities. Therefore in the conceptualising of the new WSS projects the political agencies should bear in mind the social practices of the community if the developments constructed are to be used efficiently.

Figure 6.3: Space appropriation in Huruma Settlement

As Lefebvre (1973:20) mentions in his narration of *An Architecture of Enjoyment*, “The poor appear rich because it (poverty) possesses and retains meaning. Destitute spaces maintain obsession with poverty and direct us to other spaces where the poverty of objects does not exclude the richness of space”. This obsession can be linked to social practices tied to the way community members relate with their natural environment through natural capital. The rearing of livestock and fish for subsistence and growing of crops are all ways in which the community use, reuse and dispose of water. Initiating biogas centres can then be a means of promoting their lifestyle by supporting already existing spatial demarcation that supports social practices and therefore the representation of space.

Creation of place to promote difference in social practices

To assert a place in marginalised settings, an extract from the political agency respondent claims that:

> *“Because we did informal settlement policies, and actually we realized there were so many people unserved. In spite of the fact that so much money had been sunk in Kibera, billions and billions have been sunk through the NGOs. Yet if you went to the actual structure they were at, most people were doing interviews and documenting miseries of the people. But actually not giving them the infrastructure” (Limuru INT04-04).*

This reflects Lefebvre's (1973:21) account that, "culture and impoverishing cultural consumption reflect [one] another, a more nourishing form of consumption; an obsessed poverty [that] spreads to the poorest locations of its enjoyment [bringing about] tourism [that] reinforces consumption of symbols and works, *Arte Povera* continues to experience a well-merited success".

The new context that arises from the appropriated space sets the stage for the interaction between the different social groups in the setting. The community and political agency form nodes in the network where the marginalised groups try to fit themselves in society. The role of marginalised groups in creating a place where their social practices can be celebrated is vital, if they are to affirm their *right to the city.* These spaces of representation that signify the social practices of the marginalised serve to create a place rich with meaning to the community. Therefore by utilising the opportunity of delivering water and sanitation services, both political agencies and marginalised communities create a platform for spatial planning.

6.4 Chapter summary

In this chapter we discussed through a relationship matrix, the interdependency of architectural concepts to the social structures existing in society. The study examined this interaction by separating the social group that controls programmes of space appropriation, and the marginalised community that the programmes target. Lefebvre's *right to the city* is used as a lens to observe the relationship of agency and transfer of rights to marginalised communities to create programmes that can assist in ensuring equitable access to water and sanitation services. In the next chapter, the study explains the relevance of the hypothesis formulated "*meaningful spaces that develop concepts from a setting's social practices lead to safeguarding of places in marginalised contexts"* from existing works where similar conditions emerge in the allocation of basic services to marginalised groups in society.

CHAPTER SEVEN
THE ROLE OF SOCIAL PRACTICE IN APPROPRIATING SPACE

7.1 Introduction

In this chapter the role of social practices in the appropriation of space for provision of basic services to marginalised groups in society was discussed. Architectural structures host and disseminate some of the basic services that promote health and wellbeing. These services include: lighting, energy, water and sanitation, and ventilation. Structures forming habitable spaces need to have these services in ratios that are stipulated in building codes and standards for controlling the construction of architectural structures. Therefore, the social ordering in society enforces these rules and regulations when representing spaces with various activities in our settings.

The literature survey in chapter two examined the influences of unavailable infrastructure in settings that cause the marginalisation of groups in society. This leads to a social ordering that helps create a sense of identity within the emerging communities. When this sense of identity confirms the roles that influence belonging, uptake and the subsequent use of service delivery projects can be measured. These projects are implemented to augment services associated with political agencies in society under the rule of state. These political agencies have taken over the role of planning the setting, and are therefore responsible for the apparent association of the built environment to the social practices in marginalised settings. In the end, cultural significance of the places in the setting abound with rich meaning, independent from the domination of reproduced clusters of standardised design interventions.

Social practice as articulated through the data is vital for the appropriation of space and the resulting creation of place in marginalised settings. In this chapter the focus on the use of the social practices of marginalised communities to appropriate space is reinforced. This study began by examining the influence of water and sanitation infrastructures on emerging social practices in marginalised settings. These practices lead to a social ordering within these setting articulated in emergent societal groups. This network directs the flow of information and resources which helps marginalised communities identify themselves within the wider society. Through these identities, the appropriation of space is seen to reflect in places that emerge within the informality of spatial production in marginalised settings. These places and the distinction created between political agencies and marginalised communities are discussed in this chapter.

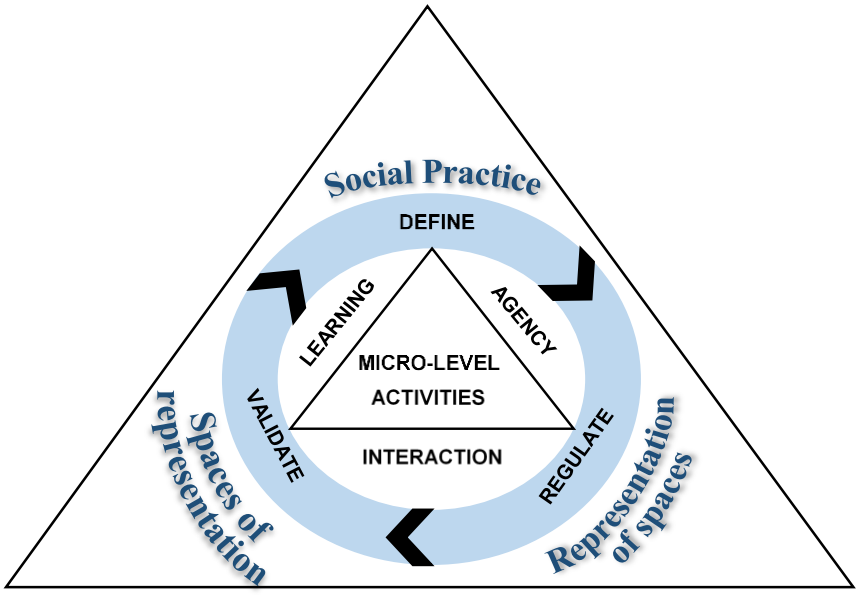

Figure 7.1: Relating the relationship matrix to Lefebvre's triad of space production

In Figure 7.1 the links with the theoretical model underpinning the research are we observed. Lefebvre's 'triad of space production' emerges in the relating aspects drawn from the empirical data. In Chapter six, the implications of the relationship matrix were discussed and linked to Lefebvre's right to the city. The hypothesis formulated: *"meaningful spaces that develop concepts from a setting's social practices lead to safeguarding of places in marginalised contexts"* is discussed further in this chapter. Using literature on design interventions implemented in marginalised settings, the study highlights the implications of the emerging model and hypothesis for other community initiatives.

7.2 Transfereability of the spatial appropriation model

A recent example of developing meaningful places can be seen in the fishing towns of Japan after the tsunami of 2011. "Nearly four years after north-eastern Japan's historic earthquake, tsunami and nuclear meltdown on March 11th 2011, more than 170,000 people are still stuck in temporary housing along the ravaged coast and it is often the bosses of construction companies, rather than local officials or central government, who pick and choose what is built" (Anon, 2015). This means the marginalised community are not included in the design process of their setting. This case is in contrast to the projects run by the architect, Toyo Ito in some of the disaster areas (see Figure 7.1). With the 'home for all' project Toyo Ito deliberately engineered the process to transcend the individual egos of architects, while bringing the local community in as equal partners in the design process (Worrall, 2013). This type of active community involvement is viewed as an important part of an *active citizenship*

agenda, which refers to mechanisms that can enable citizens to influence government policy (Tooke, 2003).

Figure 7.2: Home for all design by Toyo Ito (Worrall, 2013)

> "One characteristic of 'home for all' is the way in which those making the facilities and those living in them join together to discuss the project during the design and building process. Listening to the wishes of people living in temporary housing, sympathetic students and designers, tradesmen involved in the construction work, and residents cooperate to make them reality. But this process by which the buildings come to fruition is actually hugely significant, because it questions the very meaning of the individual in the modern sense" (Basulto, 2012).

The relationship between agency and learning by building on cultural significance is best seen in the above extract. The vision of the home for all was to offer assistance and affordable shelters to the victims of the disaster and help them to rebuild their lives by bringing the community back to life. Each building was developed with both the community members and the constructors in mind, providing an open dialogue between all stakeholders to discuss, gather and share ideas about the reconstruction of the area (Chin, 2013).

Figure 7.3: Home for all at a fishing village in Kishioma, Japan (Chin, 2013).

Conceptualising architectural forms for marginalised settings by grounding the concepts in social practices of the community is an approach that can contextualise design interventions. This approach to design is applied in varying degrees of inclusion of the marginalised communities, showing programme activities which are actively participatory and those that are tokenistic (Arnstein, 1969). The difference in the two is the level of agency and interaction that occurs between the group implementing the programmes, and the groups receiving the projects. By aligning the aesthetics of the new building to reflect the traditions of fishing, this project takes into consideration both the social and cultural aspects of the community. This highlights again the need to live not in isolation of our setting, but as part of our natural environment (Fukuoka, 1987). In order to align interventions in marginalised settings, it is important to encourage the active participation of all stakeholders. This study has highlighted some of the repercussions of excluding marginalised groups in social initiatives in the previous chapter. “Water management schemes that generally see communities as homogeneous entities can overlook complex realities where access to and control over water resources vary by multiple, interlocking and hierarchical systems of differentiation. Participation involves processes of inclusion, negotiation and resistance, which are [sometimes] insufficiently understood or addressed” (Sultana, 2009: 347).

7.3 Influences of available infrastructure

> According to Mc Farlane (2008:2) “the solution to the sanitation crisis has been to make urban defecation a global business. Indeed, one of the great achievements of Washington-sponsored neoliberalism has been to turn public toilets into cash points for paying off foreign debts, pay toilets are a growth industry throughout Third World slums. The focus on cost-recovery from the poor means that sanitation is often provided not according to those who need it most, but according to how many people can pay”.

Often “poor people pay higher prices for water in locations with poor services e.g. to water vendors” (Butterworth & Soussan, 2001:2). Service infrastructure is seen to be influenced by both the external agencies which fund the projects and the internal agencies that control civic organisations in the marginalised communities.

Tools, processes and techniques that influence water and sanitation programmes in marginalised communities range from social to architectural forms, where infrastructure acts as a medium that controls the means of access to communities within a specified setting. The programmes introduced by both government and non-governmental institutions act as tools used by agencies to control the flow of services in marginalised communities. For example NGOs received funding from international foundations to develop a map-based water and sanitation portal in Kibera that provides information to stakeholders of existing water projects in the area. The project was developed under the platform of a Public-Private Partnership (PPP) involving a local public service provider and a profit-based organisation working together with the NGOs (Mulligan, 2014). These programmes provide the political agencies with an opportunity to create a means of transfer of information and knowledge that can assist the marginalised community to access water and sanitation services. “Through the Nairobi Informal Settlements Water and Sanitation Improvement Programme implemented by AWSB and financed under the ACP-EU Water Facility, the European Commission has been working to increase access to water and sanitation facilities for the Mukuru residents, as well as other six informal settlements in Nairobi (Anon, 2011). Project implementation by NCWSC in collaboration with AWSB promotes social connections through partnership programmes with the local community. These programmes champion the right to access affordable WSS for marginalised communities. Additionally, the world bank’s Water and Sanitation Programme provides technical training to support and assist in the successful implementation of projects in marginalised settings (GPOBA, 2014).

The structures that provide a platform for successful implementation and management within the programme through public participation lead to stratification. The emergence of these levels result in divisions amongst the stakeholder groups. This affects the information available and the knowledge which is supposed to be easily transferable between the stakeholder groups. Infrastructure management by national government is essential for effective allocation of facilities. The community participatory approach promotes ownership of WSS by involving community groups in service provision. Additionally, clear documentation is also needed to increase the adopting of this approach in marginalised settings (Butterworth & Soussan, 2001). The management of natural resources which can be an income generating activity for low-income groups becomes the main driver in the programme. However these enterprises cannot replace larger institutions such as municipal

authorities in managing the disposal of waste, especially when it is concentrated in large quantities and access to the setting is difficult (Tacoli, 1999).

Lack of access to basic services such as water and sanitation is a crucial issue in many peri-urban areas. This is because they are considerably far from existing water mains, trunk sewers and storm and surface water drains. Access to water, sanitation and drainage infrastructures becomes more difficult and expensive. Many peri-urban areas also fall under the jurisdiction of local government which is weak or has low capacity for investment in these types of infrastructure, although they are local governments to negotiate investment from regional, national and private utilities (Tacoli, 1999). In some instances basic resources are considered to be under dominion rule and are treated as a property, making it difficult to protect it for future generations. However, when these resources are managed in conformity with the principles of a public trust, shared use, long-range planning, democratic control and holistic management and environmental stewardship, the human right to water is addressed (Swinton, 2012). Therefore a change or indeed an innovative approach that addresses both social and political influences of appropriating space can be considered. By aligning the political agencies that control provision, the social aspects arising in service provision become a platform for innovation. Because social innovation can be said to change the social relationships between the stakeholders, it acts as an institutional converter. As a result the governance and capacity of a society is enhanced by promoting discontinuity with existing practices. Therefore, over dependence on the state to provide effective platforms for service provision is reduced, motivating communities to deal with challenges in their setting (Bekkers, et al., 2013).

> According to Ahlers, Cleaver, Rusca and Schwartz (2014:6) “the wealth and insight, the heterogeneity and messiness of everyday practice and experience provide an insight that allows us to understand the political economy [which can be seen in Lefebvre’s (1991) insight of how the *lived space* and capital is produced…] How global processes shape and in turn are shaped by the everyday that allows us to link government modalities, social relations, infrastructure design and biophysical processes that relate to water provision and consumption. The analysis of everyday negotiations over access to water also shows that the state is not monolithic or necessarily coherent in determining or producing water services, so that all actors involved (users, producers, policy-makers, authorities) have multiple identities, moving in an out of formality. Users [are seen to] contribute to shaping the urban waterscape through their diverse practices of accessing and actively producing service configurations”.

This is true in the case studies where community groups signed agreements with the local water service provider. The emerging “adaptive governance recognises that the complexity of informal urban settlements requires collaborative management and practical involvement through flexibility and negotiation, rather that the application of standard rules and procedures” (Seeliger & Turok, 2013:188). This allows the political agencies to shift between formal and informal service provision in these informal settlements. Whilst adaptive governance gives room for dynamism, it may sometime lead to poor service delivery. Poor access to sanitation means that many residents use the surrounding bush to relieve themselves, and the inadequacy of facilities make the community vulnerable to outbreaks of communicable diseases. It also means that raw sewerage flows into the stormwater system and contaminates rivers (Seeliger & Turok, 2013). This is especially true for settlements that are situated near bodies of water that may also provide alternative access to water for the community.

Iinformal settlements are caused by the failure of governments in developing countries to keep-up with urban migration caused by economic development. This leads to failure to implement urban plans that can assist in the provision for access to municipal services such as WSS to marginalised settings (Isunju, Schwartz, Schouten, Johnson & Van Dijk, 2011). The unforeseen outcome of rapid urban growth directly influences the local government’s ability to provide reliable municipal services. “The crucial concept of ‘unintended consequences’, itself presupposes a viable concept of human agency, systematically clarifying the nature of human agency by demanding an explicated series of interrelated concepts such as power, motive and reason: the theory intended to illuminate the duality and dialectical interplay of agency and structure” (Held & Thompson, 1989:23). The role of agency is seen in the development of service provision platforms by political agencies as a strategy for dealing with the urban sprawl. This gives way to the social and institutional structures that emerge in these settings, and which assist community members to navigate the newly appropriated spaces. When provided with state-funded homes, as in the case of Cape Town, South Africa, In an attempt to improve access to these services the local government in Cape Town provided state-funded homes, as seen in figure 7.4 to marginalised communities. Though it was a laudable effort, social practices of the community were not fully considered, which has resulted in makeshift dwellings being erected (Govender, Barnes & Pieper, 2011).

Figure 7.4: A shack stands next to new house in Joe Slovo, Cape Town (Nkuna, 2009).

Social practices that make up the relations between political agencies and marginalised communities are important to ensure efficient appropriation of space. This means enabling the community to interact with development programmes in their setting to create meaningful places. Adequate service provision is directly influenced by the social relations between the two stakeholder groups, responsible for the uptake of the water and sanitation projects. To provide reliable services, appropriated spaces have to emerge from the community receiving the service. This participatory approach captured clearly in Arnstein (1969), advocates for citizen control at the concept and development stages of the programme. A fulfilment of this criteria is addressed in the next section. The section discusses the social ordering and outlines the steps in the provision of water and sanitation services for marginalised communities.

7.4 Social ordering of water and sanitation access

The hierarchical order seen in society can be said to control the dissemination and access of WSS services in developing contexts. As mentioned in the previous chapters, people are not marginalised, it is the space they occupy that is underserved thus marginalised. The lack of adequate service delivery is caused in part by the servicing of land by political agencies providing infrastructure. This is compounded by the informal dwellings which do not provide access points for municipal services in the built environment. “The production of space [then] becomes the dominant process of reproducing social relations” (Lefebvre, 2008: 137). These spatially coded areas give rise to ‘re-produced social relations’ where the now marginalised communities can navigate. The point of mediation between what exists and what emerges in

the context of the produced space is indeed the anchor point for social initiatives. Therefore by using design as a tool for creating social structures, the project becomes part of the political agencies with power and control in the marginalised setting. Architecture can serve as a regulatory mechanism that contributes to the maintenance of the power of one group over another. Moreover it functions as a tool for coding reciprocal relationships at a level that includes the movement of communities between formal space, as well as surveillance of informal space. Built environments affect social ordering by interacting with human perceptions of personal space marginalised communities inhabit and the territory surrounding them. Buildings can also order the social interaction by effectively dominating and controlling people (Shah & Kesan, 2007).

In an effort to promote access to services for marginalised communities in developing countries, international donors and development banks offer grants to national governments. This has resulted in reinforcing power at the national level which consequently results in little attention being paid to governance and local government needs (Tanner, et al., 2008).The facilities built for public use are usually under the direction of both social and political groups. Examples include: Non-Profit Organisations and Social Enterprises such as. Iko Toilet, Maji Na Ufanisi, Spatial Collective and Fresh-Life. In the area of political groups, examples include: the UN, EU and USAID, and also monetary lenders like World Bank and FDB. Individuals who participate in the design and implementation of water and sanitation programs hold the key to understanding the uptake and diffusion of the knowledge imbedded in the programme.

The issue of economic benefit in the provision of water and sanitation services within informal settlements has worsened problem of exclusion. Poorer individuals in the setting have restricted access because they cannot afford to pay the prices attached to the services. This exacerbates the problem of equitable and reliable access and limits the means by which community members can be reached (Seelos & Mair, 2012). Co-production is primarily considered as a route to improve the delivery of services, and it has rarely been considered as a lens through which the organized urban poor can consolidate their local organizational base and augment their capacity to negotiate successfully with the state (Mitlin, 2014). Although the incentives of a socio-economic benefit to the marginalised community is vital to the role of local development, it hampers the efforts of local governments to provide municipal services. Therefore feedback on program parameters from the intended user groups is distorted by the new community participatory approaches, whose members are outside the margins of basic service delivery. Instead of creating places that support all marginalised members, the WSS projects serve to further alienate poorer individuals who do not have full access to these services. The goal of Kenya's Water Act of

2002 to value water as a “human right” is lost. “Governments, bureaucracies and the international agencies have not shifted from seeing ‘the poor’ as clients or targets to whom development and environmental management must be delivered, to recognizing them as active agents with knowledge, resources and rights to influence what is done and how donor assistance is used” (Chaplin, 2011:64). This resistance to change limits service delivery in marginalised settings.

Active participation becomes limited once dependence on societal status governs the reliability of access to water and sanitation. Some high-income areas have “frequent instances of neighbourly solidarity and collective efforts. In contrast, low-income peri-urban dwellers and home-workers generally lack the political means to improve their access to WSS services in a way that is affordable for them and therefore tend to be more vulnerable than higher income ones” (Allen, Davilla, & Hofmann, 2006:32). For marginalised communities to effectively use WSS projects information should be disseminated in a way that it reaches the community members. This means establishing a sense of mutual understanding with the social practices abounding within the setting and creating learning programmes for building resiliency. These models control movement, activities and influence social structures that emerge from the new built fabric. Here, "many countries [can therefore be said to] face a governance crisis rather than a water crisis. Good water governance requires effective and accountable socio-political and administrative systems adopting an integrated water resources approach with transparent and participatory processes that address ecological and human needs” (Allen, et al., 2006:20). These leadership strategies hold promise for the marginalised communities that seem to have little or no control of the programmes implemented in an effort to provide suitable WSS projects. In fact, there has been implementations of WSS projects in inappropriate contexts, with little consideration for equity requirements, despite the importance of equity considerations in safeguarding the interests of the poor (Akumu, 2004).

Administrative towns like Thika and Nairobi, in developing countries, were established in areas of low density population, and the rural-urban divide is quite sharp. In the case of urban centres surrounded by higher density population regions, urban horizontal growth tends to incorporate pre-existing regions of population (Tacoli, 1999). Developing countries have in response experienced a push towards the increased involvement of the private sector in the delivery of municipal services (Allen, et al., 2006). One such example is in Chennai India, where poor communities living in slums have made demands for their right to access basic urban services. This has resulted in the local government designing a Slum Improvement Scheme that improve the conditions in slums. (Chaplin, 2011:62). With the government institutions directing the design and implementation process of the projects,

many of the user requirements are left to consultants. This hierarchial structure shows that the government leads the process, while the consultants consolidate data needed to come up with appropriate designs, whereas external agencies provide additional support for design implementation at the sites. The main argument here is that without active citizen participation, the capacity for government to provide public goods and services is severely compromised. This approach can be strengthed through local civil society organizations, which can then provide a platform for wider civic participation and greater political engagement by the urban poor. The nature of grassroots civil society groups matters in terms of their ability to negotiate political outcomes that are favourable to the poor (Mitlin, 2014).

The emergence of societal groups gives bargaining power to marginalised communities and allows them to access resource and services from political agencies. These platforms provide forums in which both stakeholder groups can plan allocation and assign authoritative powers for dissemination of the distribution of water and sanitation services. An example is the Ministry of Devolution and Planning in Kenya which instructed that “work [should be] done during the morning while in the afternoon they [marginalised community members in Kibera] go to the local library in different groups to be taught about money and savings through SACCOs (Savings and Credit Co-operatives). The SACCOs are owned, governed and managed by its members, and give them a support system” (Anon, 2014). In this way the political agency maps out the processes for negotiation, providing structure by formalising community groups that provide a platform to interact and engage with other stakeholders. The structures are seen to instruct pro-poor projects being implemented for improved livelihoods, through which agency is asserted while promoting interaction and learning for marginalised groups.

This formalisation of community groups is also seen in NGOs who have assisted the national government in the preparation of communities for the allocation of land in low-income areas. The cooperation between NGOs, communities and Nairobi County Water Service has enabled provision of WSS to informal settlements which was previously unthinkable (Anon, 2011). This inability to access informal settlements was because their settings did not allow for wayleaves to provide access points for infrastructure (Akumu, 2004). This duality of structure as stated by Giddens (1984) sees structures as both object and means of the structuring process. For marginalised groups, these structures highlight that their civic organisations should engage the organisational structures of the programme, and direct micro-level activities of the project. Ultimately there is a role to be played in the conceptualisation and development of mediating objects, both in the physical and mental space.

Unfortunately, there's a recognized failing of present-day democracy to address the needs of many citizens. This is seen particularly in the lowest income groups where superficial participation leads to micro-management that does not result in successful community involvement (Mitlin, 2014). By allowing several networks between the service provider and the user, the marginalised community is removed from the programme development which occurs in higher levels of management. This has led to the creation of an intermediary service delivery path that further separates the political agencies from the community it serves. In the next section, the importance of embedding social identity in the provision of services is discussed.

7.5 Creating social identity of the participants through networks

Social identity enhances the tools and processes developed to serve society and ensure that all communities receive equitable access to resources. This social identification occurs when "people categorise others. Attributions of group membership feature routinely in how we categorise others, and the categorisation of out-groups is intrinsic to in-group identification which makes an important contribution to the distribution of resources" (Jenkins, 2014:20). This is especially true where groups are categorised by political agencies, which then mirror self-identification taken up by community members.

> "Slums result from a combination of poverty or low incomes with inadequacies in the housing provision system, so that poor people are forced to seek affordable accommodation and land that becomes increasingly inadequate. The number of urban people in poverty are, to a large extent, outside the control of city governments, and are swelled by a combination of economic stagnation, increasing inequality and population growth, especially growth through [rural] migration" (UN-Habitat, 2003:17).

For Lefebvre (1991:11), *"If space is a product, our knowledge of it must be expected to reproduce and expound the process of production".* This knowledge can be said to emerge from the self-identification of community members which results in social identity. Zoning can then be regulated by the state, while social practices are developed through societal interaction. Through this, produced spaces converge through signification to create places that are a representation of society through the presence of cultural artefacts.

To better understand the interaction between the political agencies that categorise, the groups formed, and how communities identify with them, the meaning community to community members is addressed through the following questions:

1. What is the meaning of community to other stakeholders?
2. What are the properties and dimensions of social identity in low-income settlements?

“Focusing mainly on difference is unhelpful if one wants to understand social change” (Jenkins, 2014:24). Social capital is in the widest sense as ‘social resources’ such as networks, membership of formal groups, trust and reciprocity. The urban-focused framework uses numbers and the duration of CBOs as an indicator of social capital. Therefore, an important aspect of social capital is that of representation, that is, access to the state, intended to include different levels of government, from local to national. The capacity of these groups benefit from access to information and representation of their own interests. Social capital is thus an important element of people’s capability to control and defend all other assets (Tacoli, 1999).

Behavioural studies in the water sector of Peru found that by endeavouring to understand consumer expectations, the drivers to change in a community can be uncovered. These studies go beyond socioeconomic development of poor and marginalised communities (Baskovich, 2011). In contrast, service delivery has been decentralised through an organisational approach in Kenya. The decentralisation of the water sector has moved service provision from national government to county governments. This has given CBOs an opportunity they have not had in the past. Through this new approach, rehabilitation and improvements of water service delivery is done (Cordone & Fonesca, 2006). Social identity as a precursor to custodianship, is an aspect that can enhance tools and processes developed to serve society while ensuring that all community members receive equitable access to resources (Jenkins, 2014). Therefore community is not only a physical entity that is governed by social structure, but is also made up of human interactions. Interaction based on basic needs such as WSS which is similar whether in low-income settlements or high-income estates (Brint, 2001).

Involvement of poor and marginalised groups in decision-making and evaluation is a key characteristic of a city’s commitment to improving the conditions of those living in informal settlements. Without information or disclosure, meaningful participation and inclusion is not possible. The quality of participation and inclusion cannot be differentiated, from tokenism and ‘politicised consultations’ on one hand, to citizen-led processes on the other (Tanner, Mitchell, Polack & Guenther, 2008:10). Therefore understanding the social practices of marginalised communities can help develop context-specific projects. To ensure that relevant solutions are implemented, it is important to plan the quality of participation and inclusion. Through the definitions emerging from social identity, spatial appropriation can highlight tools and processes (programmes and projects) that regulate the dissemination of resources to communities. Water governance regimes result from competing models, some of which are implemented by lenders like the World Bank that offer loans to governments. Other models are introduced from grant organisations like the USAID that support local

NGOs. These models promote management by national and local government, while ensuring that regulation is implemented by a wide stakeholder group. This ensures that both users and the community are empowered through these processes of engagement. (Molle, Mollinga & Meinsen-Dick, 2008). Once the implementation of the project is complete, the value and impact of the built environment housing the access and disposal of water, remains a viable platform for building capacities in marginalised communities.

Figure 7.5: Construction of ablution blocks by NYS and volunteers in Kibera (Anon, 2014).

Kenya's urban planning is controlled by political agencies who develop master plans for the city. (Nippon-Koei, 2014). Smaller urban plans are not considered and therefore planning with the consideration of adjacent activities was not done. This side-lined civic education which could ensure that participation goes beyond consulting, and reaches citizen control. The recent ablution blocks built in Kibera through the Devolution and Planning Ministry and the local Water Service Board is a glaring example of this approach. These projects are commendable but urban planning that offers only foresight of future plans in the setting does not ensure effective service delivery. Inclusive participation of the community is done during implementation. The National Youth Service (NYS) and volunteers from the local community go for training before taking part in project implementation. (Anon, 2014).

These participatory approaches should establish a new type of citizenship that engages society at the grassroots level. Communities need to be involved in service platforms as their contributions may lead to the sustainability of WSS programmes. Pro-poor programmes promote participation that include multi-stakeholder groups which help in efficient provision of WSS. The boundaries that limit where the local government serve does not often include

areas where the poor reside. This has caused a majority of the WSS delivery in Chennai India to be driven by vested interests and to be influenced by vote-bank politics. (Tanner, et al, 2008).

Social networks portray the informal economy as an alternative form of regulation, operating outside the framework of the government and therefore outside the margins of the wider society (Meagher, n.d). This does not mean that the government should separate the operations in the marginalised community organisations. Rather it should act like a medium to regulated service delivery. By regulating the means of service delivery the marginalised community can take up responsibilities that offer a more inclusive approach to the dissemination of resources. Integral to social structures is the symbols that help individuals identify modes of communication either verbal or through built structures. “Codes [are] seen as part of a practical relationship, as part of an interaction between ‘subjects’ and their space and surroundings. [They] highlight contents – the social (spatial) practices inherent to the forms under consideration” (Lefebvre, 1991:18). The typology of social identity uses the perceptions of personal space and territory to build environments that are responsive and able to meet the changing privacy needs that allow for easy alteration which either separate or bring people together. Territoriality considers how people exert control over a specific space (Shah & Kesan, 2007). This is true in settings where marginalised groups live whether in formal or informal settlements. However, the pervasive association of social networks with development seem not to have materialised in Kenya. Social networks have become trapped in a ‘social capitalist paradigm’ in which they promote economic efficiency and accumulation, and tend to be portrayed as liabilities if they do not (Meagher, n.d.).

Social structures need to feature in a form where marginalised communities can identify with. For settings whose urban fabric is being changed by political agencies, this is especially important to preserve cultural bonds with the setting. The provision of basic services, in this case water, is important for general livelihood. Therefore to sustain development strategies for improved wellbeing, equitable access should go hand in hand with social interaction. In the next section a discussion of the relationship between social structures and the built environment is used to shape the understanding of social initiatives in the WSS sector. These initiatives are seen to have greater influence in social structures when implemented in marginalised settings where there is a shortage of available water resources. This new participatory approach introduced service provision that provides the means to attain a reliable mechanism for equitable access. In response, new social practices emerge, which drive change, sometimes outside the control of the marginalised groups. Design as a process that derives its concepts from users’ needs and activities entails that

the WSS projects should do, over and above providing physical structures. They should address the social needs and activities of community members.

7.6 The built environment as a factor in social initiatives for WSS provision

As seen in the previous sections, the built environment is the base on which society is formed. Architecture forms the frame of reference that indicates to the community the value and role they play in society. Everyday activities serve to distinguish the use of spaces which then locate social practices within a community. These social practices are inevitably linked to WSS access, especially in marginalised settings (Lefebvre, 1991:17). It is therefore important that validation of the marginalised community occurs by advocating equitable access of basic services, especially water and sanitation services. In this section the role of the built environment in marginalised communities is highlighted. The section builds on the previous section which discussed the value of social practices in the provision of basic services. This was aligned with the general definitions that promote different service delivery to communities, and the regulations that keep the norms in place. Therefore, difference can be said to be what makes significant movement possible only if each element that is said to be present is related to something other than itself and retains the mark of a past element (Derrida, 1967).

Figure 7.6: Arial view of ablution block in an informal settlement

This movement is observed in the lack of dialogue between political agents and marginalised groups which is a vital part of the process of creating significance. The substitution of places of central significance from open meeting to facilities that offer communal service as seen in figure 7.6 is becoming popular. These places are linked to the urban setting through the access of services that promote the right to urban life and by extension the right to the city

(Derrida, 1967). The extension of the significant community places is observed in the different interventions implemented by political agencies within marginalised settlements. The ablution blocks that have been built in informal settlements as seen in figure 7.6 are visually separated from the surrounding setting. The new KENSUP housing project, seen in figure 7.7, is also not related to the past architectural structures and stands alone and removed from the community's setting, which holds meaning for them. The built environment as a medium for community activities can be used to map out the process of signification. This is relevant in marginalised settings as it draws on differences, which highlight the social practices of stakeholders in the process of space production.

Figure 7.7: New housing project that is set to replace the adjacent informal settlement

Even in densely populated areas there is still division of space, which is not seen in the housing developments. The interventions do not take into consideration open spaces significant to the community members providing instead vertical space in the form of flats. As seen in Figure 7.8, the open spaces are used by community members for different purposes including children's recreation and subsistence farming. The perception of space in marginalised settings can be observed from the current appropriation of formal space.

Figure 7.8: Food security and greenery within marginalised settings in Kenya (Pace, 2011)

The appropriation of space in marginalised settings, as seen in the figures 7.6 to 7.9, is explained by poverty, hardship, lack of infrastructure and minimal service delivery. This concept of space has been investigated by political agencies in an effort to improve the livelihoods for marginalised communities.

Figure 7.9: Inclusive spaces within marginalised settings (Naranjo, 2014)

As depicted in figure 7.9, any definition of architecture requires prior analysis of concepts for the appropriation of space. These include places of learning and playgrounds that are influenced by social practices of the community (Lefebvre, 1991). If we approach space production from Asher's (2010) perspective that knowledge is not produced in a vacuum, and is it not without effects, then the inseparability of power and knowledge that promotes tacit knowledge has been excluded or ignored. The excluded tacit knowledge emerge from marginalised communities. The built environment that is seen to be implemented by political agencies is produced without any explanation of ways to use the space. The informality of the produced space masks the places created in the clustering and grouping of structures as seen in Figure 7.9. In this example the shack built next to the newly constructed RDP houses in Cape Town's township area of Joe Slovo shows the lack of uptake in the appropriated spaces. This is contrary to the Western European setting, which according to Lefebvre (1991:53) used "the manor, monasteries, cathedrals – [as] strong points anchoring

the networks of lanes and main roads to a landscape transformed by peasant communities. In this space the Western European capital accumulation [is] the original source and cradle of [their] towns." As seen in Figure 7.7 the informal settlements make their 'near order' in quite the same way, incorporating churches and small shops within the settlements. Lack of planning of the public and private spaces in the setting can be blamed by the limited access to resources. By refusing to accept the places formed by marginalised communities, the uptake of community initiatives aimed at improving livelihoods can be difficult to accomplish.

7.7 Chapter summary

From outset, this chapter sought to highlight the importance of Lefebvre's triad of the production of space in marginalised settings. It has used literature to assert the knowledge outcomes and hypothesis that emerged from the data in the field. The individual in community represented in the community based organisation is a crucial aspect in conceptualising spaces for WSS projects. Projected uptake and use of the project means that the programme is context-specific and can therefore leads to sustainable strategies for improved livelihoods. This is especially true as users contribute to the shaping of the urban waterscape through their diverse practices of accessing and actively producing service configurations (Ahlers et al., 2014). Therefore by locating these concepts in the social practices of the marginalised communities, the community initiatives can be said to be inclusively designed. A community participatory approach can assist political agencies to bridge the gap emanating from social practices in marginalised communities. By actively engaging community members at the conceptual stages, true participation can occur, where both parties learn from each other and the knowledge outcomes ultimately impact on the society as a whole.

The chapter concludes that, the relationship matrix that emerged from the cases studies discussed, is related to the context and viewed from the perspective of Lefebvre's theory of space production. By refining the practical model derived from meanings and experiences of the study's participants, an emergent framework can be outlined. The triad of the production of space provides a theoretical lens for highlighting the importance of the marginalised community in Water and Sanitation Service programmes in their setting.

CHAPTER EIGHT
CONCLUSION AND RECOMMENDATIONS

8.1 Introduction

The study began by referencing Lefebvre's *right to the city* in an effort to highlight the role that marginalised communities can play in ensuring equitable access to WSS. Reliable access to water, as stated in the Kenya Water Act of 2002 has become a right thus making the appropriation and design of these facilties paramount for marginalised settings. The literature survey in chapter two saw the emergence of questions later used to frame the methodological approach using Lefebvre's right to the city as a theoretical lens. Social innovation, through the use of social enterprises is seen to play a vital role in collaborative efforts to build networks. These partnerships are seen to offer ways of ensuring agency that promotes equitable provision of resources. The gaps foregrounded in the survey give the study questions with which to approach the field by reviewing: a) aspects of defining spatial settings; b) regulations impeding or promoting access to WSS; and c) validating of self-identity by marginalised groups. The questions asked lay the ground for the objectives and case study questions used to approach the setting.

The subsequent analysis and discussion in chapter four, saw the development of a pathway ananlysis of social innovation projects in the chosen settings. By mapping the sequence of events, the study addressed issues raised in the survey concerning evaluation of social innovation projects by using characteristics of social innovation. The empirical pathway provided a means to further critically analyse case studies that promoted agency and participation as highlighted in the gaps emerging from the survey. This resulted in a path-breaking transition being highlighted in the sequenced events of *participation and networking.* The model of spatial appropriation then represents the study's main contribution. By adopting Lefebvre's spatial production model, the study emphasised the additional importance that both governance and regulation have to the resulting places that are created. The model shows inter-connectiveness of agents of change and marginalised communities, bringing to the fore the need to ensure agency, interaction and learning for improved service provision. The hypothesis when applied to existing works and projects, in chapter seven, highlighted gaps in the collaborative efforts similarly addressed in the research study.

8.2 Theoretical contribution

As pointed out in chapter four, the initial output of observations and analysis done in water and sanitation projects resulted in the developing of a pathway analysis for social innovation. This pathway provided organisational structures from which to observe political agencies,

and structuring processes which marginalised communities engaged in. The duality of structure as outlined through the works of Giddens (1984), and the *model of the agent* was used to further understand the binary relationship that emerges in the subsequent cases reviewed. By appropriating the unacknowledged conditions of marginalised settings, unintended consequences were seen to be exploited to mitigate inequitable resource allocation. Because agency in these programmes was mainly evident in organisational structures controlled by political agencies, community members unable to pay in some of the cases were excluded from the services provided in their setting. Therefore the motivation of actions that lead up to the implementation of water and sanitation projects for marginalised groups was distorted. Equitable and reliable access defined by government programs implemented in these settings, were seen to fall short when compared to the desired outcomes. As seen in the urban case, once the project is deemed as non-profitable, assistance from political agencies diminished, resulting in the complete closure of the project.

The organisational structures result in a linear progression, as illustrated in table 8.1, that started with spatial appropriation, leading to engagement and creation of place, which transforms settings through modes of transition. The successive cases studied showed participation and networking, exploitation of knowledge and resilience as organisational structures where path-breaking transitions occur in the binary relationship between political agencies and marginalised groups. This separation of micro-level explanations in the programme, and micro-level activities within the projects distinguishes hierarchies. These apsects when outlined in a study of the transfereability of the spatial appropriation model in chapter seven are seen to give rise to concepts embedded in the social practices of communities as seen in Toyo Ito's 'Home for All' (Chin, 2013), that allow for an integrated design where micro-level explanations of cultural significance are intertwined with local activities of the fishing village. This differed from state-funded homes provided in the Cape Town's townships, where residents revert to makeshift dwellings (Govender et al., 2011). It can be argued that, this approach impacts directly on community participation in developing new neighbourhoods, highlighting yet again the importance of involving marginalised groups when designing projects for their socioeconomic upliftment.

The emergent hypothesis from this study: meaningful spaces that develop concepts from a setting's social practices lead to safeguarding of places in marginalised contexts, draws seamlessly on the theory of space by Lefebvre (1991). This resides in the aspects emerging from the theory of the production of space where definition, regulation and validation are seen to be primary building blocks. The culturally and symbolically coded place, rich with meaning (Pugalis & Giddings, 2011) is then signified by agency, interaction and learning of

the stakeholders in the setting. The coding in water and sanitation projects show changes in the disposal of black-water, with political agencies preferring compost toilets to mechanical sewerage disposal. These differences in allocation and the facilities built in rural and urban settings dictate significance and the cultural meaning of water and sanitation access. As noted in previous chapters, the building materials, location of the toilet facility, and proximity to culturally significant areas within the setting determine the safeguarding of the project (Seelos & Mair, 2012).

Where the project is not situated in a highly vl setting in which the community can code the project as culturally significant, it remains ill-kept as seen in the Huruma urban case study. These diverse practices of accessing and actively producing sanitation service configurations show that everyday negotiations allow organisational structures to link government modalities, social relations, infrastructure design and biophysical processes (Ahlers et al., 2014). In Table 8.1, an outline of concepts derived from the relationship matrix emerge as a linear framework to converging physical, mental and social space (Soja, 1989).

Table 8.1: Outline of correlation of path analysis to theory of space

Spatial Appropriation			**Place Creation**		
Physical space Conceptual plans done prior to design development.		Mental space Bureaucratic conjunctions mediated by civic awareness		Social space Inclusive programmes to promote resilient communities	
Define	**Regulate**	**Validate**	**Agency**	**Interaction**	**Learning**

In this case architecture, and by extension design, has the role of mediating the physical structures built to house resources, and the social relations supported within it. Lynch (1960) asserts that elements contributing to the legibility of a place indirectly define a sense of place by objects that have character and meaning to the communities. Similarly through this discourse, meaning can be unlocked and conveyed to the observer (Jones, et al., 2005). Spatial practice produces social space by interlinking networks of activities from different stakeholder groups within the built environment (Goonewardena et al., 2006). This view again highlights the role of the producer of space as an agent of place creation.

8.3 Contribution to prevailing practice of social innovation in marginalised settings

The study's findings started by itemising the provision of water and sanitation services as stated in the research problem below. Thereafter the capacities of communities were assessed by reviewing how community members use CBOs to inform themselves about the new service provision process.

*This study aims to **assess the provision** of water and sanitation services, and their **influence on community capacities**, within informal settlements in Kenya's Nairobi and Kiambu Counties.*

When locating the research problem in the previous chapters, we noted that architecture is both social and political (Shah & Kesan, 2007). This was further reinforced by findings of this study, where it was evident that political agencies from government, NGOs to international donor agencies take part in formulating Water and Sanitation Services programmes in marginalised settings. By observing these programmes and discussing the projects within them, the role architecture plays in socioeconomic and socio-political aspects of marginalised groups became very apparent. The findings also revealed the type of participation attributed to the community through interaction stipulated by political agencies. Through registration in the Social Development Department (Huruma INT09) a CBO attains a measure of agency so as to run the ablutions blocks and generate revenue.

This incentive that involves marginalised community groups and includes legal guidelines of how stakeholders interact is a good example of promoting capacity building. But as noted in the study, these organisations lack proper uptake within the community, resulting in lack of intended outcomes with the target group. Some of the groups running the projects optimally, do not meet with political agencies, nor did they receive any training on management (Limuru INT09). This lack of accepting differences seen to emerge in social practices of marginalised groups leads to social enterprises taking advantage of the gap that emerges (Limuru INT04). Systematic learning, where an individual identifies the choices made, such as colour, lighting and size and maps them to the meanings and ideologies in the visual imaging seen in both the Limuru and Thika projects, is grounded in textual evidence (Lei, 2012). This textual evidence can be used to identify working aspects of the social initiatives (Seelos & Mair, 2012). This is best addressed in a Post Occupancy Audit of the design process. This can inform the community groups and build analytical thinking which intends cultivate critical learning (Lei, 2012). These opportunities for the community to engage with the political agencies are vital especially when appropriating spaces that create significant places in a setting.

Furthermore the data revealed that, a Community Participatory Approach consisted of sensitising workshops to ensure that the community members are aware of the projects being implemented in their setting, after which the political agency maps the setting (UDDT INT01). Meaningful participation is seen as one where the community is part of the mapping process in order to reveal belief systems, expectations and perceptions of the people (Cowen, 2009). However, the Community Participation Approach used in composting facilities in Gikomba Market and Thika, fall short of its potential to create a forum where

marginalised communities can help in defining their setting through interactive platforms. This is because community participation is only allowed during the construction of the project because the members are expected to contribute the labour force.

From the outset of the research it was noted that allocation of Water and Sanitation Services is primarily done by political agencies. This is because authoritative power is assigned through law and government to safeguard natural resources. Here, political agency can reassign funding for projects that provide Water and Sanitation Services access in the setting.

> "The Committee [County Assembly Budget & Appropriations Committee] was alarmed to note that the development allocations for the Water, Energy and Sanitation Sector had been reduced to zero. This implies that the sector would have no development program this year. It is noted that this may have been informed by the need to ensure that Nairobi City Water and Sewerage Company (NCWSC) delivers more and produces enough revenues as to cater for all the recurrent and development votes. However, this Assembly will appreciate that it has taken quite a long time since the last time a major rehabilitation of the sanitation system and sewerage mechanism of the City was done. With the understanding that there may not be enough resources in the current financial year, the Budget Committee urges NCWSC to up the gear and utilize every cent entrusted to them. In addition it remains the commitment of the Budget Committee to set aside at least Ksh. 3 million per ward in the next budget to cater for the rehabilitations of the water infrastructure" (Okumu, 2014:10).

From this extract it is evident that authoritative and allocative powers rest with the political agencies and little control is given to the communities. This relates to objectives of the research, which are:

1. Explain the network created to inform members of marginalised communities of their role in the provision of equitable water and sanitation services.
2. Describe the milestones attributed to community participation in social initiatives aimed at enhancing wellbeing through access to water and sanitation services.
3. Outline guidelines stating the processes that ensure continual management and ownership (custodianship) of water systems within built facilities of social initiatives.

The allocative and authoritative power and control (Giddens, 1984) that lie outside the marginalised communities exclude them from processes that guide development in their setting. How the county government in its assessment of insufficient Water and Sanitation Services includes marginalised groups, is in fact the key question. As seen in the Mukuru

informal settlements, “organizations have constructed sanitation facilities within the communities” (Ibrahim, 2013:17). The exclusion of the marginalised communities in formulating development programs and projects is discussed in the next section, where the highlighted are aspects interaction, learning and agency are highlighted.

8.4 Summary of thoughts on the observed processes

The appropriation and design for facilities in marginalised settings has been done through non-governmental organisations and social enterprise. There is seen to be little to no involvement of the community members in conceptualisation or decision making procedures of the programs for resource inclusion. The case studies visited highlighted widening gaps in the governance of WSS projects that were seen to lead to closure or difficulties in management. At the onset of the study, the main interest was to observe and document the path-dependency of these social innovation initiatives. But after the initial phase of the research, the empirical pathway proved to be fractured into the political agents, and the marginalised communities. Thereafter, the subsequent case studies saw recurring path-breaking transitions by the marginalised communities in an effort to utilise the facilities efficiently. The breakdown in the communication during participation and building of networks caused the marginalised groups to be embitted, and for some political agencies to circumvent program objectives.

Design strategies that deal with social equity are important when providing safe and reliable facilities for WSS. As a concept, social innovation promotes equity and empowerment that is much needed in marginalised settings. The model makes an attempt to map a more inclusive approach to approrpriating resource facilities. By centring a sequence that allows communities to acquire agency through interaction and learning, political agencies can provide inclusive governance by having more participatory approaches. Inclusive strategies in defining, regulating and validating communities can create a platform for discourse on programmes and policies that drive projects in marginalised settings.

8.5 Recommendations and future reasearch

Involving marginalised groups in society takes more than just participation in the implementation of projects. For these approaches to have a lasting effect in the setting, there needs to be adequate social governance in spatial appropriation in the urban fabric. Through this socially inclusive approach cultural differences that exist in society can be applied to settings and help in congenial appropriation of space. This alternative method of urban planning is one that includes both the political agencies and community members. This study has shown that when applied to the provision of water and sanitation services, it proves essential for effective and efficient running of both programme and projects in the setting.

The lack of monitoring and evaluation shows that programme *parameters* need to be adjusted. These adjustments should include intermittent monitoring and evaluation elements for both the political agencies and the marginalised groups to build accountability in service provision. The emerging relationship matrix shows that there is a sense of interdependency in the way architectural forms and social structures develop in the context of marginalised settings.

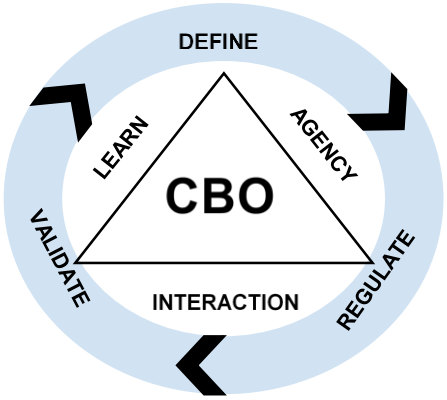

Figure 8.1: Relationship matrix between the community and its social and physical space

The assigned micro-level activities highlighted in *Appendix DA06* are now seen to be directly influenced by the activities of the CBO, and the roles they undertake in the political position of Water and Sanitation Services. To this end, this study recommends the following:

1. Projects should include the community in the decision making platforms created at the macro-level where the programme is controlled by the political agency. Here at a micro-level it would align the community with the areas of learning and agency, where government institutions can introduce educational programs to improve uptake and assign civic responsibilities.
2. As services in the provision of basic resources are further devolved in the new governing system, the role of civic organisations transforms as well. Therefore regulatory boards should involve communities at a group level. Here the community groups align at the interaction level, where they can be used to effect regulations and perform context-specific evaluations.
3. The importance of custodianship in the appropriation of space cannot be stressed enough. Without the uptake of community members, initiatives meant for socioeconomic development cannot thrive. In this light, connections between built facilities and the communities they serve play a vital role in drawing together the distinct measures of equitable access and wealth creation. Therefore at the validation

phase, the role of the marginalised community should be specified and substantiated to ensure an inclusive design process toward equitable and reliable provision of WSS.

In this context, Grounded Theory offers a new approach for conceptualising and implementing architectural projects. By aligning itself to the needs of the user, Grounded Theory offers a rich account from which to create places that derive meaning from community. Although not a new research method, it is not frequently used in the field of architecture and design. In this study, this approach has assisted in the assigning of roles to stakeholder groups through conceptual constructs that led to the relationship matrix. By assigning project the political agencies create steps that are followed by marginalised groups in assigning of these facilities to improve access to WSS.

Areas for future research

Social relations remains a viable method to understanding the perceptions of different communities in an effort to ensure equitable distribution of resources. This is true in most contexts for marginalised communities living at the fringes of society. By adopting a Grounded Theory methodology, future research can enhance integration of marginalised groups using Community Based Organisations and a community participatory approach. In this way research studies can endeavour to:

a. Reconcile marginalised groups in urban planning processes by mapping their settings to improve service delivery of basic municipal resources to their neighbourhoods.
b. Reassert interaction between political agencies and marginalised communities by using civic organisations to promote education on basic rights and citizen responsibilities for efficient resource governance.
c. And lastly, incorporate the study of social practices in the conceptualisation of design interventions for social initiatives.

8.6 Chapter Summary

Providing basic services to marginalised communities is based on more than building providing access to WSS facilities. It involves making available other building mechanisms that can assist in creating meaningful places for safe and reliable access. Social practices play an important role in designing and implementing programmes and projects that move towards treating marginalised groups as viable conduits for social change. For improved access to water and sanitation services to have an impact on livelihoods in marginalised settings, the communities living there deserve the right to participate in the process. In this study we have highlighted various projects in urban and rural settings with varying degrees

of participation. In projects where the community members have had direct influence on the programme parameters, the projects impacted positively on the living conditions of the people. From this perspective this study concludes that the more marginalised communities are involved in conceptualising, developing, implementing and evaluating solutions, the greater their ability to upscale projects. By highlighting the social process that determines programme setup, the study has illuminated the cognitive cycle needed to integrate marginalised groups in the design planning.

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Appendices

APPENDIX DC01

Consent letter.

Study title Harnessing the potential of partnering networks towards reducing reliance on municipal services.

Investigator Mary Wairimu Maina, Doctoral Candidate

Ms Maina is a doctoral candidate studying the relation between the built environment and the influence community participation and stakeholder engagement have on the efficiencies of social innovation initiatives. The study supervisors and other appropriate authorities at the Cape Peninsula University of Technology (CPUT), in the Western Cape Province of South Africa, have approved the study and its procedures. The study procedures involve no foreseeable risk or harm to you. The procedures include:

[1] *responding to an interview schedule about your experience in social innovation initiatives and;*

[2] *completing a supplementary demographic data sheet.*

Participation in this study will take approximately 20 (twenty) minutes of your time.

For any questions about the study or about being a participant/informant and please feel free to call Ms Maina on +27713316261 (mobile) during office hours. Alternatively you can contact her via email wairimumm@gmail.com

Your participation in this study is voluntary; you are under no obligation to participate and you have the right to withdraw at any time should you choose to do so.

The study data will be coded so there will be no link to your name. Your identity will not be revealed while the study is being conducted or when the study is reported or published without your explicit consent.. To ensure anonymity and confidentiality, all study data will be collected by Ms. Maina, stored in a secure place, and not shared with any other person without your permission.

I have read this consent form and voluntarily consented to participate in the study.

…….. ……

Signature of participant/informant *Date*

…….... ……

Signature of witness *Date*

I have explained this study to the above subject and sought his/her understanding for informed consent

…….... ……

Signature *Date*

APPENDIX: DC02

INTERVIEW SHEDULE

ADEQUATE SPACES

Questions asked to the community, Non-Profit Organisation representatives and the government representatives.

1. What is seen within the built environment to help the project achieve the initiative's objectives concerning water and sanitation?
2. What new programmes influence adjacent spaces and activities in the projects?
3. How is the transfer of information dealt between the interior/built environment and the natural landscape?

PROJECT'S IMPLEMENTATION PLAN

Questions asked to the government representatives and Non-Profit Organisation representatives.

4. What monitoring and evaluation steps are itemised?
5. Do M&E benchmarks include the management of new built interventions and natural landscapes created?
6. What ways are used to ensure adequate implementation of water access interventions?

IMPACT ASSESSMENT

Questions asked to the community, Non-Profit Organisation representatives and the government representatives.

7. What techniques (networks) are used to assess the influence of socioeconomic aspects related to the water and sanitation projects?
8. Are there any toolboxes (participatory approaches) introduced to the community that assist with the uptake of the initiative?

APPENDIX: DC03

INTERVIEW SHEDULE

DIRECTED IMPACT

Questions asked to business representatives.

9. Were the objectives of the initiative different from the actual impacts of project on the community?

INITIATIVE THINK TANK

Questions asked to business, Non-Profit Organisation representatives and the government representatives.

10. Do the outcomes of the new design interventions in water systems include methods of catchment, storage or release that offer new social or economic modalities?

CONCEPT PLAN

Questions asked to the government representatives.

11. Which regenerative design strategies have been implemented in conjunction with the transition plans?

STEWARDSHIP

Questions asked to business, Non-Profit Organisation representatives and the government representatives.

12. Is custodianship of the initiative given to the community members? If yes, how? If no, why not?

OWNERSHIP LEVELS

Questions asked to the government representative.

13. How is ownership of the project, and initiative represented?
14. What are the roles of the stakeholders involved?

NEW OBJECTS

Questions asked to the community and the government representative.

15. What is the relevance of design intervention to the perceived needs of the community?

USAGE SCHEMATICS

Questions asked to the community and the government representative.

16. What are the acts and activities related to all participants that result in safeguarding design interventions in the project?

PROJECT'S ADAPTATION PLAN

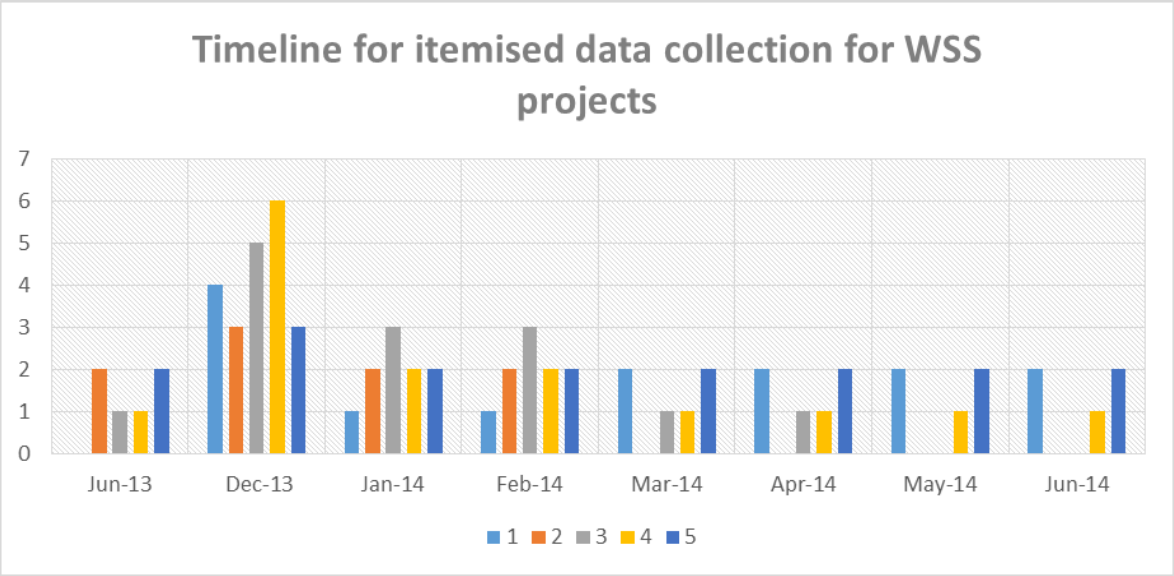
Questions asked to the community and the government representative.

17. When initiating projects, does the concept of stewardship in the buildings occur due to the influence their activities have on the management of water resources?

APPENDIX: DC04

Summary of successive data collection

METHOD		STUDY UNIT	TYPE OF INFORMANT	LOCATION	DATA TYPE	ANALYSIS METHOD
Interview	01	AWSB_2014-001	Internal agent	AWSB, Africa-Re building	Empirical text	Line-by-line; focused coding
Interview	02	AWSB_2014-002	Internal agent	AWSB, Africa-Re building	Empirical text	Line-by-line; focused coding
Interview	03	AWSB_2014-003	Internal agent	AWSB, Africa-Re building	Empirical text	Line-by-line; focused coding
Interview	04	AWSB_2014-004	Internal agent	AWSB, Africa-Re building	Empirical text	Line-by-line; focused coding
Interview	05	AWSB_2014-005	Internal agent	AWSB, Africa-Re building	Empirical text	Line-by-line; focused coding
Interview	06	GIKOMBA_2014-006	Internal agent	At market site	Empirical text	Line-by-line; focused coding
Interview	07	GIKOMBA_2014-007	Internal agent	At market site	Empirical text	Line-by-line; focused coding
Interview	08	HURUMA_2014-008	Internal agent	At site	Empirical text	Line-by-line; focused coding
Interview	09	HURUMA_2014-009	Internal agent	At site	Empirical text	Line-by-line; focused coding
Interview	10	LIMURU_2014-010	External agent	LWC, Limuru Town	Empirical text	Line-by-line; focused coding
Interview	11	LIMURU_2014-011	Internal agent	At Iko-toilet project	Empirical text	Line-by-line; focused coding
Document	12	Evaluation report	Internal agency	AWSB	Non-empirical text	Line-by-line; focused coding
Document	13	Tripartite agreement	Internal agency	AWSB	Non-empirical text	Line-by-line; focused coding
Images	14	Huruma biogas project	Author	Nairobi	Empirical imaging	In-text narratives
Images	15	Gikomba market by Nairobi River	Author	Nairobi	Empirical imaging	In-text narratives
Images	16	UUDT toilet facility at informant's home	Author	Thika	Empirical imaging	In-text narratives
Images	17	Iko-toilet facilities at market and bus-stop	Author	Kiambu	Empirical imaging	In-text narratives
Field notes	18	In all site visits during observations	Author	Nairobi, Thika and Kiambu Counties	Empirical text	Memo writing


Timeline for itemised data collection for WSS projects
7
6
5
4
3
2
1
0
Jun-13
Dec-13
Jan-14
Feb-14
Mar-14
Apr-14
May-14
Jun-14
1
2
3
4
5

APPENDIX DC05

Extract from interview transcript for government representatives

76	**Respondent:**	Hmm, so us, when we have only have a consumer agreement, a consumer-water agreement…
77	**Interviewer:**	No, there's another, a tripartite agreement.
78	**Respondent**	Oh yes, but we have a…
79	**Interviewer:**	Well so that the CBO knows its…
80	**Respondent**	…because us, when we were putting the water there; and you know we're also charging them sewerage…
81	**Interviewer:**	Hmm
82	**Respondent**	…because of the sewerage component. It was a struggle even to know who is supposed to be putting the piping…
83	**Interviewer:**	Is there no paperwork?
84	**Respondent**	…we only helped them because we know who, and where they came from.
85	**Interviewer:**	Hmm
86	**Respondent**	What they were doing, and we also wanted to know that at least the place has one where everybody can go. Yeah, we also saw the need of the people of Limuru.
87	**Interviewer:**	Ah, yeah it really does, I was there for like 15 minutes and there were like eight people.
88	**Respondent**	Yeah, so there was a gap, but all these other bureaucracies, I think those ones have not been taken care of.
89	**Interviewer:**	Yes, there is a lot of communication gaps.
90	**Respondent**	There needs to…something needs to be done.
91	**Interviewer:**	Usually with government projects like those, there meant to have some kind of communique. I don't know if there is, even if it is something that is put up. Where you're told that this project is run by these people, you know?
92	**Respondent**	Yes…
93	**Interviewer:**	You know there's supposed to be some form of ownership, so that you're not charged rent by people who don't own it.
94	**Respondent**	Yes, but did you see anything Athi, any logo?
95	**Interviewer:**	No, nothing. It's only Iko Toilet and some Lions something…
96	**Respondent**	You see nothing. But they were operating under Lions.
97	**Interviewer:**	Ah, but that thing has never been removed.
98	**Respondent**	Ah okay.
99	**Interviewer:**	And now it is written there Iko Toilet, it looks like it belongs to Iko Toilet and I think that's how they're able to collect rent.
100	**Respondent**	Iko Toilet were the contractors, whichever agreement they entered with Athi…
101	**Interviewer:**	But they don't own it.
102	**Respondent**	Yes, but they're the ones who did the work, Athi were providing the materials because I remember that time we were told to go and…

Extract from interview transcript for community representatives (translated from Kikuyu)

01	MM:	*Kwũogwo maĩ marũima kũ? Nigutaha, murataha?* [So where is the water coming from? Are you fetching it?]
02	MJ:	*Mai maya rĩ, nĩ ma Kanjũ.* [Now then this water, it's from the council.]
03	MM:	*Nĩ mahigorĩirwo?* [Was it opened?]
04	MJ:	*Reke njuge nitũhigorĩirwo, no, matihigorĩte mothe.* [Let me say, we have been opened for, but, they have not opened all.]
05	MM:	Oh. *Nĩ ma thĩiniĩ matigĩtiĩ?* [Is it the water inside the building remaining?]
06	MJ:	*No tũhũthĩre thĩiniĩ, no kwendia tũtingiendia.* [We can use the water inside, but selling, we cannot sell.]
07	MM:	*Oh, marĩa muendagia?* [Oh, the one you were selling?]
08	MJ:	*Mm. Tũndo tũtiri tũranyita karia…tũtiri tũra register.* [Yes. Because, we have not yet acquired…we have not yet registered.]
09	MM:	*Oh, ĩĩ hĩndĩ ĩrĩaĩngĩ ndirarĩguku nimanjĩrĩte. nĩmareka maratathi ma CBO.* [Oh, yes the last time I was here, they told me that they are doing the papers for CBO]
10	MJ:	*Ĩĩ* [yes]
11	MM:	*Ĩĩ nĩgũo mũkĩhote kũhigũra* [Yes, so that you are able to open]
12	MJ:	*Ĩĩ* [yes]
13	MM:	*Ĩĩ tũdo mai mariĩ mangĩ mandikitwũ* maritwa *ma mũndũ.* [Yes, because the other water (metre) is written another person's name]
14	MJ:	*Ĩĩ naithuĩ tũkiona nĩ wega tũkĩandĩkithie rithũ…* [yes it is us, we saw that it is good we should write our name]
15	MM:	*Oh*
16	MJ:	*…na rĩu ndĩrĩra kamilika, certificate nĩgethe tũthiĩ tũgeke atĩ nayo* [and now it has not been completed, the certificate so that we can go and do like that with it]
17	MM:	*Kaiĩikaraga atĩa?* [Oh, does it take so long?]
18	MJ:	*Ndiramenya ũhoro ũcio, wa adũ ariĩ mara deal nayo. Tũdo mareka wĩra, nĩomaramenya. Rĩu mũndũ agathiĩ rĩria…* [I don't really know about that, and the people who deal with it. This is because they work, they are the ones who know. Now someone goes when…]
19	MM:	*Oh…rĩria ena kahida?* [oh, when they have time]
20	MJ:	*Ĩĩ, rĩria ena kahida, process ĩno nĩ ndaya* [Yes, when one has time, the process is long]
21	MM:	*Tudo andu aria marakerora mena wĩra?* [Because the people who are managing are also working]
22	MJ:	*mm.* [yes]

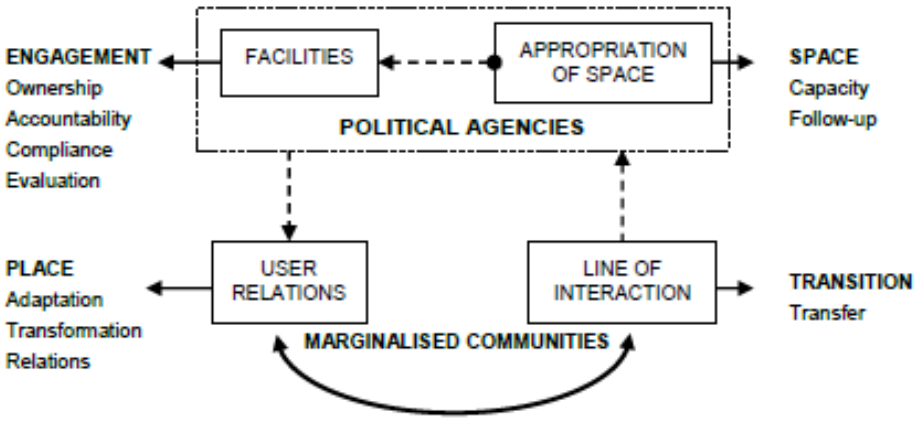
APPENDIX DA01

Extract from interview coding for government representatives

76	Hmm, so us, when we have only have a consumer agreement, a consumer-water agreement…	76. They are not part of the tripartite agreement, which is in direct violation of the documentation of the proposed programme implementation.
78	Oh yes, but we have a…	78. The start of the project does not show that the contractor informed the local government about what was happening on site.
80	…because us, when we were putting the water there; and you know we're also charging them sewerage…	
82	…because of the sewerage component. It was a struggle even to know who is supposed to be putting the piping…	82. There was little or no documentation which explain the issue ownership of the project to stakeholders
84	…we only helped them because we know who, and where they came from.	84. The marginalised community were known to the WSP as they were the ones who brought to light their plight with the "very bad" washroom facility that was there before.
86	What they were doing, and we also wanted to know that at least the place has one where everybody can go. Yeah, we also saw the need of the people of Limuru.	86. The needs of the community, not only the marginalised groups, but also the rest of the population.
88	Yeah, so there was a gap, but all these other bureaucracies, I think those ones have not been taken care of.	88. There's a casual acceptance of the ill-running of the programme. The local government representatives use what is available to provide access to the community at large.
90	There needs to…something needs to be done.	90. Direct approach to dealing with the problems facing the government and the citizens in this area. These programmes are not achieving the desired results.
92	Yes…	
94	Yes, but did you see anything Athi, any logo?	94. Accepting that the government is not given any credit for building the project.
96	You see nothing. But they were operating under Lions.	96. The previous washroom that was built "very badly" was under the funding of a locally active NGO
98	Ah okay.	
100	Iko Toilet were the contractors, whichever agreement they entered with Athi…	100. Knowledge of the current social enterprise which is collecting rent from projects managed by the marginalised communities.
102	Yes, but they're the ones who did the work, Athi were providing the materials because I remember that time we were told to go…	102. Knowledge of where procurement was being done and contracting.

Extract from interview coding for community representatives

	Interview text	Actions and meanings
02	Now then this water, it's from the council.	02. The service is provided by the council under the local government.
04	Let me say, we have been opened for, but, they have not opened all.	04. There's minimal access, which satisfies some but not all the community's needs.
06	We can use the water inside, but selling, we cannot sell.	06. The water tapped into the facility is for use by the people living inside alone.
08	Because, we have not yet acquired…we have not yet registered.	08. The committee is aware of the limitations of not registering the CBO.
10	Yes	
12	Yes	
14	Yes it is us, we saw that it is good we should write our name	14. The committee agreed that abiding by the regulations was in good order.
16	And now it has not been completed, the certificate so that we can go and do like that with it	16. The community is the process of obtaining a CBO certificate
18	I don't really know about that, and the people who deal with it. This is because they work, they are the ones who know. Now someone goes when…	18. Not all members of the committee are privy to the matters pertaining to the documentation of the project.
20	Yes, when one has time, the process is long	20. Government procedure is long and time consuming.
22	Yes	
24	Yes, Karura	24. The natural conservation site where most of the settlements' committee members work
26	Yes, it is not far, *(laughing)* with four wheels, yes, it is not far.	26. The place of work is not far from the settlement.
28	Yes	
30	Water, for drinking, the people who are inside…	30. The water provided by the council is safe for drinking
32	they collect from there	32. There seems to be alternative sources of water supply but not necessarily for drinking.
34	Yes, but in our place, we don't have water for business	34. The main challenge seems to be having water for making revenue.
36	The people here are the ones allowed to use the water, even though there is no metre	36. The illegal connection is for domestic use only.



The data analysis begins at the facilities stage as all case studies visited were already constructed and in use. The section of facilities was seen to fall under the engagement phase outlined in the adapted framework formulated after the initial analysis. The codes emerge from the following data sets of the political agencies. The structures are assigned from data collected from political agencies since they were the gatekeepers and therefore seen as the developers and influencers of organisational structures that bound the WSS programmes and projects. This was followed by the place and modes of transition that can assist in the developing of relevant concepts in the appropriation of space in marginalised settings. The marginalised community's data sets are analysed in reference to the structures that emerge from the political agencies data. This is because it was observed that the communities navigate and do not necessarily have direct influence on the organisational structures within their settings.

Once active coding has been assigned codes, as seen in the model, they are grouped during conceptual memos so as to discuss them through comparative analysis of the various government respondents. Thereafter, analytical memos table showing the process of the study in understanding how the codes relate to each other while working at emerging categories. To further help in developing categories, analytical narratives from the grouping of the previous memos, where data sets from the political agencies are compared, are further compared to the responses from the marginalised community. This results in three main categories emerging from the data:

a) **Agency**
b) **Interaction**
c) **Learning**

Theoretical memos at this stage are used to formulate models from axial coding which looks at the relationships between the two stakeholder groups: political agency and marginalised community. Using questions and models to describe the knowledge outcomes from the narratives, we develop the relationship matrix. This theoretical approach is based on the previous assumptions that architecture defines, regulates and validates our setting. Therefore for the marginalised community to spatially orient themselves, they need to acquire agency, have meaningful interaction and learn from the process to effect change in their setting.

Appendix DA03: Active coding with categories and properties

Taking ownership		
PROJECT PLACEMEMENT	PROJECT DOCUMENTS	OWNERSHIP TRANSFER
Limuru INT10-04_84 “The marginalised community were known to the WSP, as they were the ones who brought to light their plight with the ‘very bad toilets’ that were there before.” Limuru INT10-04_86 “The needs of the community, not only the marginalised groups, but also the rest of the project are catered for.” Limuru INT10-04_113 “Additional washrooms in a public toilet situated in the interior of the rural setting.”	Limuru INT10-04_08 “The WSP knows that the agreements signed include them in the management.” Limuru INT10-04__16 “There is no proof of documentation of the transfer mentioned.” Limuru INT10-04_24 “The main contention in this is the funding during construction, which is insinuated but not proved through any documentation. Thus making the government lose their assets to external agencies.” Limuru INT10-04_82 “There is little to no documentation to attune stakeholders as to the ownership of the project.” Limuru INT10-04_146 “The contractor did not tell the WSO that the toilets were being built by government. No documentation of the program or a database for other stakeholders to refer to is there, if questions arise.” Limuru INT10-04_174 “The documentation shows that the facility pays rent.” Limuru INT10-04_184 “The paperwork that was mentioned, for the documentation during construction does not involve the WSP which is one of the signatories.” Limuru INT10-04_192 “There were not given an agreement to sign even though this is part of the proposal of the program to be launched by the WSB. Limuru INT10-04_220 “There are agreements pending to supply marginalised communities with water and sanitation services.” Limuru INT10-04_231-236 “The documentation process is lacking making it possible that the tracking mentioned is not as well as mentioned. The WSP tried to get a report on the projects, but there was none. During the six months there I couldn’t find one either. The only paperwork there is for procurement and finding, but no actual construction process documents.” Limuru INT10-04_260 “They are not able to check documentation from government institutions.”	Limuru INT10-04_68 “There’s no handing over even though this is a main part of the implementation of the program.” Limuru INT10-04_162 “The local WSP made an effort to clear up the disagreement of ownership, but received no assistance from the WSB. The local government office is also aware of the problem of ownership, but is unable to do anything about it.” Limuru INT10-04_178 “A clear problem with the ownership and control of the project and facilities that should rightly be under the local government.” Limuru INT10-04_238 “The ownership of the facility is still in question.” Limuru INT10-04_268 “The WSP is still unhappy about private people branding the public asset.” Limuru INT10-04_270 “The WSB is not taking responsibility that private people are taking control of their facilities without the knowledge of the communities.” Limuru INT10-04_282 “The WSB said that handover is in the process, which is not true.”

	Limuru INT10-04_284 “The WSB has tried to shift responsibility to the local WSP, with no further documentation to assist them.”	
	Huruma INT08-03_18 Not all members of the committee are privy to the documentation of the project. Huruma INT08-03_80-82 There has been many handovers to more than one group.	

Being accountable for transparency			
INSTRUCTIONS FOR ACCOUNTABILITY	LEVELS OF ACCOUNTABILITY	EVIDENCE OF ACCOUNTABILITY	INTEGRATION FOR TRANSPARENCY
			Gikomba INT07-02_16 This seems to have been replaced by the KVV which is now disbanded for lack of relevance. Gikomba INT07-02_24 There’s a sense of comradeship with people who attended the NYS. The mention of discipline and acceptance of a standardizing community service program was a good start to governance.
UDDT INT01-01 Distancing of government institution from service provision. No definitive existence of working program that is being currently implemented. Meaning there was no pilot project to ascertain milestones, strategies, and tactics.			UDDT INT01-01 Time constraints. The ‘good practices’ of government institutions should be service to citizens, which severely lacking in water and sanitation programs run by AWSB
UDDT INT05-01 This means it’s a means of control not accountability.	UDDT INT05-01 Cultural differences should be celebrated not repressed and pushed aside. These differences are what give rise to innovative ideas to solve complex problems.	UDDT INT05-01 Proof of community audits or government audits of these projects is lacking.	
Limuru INT02-04_21 This lack of clear objectives of the partnership causes them to be unaccountable for their inactivity. Limuru INT02-04_37 Flow of responsibility Limuru INT02-04_71 Control of the resources that are used to perform the job are important. Limuru INT02-04_85 Flow of responsibility does not extend to all actors within the program.	Limuru INT02-04_129 The government institution is not aware of rent being charged for the facility they have built. Limuru INT02-04_143 Control is mainly a challenge due to conflicts arising from higher management involving themselves in the allocation of project sectors.	Limuru INT02-04_23 The evaluation of funds used is not consistent as changes are made without prior agreement causing rifts in the process.	

Successive samples coding

Limuru INT03-04 The community forms groups that represents them but the power still lies at government levels because there's no accountability to the community members of action taken on their behalf by agencies.	Limuru INT03-04 Here the participation is at consultation level, which means all they do is get to know what is going on. Big-brother attitude is assumed and the relationship assumes a top-bottom approach. The government is not accountable to the members and therefore decisions are made without affirmative action.		Limuru INT03-04 Additional information collected through adjacent sectors of health and social services. Informants were all government officers and liaisons of government service providers. The community is running the project but have no power over their assets.
Limuru INT04-04_62 Similarly, a lack of guidelines proved to add to the problem of unsubstantiated resource deficit and accountability. Limuru INT04-04_106 The local government takes on citizen-level responsibilities of service delivery. Limuru INT04-04_193 There's no transparency, which is a result of accountability.	Limuru INT04-04_205 Objectives of the WSB brings accountability to the main government funding purposes. This is not community based.		Limuru INT04-04_64 This caused the local government to assume control of the projects to ensure optimum management. Limuru INT04-04_66 This approach of local government intervention worked. Limuru INT04-04_92 An all-inclusive program is being placed to include stations in government that are easily accessible to the citizens.
Limuru INT10-04_88 There's a casual acceptance of the ill-running of the program. The local government representatives use what is available to give access to the community at large. Limuru INT10-04_226 The water and sanitation facility bypassed requests made by the WSP	Limuru INT10-04_30 The main body in charge of the program should be held responsible for any mishaps that happen. Limuru INT10-04_230 The mention that due-process was not followed suggests that accountability is not done in the program. Limuru INT10-04_264 The WSP believes that the higher management is not aware of the mismanagement of the program.	Limuru INT10-04_12 No responsibility for the present problem is being accepted by the WSP.	Limuru INT10-04_60 Community members do not see the WSP as a means to bring up their grievances to government representatives. Limuru INT10-04_64 Community organisations have been told about the people who work at the local WSP, who are meant to be part of the program. Limuru INT10-04_94 Accepting that the government is not given any credit for building the project. Limuru INT10-04_130 The facilities are not included in their directive. Limuru INT10-04_148 Since the main contractor refused to tell who the main financier is, the WSP didn't press the matter. Limuru INT10-04_172 They know what is being done, but nothing can be done about it.

Defining compliance in the programs		
BASIS FOR PROJECT GUIDELINES	PROCESS TO ENSURE COMPLIANCE	DESIGN INTERVENTIONS FOR COMPLIANCE
UDDT INT01-01 Using a business model in a context where running, medium to big business, is not done a lot.		UDDT INT01-01 Dealing with run-off water is something that should be planned and dealt with by the County Council. As a government institution, a central place for waste should be zoned away from dwelling spaces.
Limuru INT03-04 Holistic approach to problem solving (design thinking).		
Limuru INT04-04_76 The social aspect directly contributes to the future survival of the projects and therefore the program, if not properly executed. Limuru INT04-04_129 Taking control of the business side of the projects that was not done at the onset of the program. Limuru INT04-04_227 This stems from the lack of managerial skills within the program and in the project themselves.	Limuru INT04-04 _132 Having sectors to look at service for marginalised groups. Limuru INT04-04_184 Sanitation to be a national driver Limuru INT04-04_185 It should be driven from the grassroots level	Limuru INT04-04_80 A guideline for managerial (construction level) responsibilities between all stakeholders. Limuru INT04-04_219 The design does not include facilities that are inclusive for children. Limuru INT04-04_231 This alludes to the social aspects.
Limuru INT04-10_206 A new account relation to the new provision under the built facility is not taken into account due to lack of paperwork.		Limuru INT04-10_36 The running of the facility by using the 'disabled group' which is seen to help them.

Performing evaluation		
EFFICIENCY	PROPERTIES OF EVALUATION	EVALUATION PROGRAM & IMPACT OF EVALUATION
	UDDT INT01-01 Lacklustre; low interest levels in the apparent community gains from research output.	
UDDT INT05-01 Is this money enough for all these expected outcomes?		UDDT INT05-01 How is acceptance and use of the facility measured and is there data that accounts for community perceptions of the facility?
Limuru INT02-04_87 If one sector is inefficient, then the program will be a failure. Anger over insufficient work being done to make sure that the projects run efficiently.		Limuru INT02-04_29 A rating of performance would have brought to light this problem before the project stalled. Limuru INT02-04_43 There needs to be units of assessment. Limuru INT02-04_113 This has left a loophole for others to take credit because no evidence can be found to prove otherwise on the ground. Limuru INT02-04_127 It seems the social enterprise has had similar problems of divulging records to

		government representatives involved in the program.
	Limuru INT03-04_how are the minimal charges calculated, and by whom? The rating of best practices seem to be on aesthetics and volume of activities.	Limuru INT03-04_Means of monitory control. Assertion of best practices but there are no formal means of implementing the project so not sure what is seen as indicators of a good example. After sales service.
		Limuru INT04-04_108 pre-implementation plans within the program, a test before deployment.
		Limuru INT10-04_106 The local government was not involved with the construction and implementation of the project. This makes it difficult to "manage the downstream of the water and sanitation program (Muiruri).

Enacting transformation		
OLD WATER RESOURCE	INSTRUCTIONS FOR TRANSFORMATION	PRINCIPLES OF TRANSFORMATION IN NEW CONTEXTS
	UDDT INT01-01 Lack of concentration on particular characteristics of a site and dealing with the things that emerge within the context.	
	UDDT INT05-01 Cultural differences should be celebrated not repressed and pushed aside. These differences are what give rise to innovative ideas to solve complex problems.	UDDT INT05-01 The learn how to navigate the project, not the program. Lack of compensation due to non-ownership of land and assets. Cultural awareness in the settings where these initiatives are started is lacking, making the concepts irrelevant to the communities.
		Limuru INT02-04_11 The government institution is in charge of the building materials and the contractor who provides the materials for the building works. Limuru INT02-04_13 Management of the building site is given to the consultant.
		Limuru INT03-04 Introduction of a financial support system by the government. The finances are given to communities outside the jurisdiction of Nairobi Water Company.
Limuru INT04-04_26 This informal community remains unplanned and with a high number of marginalised community groups, due to age, gender, education levels etc.	Limuru INT04-04_28 The programs were not made to initiate change, but for documentation and anthropological purposes.	

	Limuru INT10-04_108 The local government representative feels that the fact that the program is not working well is a matter to be dealt with.	

Dealing with transfer			
METHODS OF TRANSFER	UNITS OF RESOURCE TRANSFER	POSITIONING	UPTAKE MEASURES AND ITS IMPACT
Gikomba INT07-01_49 The representatives of the local government are actively involved in the improvements being done in their community.			
UDDT INT01-01 Community engagement and transfer of information.	UDDT INT01-01 The profit margins are too low to be an incentive to further the project or keep it running as is.	UDDT INT01-01 Revisiting the context for clarification of community needs.	UDDT INT01-01 Influence of main instigator of the program of their detailed outputs and intended outcomes. Not willing to have concrete solutions for the in-context problems.
UDDT INT05-01 Transfer of information about intended projects is informal.		UDDT INT05-01 The communities do not understand the disparities that cause one project to be funded and another to be left to die-off.	
			Limuru INT02-04_19 The responsibility for completion is not thorough and shows a lack of uptake of duties. Limuru INT02-04_41 Uptake of duties within the institutions to ensure that the program runs well.
	Limuru INT03-04 The institution views finances as the only tangible resource. Financial assistance sets the plane for what assistance can be offered.		Limuru INT03-04 Sustainability here is based on running and relevance of the project to the community.
		Limuru INT04-04_212 The solution is not necessarily to offer less charges but to form a program that absorbs this costs to be included in local government expenditure. Limuru INT04-04_213 Making bulk payments is not a solution agreeable with low-income families, but a way have personal free toilets is a solution.	Limuru INT04-04_208 So do the male members, who I observed use the landscape to pee? Limuru INT04-04_209 For children it is a health risk to defecate outside or in papers (flying toilets). Limuru INT04-04_211 The marginalised groups have scarce disposal income to use on basic needs for their family.
		Limuru INT10-04_222 There is a large need to supply water and sanitation services close	Limuru INT10-04_198 The WSP takes no credit for what is happening at the facilities.

		to commercial sectors in the rural area.	Limuru INT10-04_199 The WSP made an effort to clear up their role in the agreement mentioned by external stakeholders.

Adapting to changing contexts			
CHANGE	JOINT COMPOSITION	IMPROVED PROCESS	POLICY INTERVENTION FOR LOCALITY IMPROVEMENTS
	Gikomba INT07-01 The representatives of the local government are actively involved in the improvements being done in their community		Gikomba INT07-01 The new means of government has a chance to include the wider communities and provide a means of stewardship.
			UDDT INT01-01 The level of service to tax paying citizen is wanting as they are expected to maintain and service their environment; what then is the government's responsibility to the citizen?
			UDDT INT05-01 Policy being a plan or course of action as a government, political party or business, intended to influence and determine, decisions, actions and other matters.
Limuru INT02-04_77 Policy intervention affects the rules of engagement within the structure of the program infusing new project contracts.			
Limuru INT03-04 Who manages transitional changes of projects, to deal with technical, political or environmental changes?			Limuru INT03-04 Health and wellbeing of the community is taken into account. Is the water access treated? Community asset installed in terms of water source point. Additional services brought into the community e.g. electricity. Zoning using policy directives. Present changes linked to policy reforms by government.
			Limuru INT04-04_20 These projects ran without consultation from the arm of government of meeting citizens' need for water and sanitation. Limuru INT04-04_90 Due to changing reforms in government after devolution, the status of this program remains in questions. Limuru INT04-04_102 This is

			more policies and regulations that can be understood by personnel but far removed from the marginalised groups. Limuru INT04-04_138 The need to make revenue has superseded the need to look to the community's social aspects when dealing with service delivery. Limuru INT04-04_171 Resources due to mandatory regulations. Limuru INT04-04_179 This is a big assumption for someone who has apparently taken part in writing informal settlement policies.

Building social relations			
INTERACTION	OUTCOME OF GROUPS	NEW PARTNERSHIPS	EMERGING PROGRAMS AND THEIR IMPACTS
UDDT INT01-01 Community participation without proper outlines of parameters and objectives.			UDDT INT01-01 Influence of the project is minimal.
		UDDT INT05-01 There seems to be a division between who really runs the projects, as two distinct entities cannot manage the same facility. There's a possibility for future partnerships with the government institutions.	UDDT INT05-01 No green-belt planned for the setting even ones bound to the built environment. Environmental significance is minimal and not added as a primary function of the initiative.
		Limuru INT02-04_51 Duties of what each person's responsibility is, is not integrated. Limuru INT02-04_141 External stakeholders are expected to some in and assist in an internal stakeholder issue.	
		Limuru INT03-04 Tokenism level of partnership according to Arstein (1968).	
Limuru INT04-04_118 The staff is not sufficient to run a training aspect within the program Limuru INT04-04_121 Lack of shared resources and information, which could benefit from the PUP approach.		Limuru INT04-04_83 The funding is distributed by the government, but comes from foreign governments. Although it is clear if these are loans or grants. Limuru INT04-04_147 Diversify the hierarchies within the management levels. Limuru INT04-04_150 More alluding to the introduction of guidelines and frameworks for	Limuru INT04-04_226 There are major gaps in the program. Limuru INT04-04_234 New relationships with regulated guidelines to ensure efficient process.

		management. Limuru INT04-04_167 Running a test stage of this new relationship with international agencies. Limuru INT04-04_168 Partnership and networking. Limuru INT04-04_170 Building new relationships. Limuru INT04-04_223 The maintenance of the facility falls to the community and the local government, this is indeed a new forum especially as the local government is newly formed.	
Limuru INT10-04_02 They are aware of the implementation plans done by AWSB, but do not mention their role in it. Limuru INT10-04_28 An awareness of a lack of a proper program management, and the roles and responsibilities of each stakeholder. Limuru INT10-04_176 After there was no confirmation from the CBO running the projects, the representatives from the WSP felt that there was nothing more to do.		Limuru INT10-04_76 They are part of the tripartite agreement, which is in direct violation of the documentation of the proposed site. Limuru INT10-04_144 There's proof of many stakeholders getting involved in a seemingly small project that would not need two contractors. Why the rotation of people in the project? Limuru INT10-04_187 The WSP is aware of the inconsistency that involves the process of project concept, development and implementation. All stakeholders should be involved to make sure the program is efficient.	Limuru INT10-04_16 Not aware that the facility are a business unit for external agencies. Limuru INT10-04_68 She made inquiries about the ingoing branding of public assets. The WSB were also informed, but no interest was shown by the initiator of the program. Limuru INT10-04_90 Direct approach to dealing with the problems facing the government and citizens in this area. These programs are not making the impact that is needed.

Building community through capacities			
BUILDING CAPACITIES	LEARNING PROGRAMS	FEEDBACK	COMMUNITY CAPABILITIES THROUGH LEARNING CAPACITIES
UDDT INT01-01 Detailing community capacity and potential.		UDDT INT01-01 Input by stakeholders taken on board. Mapping of facilities is done already in the programs like 'Map Kibera'	UDDT INT01-01 Capacity building of the community members is not apparent. Putting down people who live in informal settlements because of their circumstances and assuming they're inadequate.
UDDT INT05-01 In the event that these projects are done in other settlements, payment is offered to those that build structures for water and sanitation services. Using the locals without	UDDT INT05-01 There's a link between the project that is initialized by government and training programs that involve enhanced partnership. Does this tally with community	UDDT INT05-01 Additional mapping is done by NGOs within the setting to include additional pertinent information.	UDDT INT05-01 This is a great assumption on the part of the government and NGOs that the community are incapable of actualizing their needs.

offering remittance is not far. The community are still used without remittance.	experiences?		
	Limuru INT02-04_81 …on the ground reality of learning programs of water and sanitation projects.	Limuru INT02-04_75 It does not work as efficiently as it should Limuru INT02-04_151 An expectation of positive results that can assist curb this problem of grabbing government projects.	Limuru INT02-04_99 This is a contentious issue as the community are used as labour to account for their participation.
	Limuru INT03-04 citizen participatory approach. Lack of implementation of community capacity building programs within counties. Are members given the required training during community engagement to ascertain their desired outcomes? The point is not help, but to enable the community members through building capacities using training programs and transferring ownership of assets. Are these training programs?	Limuru INT03-04 Record keeping is assumed, meaning they might be paper formats but no soft copy back-ups.	
Limuru INT04-04_78 This social aspect directly contributes to the future survival of the projects and therefore the program, if not properly executed. Limuru INT04-04_164 Social development given to separate agencies. Limuru INT04-04_176 Capacity building is seen to be the premise of social organisations.	Limuru INT04-04_32 The re-organisation included learning from existing bodies of management and providing financial support. Limuru INT04-04_110 Instructions that stipulate properties of a certified CBO to run the projects. Limuru INT04-04_131 Training to be done at government level especially due to the cost it could incur. Limuru INT04-04_158;4 Training at fore Limuru INT04-04_161 This needs a certain education level to access.		Limuru INT04-04_34 Due to this external translation of grassroots needs, distortion occurred.
Limuru INT10-04_150. The project is not treated as a community solution that would benefit from training or helping the local government.	Limuru INT10-04_48 This is one of the aspects of the water and sanitation program. To give the community a chance to have a socioeconomic outlet within the facility.		Limuru INT10-04_34 The marginalised community is associated with the current group due to their physical challenges. The site did not indicate the need, but the state of the current sanitation facility which was ‘very bad.’

			Limuru INT10-04_154 Therefore the marginalised community loses the opportunity to have any growth through the help of local government.

Performing follow-up assessments			
INSTRUCTIONS FOR THE PROJECT LIFE CYCLE	DISSEMINATIED INFORMATION OF THE PROJECT LIFE CYCLE	UP-KEEP OF FACILITY	DEVELOPMENT OF FACILITY AND EXPANSION OF THE BUILDING PROGRAM
UDDT INT01-01 Knowledge transfer		UDDT INT01-01 Communities have difficulty up-keeping the facility.	
Limuru INT02-04_39 Instruction of the project life is done through the legal office who keeps tabs on the follow-up.			
Limuru INT04-04_30 The release of the program hinged on their personal experiences and not on the documentation of others. Limuru INT04-04_88 Future management responsibilities still recurring. Limuru INT04-04_159 Diversifying the hierarchies within the levels of funding requisitions to foreign aid donors. Limuru INT04-04_173 Slow release of funds might be that there are missing milestones to ensure flow. Limuru INT04-04_194 They are concerned with working at a low cost, but low according to who? The price of 4Million still seems a bit high to me. Limuru INT04-04_195 Lifecycle analysis of the building process including death and regeneration of the urban fabric created.			
Limuru INT10-04_158 The local government representatives were not informed of project parameters.			

APPENDIX DA04: Conceptual memos: comparing data between government respondents and marginalised communities using focused coding

Program representation from stakeholder groups

POLITICAL AGENCY	MARGINALISED COMMUNITY
Program identification of stakeholders "So we're only talking about casual…they are not KKV" (Gikomba INT07-01). "So we didn't bring in people from afar…we employ just those people who are here" (Gikomba INT06). The community on the ground represent individuals who live in the informal settlement known for its economic hardships.	*Influence of community representatives in the programme* "There's the labour policy; you cannot be employed for more than six months continuously…this is why you see the ones from KKV, casuals we had at the beginning, there were not reinstated" (Gikomba INT06-01). The community members have no influence in the programme. They are just passive actors appointed by the political agency.
Resources assigned to the program "We launch a report to say…this is where we're going to source the money... we introduce the project we want to do in the community" (UDDT INT01-02). Financial resources are controlled by the Water Service Board (WSB). The same applies to human resources used to implement the programme. This resouces are all employees of the same WSB.	*Assigning roles to community participants* "Then they have **ownership** of the project based in if its labour they're providing" (UDDT INT01-02). "If its contribution, what kind of contribution we need from them…to do manual jobs in the areas…and you see that builds **ownership**, they feel they're a part of that project" (UDDT INT05-02). The community are seen as a labour force working in the project. They have no managerial positions and their responsibilities are outlined by the political agency.

1. Memo on: Controlling allocation program resources

The programme implemented at grassroots levels *employs* local community which does not necessarily signify active participation. The political agency seems to demarcate the role of the marginalised groups as one that has preconceived responsibilities. The same is seen by other government institutions that act as the political agency. Here, resources are identified and allocated without the participation of the community in the setting. Therefore project placement and documenting are done prior to going to the setting. If the political agency then views this process as "what [they] want to do in the community" (UDDT INT01-02), then transfer of ownership is not apparent. By controlling the process and *telling* the community, as opposed to *engaging* with them, this affects the advancements in the programme.

The scope of the programme is therefore seen in the highlighted properties: project placement, documenting, transfer of ownership, and advancements. By placing markers within the programme, the political agency controls the directive used to implement projects, and select the stakeholders for the projects

Appropriating space for project implementation

POLITICAL AGENCY	MARGINALISED COMMUNITY
Appropriating physical space for the project The political agency uses their resource and those of the NGOs to decide which area in the setting is used. "They [NGOs] already know the kind of space we can use in that particular community" (UDDT INT05-02).	*Community involvement in appropriating physical space* "Yes, along the river…this riparian area…we agree with them [NGOs and Social Enterprises] and they set up at a particular place" (Gikomba INT06-01). All

	appropriation within marginalised setting is done by the political agency.
Social space The political agency wishes to change social practices for the programme to work. “Those cultural differences that we get…what do you do with them? You convince them that the world has changed” (UDDT INT05-02).	*Social space* “So now…the traders are quiet just the way they were asked to move…But…we didn’t have that good relation because they were seeing we are evicting them” (UDDT INT05-02).

2. Memo on: Mental separation of space in marginalised settings

Political agency seems to bully the marginalised community to compliance by stating that NGOs knew the kind of space they would prefer to use. Therefore the marginalised groups do not agree but are told where to relocate so as to implement the WSS projects. Further alienation from the process is seen in the disregard shown to them, by convincing them that the world has changed thereby forcing them to give up their social practices in order to benefit from the projects.

Modified water and sanitation access for marginalised settings

POLITICAL AGENCY	**MARGINALISED COMMUNITY**
Project techniques implemented at site “Some of them were born here, other were raised here. So we didn’t bring in people from afar, and bring them here” (Gikomba INT07_21).	*Influence of marginalised groups on new tech projects.* “So we can continue with them, we employ them for three months on a renewable contract” (Gikomba INT06_07).
Processes initiating new facilities “Hmm…like now we have this program called ‘Fresh Life’ for these toilets (Gikomba INT06_155).” “And if you look, like a toilet such as that one, it is serving the local community” (Gikomba INT06_159).	*The role of marginalised communities in new facilities* “We agree with them [Fresh Life] and they set up at a particular place” (Gikomba INT06_158).

3. Memo on: Alternative WSS services in marginalised settings

Change in the marginalised setting is observed in the adoption of low-technologies to deal with sludge waste disposal. This new principle conveys additional steps in the sanitation process. All these steps are controlled by political agencies in the marginalised setting.

Successive sampling: Phase two

Community Participatory Approach (CPA) as a tool for effective project evaluation

POLITICAL AGENCY	MARGINALISED COMMUNITY
Project management of implemented facilities "The ownership [of the ablution blocks] was almost shared between the NGOs and the communities, and the NGO would be Uncle Sam…where they would actually control the [ablution] blocks (Limuru INT04-04). "The procurement was not in the right manner…it was left to me. I reviewed it, and the costs were within the cost… so I can take control" (Limuru INT02-04). "Well…I think there was a financing arrangement between Athi and the contractor. I think [when] it was built then" (Limuru INT10-04).	*The role of CBOs in running projects in their setting.* "Yes we rent, so sometimes I don't have a clear figure of Athi…now the other question is, where does the council comes in? You know what Iko did…they're the ones who wrote the proposal to the council, then they just look for the money to build the toilets, that's what the council did" (Limuru INT11-04). "We didn't know that when we generate money it should become a CBO" (Huruma INT08-03). "We cannot sell water, because we have not yet…registered" (Huruma INT09-03).
Being accountable for rendered services through the WSS program "Because we did informal settlement policies…we realized there were so many people unserved. This is in-spite of so much money being sunk in Kibera" (Limuru INT04-04). "This is something that should be sorted by the Limuru guys… when people realized later [that there was a problem with the projects], they started running away" Limuru INT02-04). "Rent [the problem arising from in the projects]? I think this is something you need to check up with Athi" (Limuru INT10-04).	*The CBO/SHG's ability to enforce the political agency's responsibility for adequate and reliable WSS service* "You know…with Iko-Toilet it is very complicated. The concept is very unclear to many people, in fact we are at war with Athi because the water bill is so high… But then, why do I pay Iko then? They say they're recovering their costs" (Limuru INT11-04). "The city council came…to cut the connection. We told them they shouldn't cut it, because they are not the ones who installed it anyway" (Huruma INT08-03).
Evaluating the suitability of the WSS program in service provision "Yet if you went to the actual structures they were at most…doing interviews and documenting miseries of people, but not actually not giving then the infrastructure… Where they [the local WSP] did not intervene some of these ablution blocks have not been completed" (Limuru INT04-04). "So under what circumstances these ones were financed by Athi, I don't know…Actually, there's no report you're going to get in Athi between those two projects" (Limuru INT10-04).	*Community assessments of service provision by government institutions.* "But you know, you should cut it because you didn't provide us with a metre" (Huruma INT08-03). "I was told by another guy who used to be there…he told me that most of the material came from AWSB then… I couldn't understand" (Limuru INT11-04). "The toilet itself, it satisfies…with a lot of war" (Limuru INT11-04).

4. Memo on: The lost potential of CPA as a tool for effective project evaluation

The new government-community partnerships were initiative because the previous community partnerships done by the NGOs were seen to be unbalanced. The government institutions took control of the process, removed the community representatives and installed a contractor as the point of contact at the community level. This approach sparked off problems, resulting in mismanagement with no-one claiming responsibility. Responses from one respondent seems contradictory, when he/he claims that at one time "ownership was almost shared between the NGOs and the community" while at the other end "the [NGOs]…were documenting miseries, but not actually giving them [the marginalised

community] the infrastructure." In the end, even the local government on the ground has no idea what is on and assures that there's no report you're going to get…between those two projects."

Building resilient communities through increased capacities

POLITICAL AGENCY	MARGINALISED COMMUNITY
Development of legal agreement to obtain compliance within the projects "What am saying, there was a contract between Athi and Eco-Tact, but that contract was contested because it wasn't straight. It was like we were losing the facility" (Limuru INT04-04). No, there has never been a handing-over process, either between us or the council. Well, they have never handed over [the ablution block]. Because I asked to who –are they paying rent], they even brought me the chairman. Because the Town Clerk is not aware, and in Athi I was told, I don't know what, so… there was supposed to be a tripartite agreement between Athi, council and then the Iko-Toilet or us. You know Athi could finish with them and forward them [ablution blocks] to us "(Limuru INT10-04).	*Tools used to ensure CBO/SHG comply with regulations enacted by the political agency.* "There's a very big problem because the toilet, you didn't give the disabled you gave another NGO… me, I don't have an agreement with them [AWSB], they don't even know me" (Limuru INT11-04).
Increasing community capacities to ensure relevance of the implementation processes to the CBO/SHG "So you find in some of the bio-centres they are being run by Umande Trust… the partnerships, we want to ask for proposals with our NGOs in our areas so that they can take the soft issues of the capacity building for sanitation" (Limuru INT04-04). "So, the local council our municipality was not also [involved], because it was supposed to be a joint venture between the council, Athi and the guy…something needs to be done" (Limuru INT10-04).	*Additional aspects in the WSS program that are geared toward increase community capabilities* "I am fighting for their rights [the disabled]. It's good because my federation is coming [along]" (Limuru INT11-04). "The project it was introduced by these people [called] Umande…now that was as far [draining water from the biogas chamber] as we could take it [an attempt to fix the biogas emission that has stopped] as a community" (Huruma INT08-03).
Performing training to build both communities' and political agencies' capacities in the programme. "The consultancy, there is a component of the social aspect…we are also able to identify the communities, the challenge is that we are not able to track downstream, what will happen in the future. It is important to follow-up on training, [though] we might not be able to it as AWSB" (Limuru INT04-04). "Because even when we came on board, we were just seeing, and we came to know [later] when someone came from Athi to some inspection…yes, we really didn't know" (Limuru INT10-04).	*Learning programmes that ensure growth and sustainability of the program.* "We have never gone for any training, [even though] they recommend ours to others because it is best run. It is also good because it changes the community's attitude…towards the disabled" (Limuru INT11-04). "You know the way we have closed this toilet here, it's very risky to the citizens of this community" (Huruma INT08-03). "The toilets, we were not shown [how they operate]. The Umande people have come in the past… I didn't understand what they investigated or what they thought of it. Because at the moment they have stayed back for a very long time without coming back" (Huruma INT09-03).

5. Memo on: Building resiliency in marginalised communities

The contract signed between the social enterprise and the government institution was flawed, especially since one of the signatories from the local government was omitted. The evaluation process becomes complex as organisations not included in the agreement are commissioned to deal with soft issues in the community, such as building capacities. The

local government by virtue of being on the ground, would serve as a more suitable means of ensuring capacity building but they are excluded from the initial process. The local government can therefore not effectively evaluate the programme as they “come to know later” (Limuru INT10-04) what is happening.

6. **Memo on: Asserting community roles in WSS Programmes**

In both instances of the programme implementation in the separate settings, labour seems to be a means of ensuring transfer of ownership. This measurement does not really equate to transfer, as other labourers would have required payment, which is not the case with the marginalised groups. The political agency positions itself as the management entity in the programme, stripping the community of any sense of custody over the project..

7. **Memo on: Disassociation of marginalised groups in site evaluation of WSS projects**

The new WSS programme has changed the way the marginalised community interact with their space. By introducing laws where the marginalised groups are forcefully removed while allowing social enterprises to set up sanitation services in the space, the government has double standards when dealing with the appropriation of space. The marginalised groups retreat, disassociating themselves with any new projects in their setting.

8. **Memo on: Living outside the urban fabric emerging in marginalised settings**

The projects initiated in the marginalised setting are managed using formalised processes that do not mirror other interactions in the community. In one case, paperwork generated to assist the marginalised group was lost because appropriate guidelines for the new partnerships was missing. Consequently, community members were referred from one groups to another without any assistance. The marginalised groups that emerge in informal settlements are fragile, especially if left without set modes of interaction to improve relations.

Successive samples coding

APPENDIX DA05: DOCUMENT ANALYSIS

DEFINITIONS

ACTION CODING

The following words and expressions have the following meanings:

a. “Act” means the Water Act (Act No. 8 of 2002).

b. “AWSB” means Athi Water Services Board.

c. “CBO” means the Community Based Organisation formed by the beneficiary community as provided in this agreement.

d. “Customer Tarrif” means the approved tariff charged to customers.

e. “Good Industry Practice” means the exercise of that degree of skill, diligence, prudence and foresight which would reasonably be expected from a skilled, experienced and prudent person engaged in the provision of water services.

09-12. The language is difficult to understand, especially if one is not in the law profession

f. “Handover” means the vesting of possession of the project in the hands of the CBO to operate, manage and maintain in trust for the beneficiary community as provided in this agreement.

g. “Maintain” means those activities which are necessary, using good industry practice, to prolong the life of an asset, ensure its reliability and ensure the asset performs the function for which it is intended.

16- 19. This insinuates that one understands the previous statement.

h. :Ablution Block” means all the movable and immovable assets set out in **Schedule C** hereto together with associated operations for delivery of the water.

i. “Schedule” means attachments to this agreement referred to herein.

23-24. There are no schedules attached to the document, which means the CBO might not have them either.

j. “WSP” means the appointed Water Service Provider within whose service area the project is situated.

SCHEDULES

Schedule A: Parties’ representatives and addresses

Successive samples coding

Schedule B: CBO's constitution

Schedule C: Description of the ablution block

Schedule D: Reporting framework

Schedule E: Financial arrangements

Schedule F: Business

Schedule G: Memorandum Of Understanding

ACTION CODING

THIS AGREEMENT is made this 21st day of May 2010 ***between***:

1. ***Heshima Disabled Group*** (hereinafter referred to as the **"CBO"**) of the one part,
2. ***Umande Trust*** (hereinafter referred to as the **"SO"**), of the second part,
3. ***Athi Water Services Board*** (hereinafter referred to as **"AWSB"**) of the third part, and
4. ***Nairobi Water and Sewerage Company*** (hereinafter referred to as **"WSP"**) of the fourth part.

WHEREAS:

1. AWSB has using budgetary allocations made to it by whom??? and/or funds sourced from donors constructed the ablution block described in **Schedule C** hereto, and;

47. They should be honest about statements, or not mention anything about

2. The community residing within the ablution block has formed the CBO to operate, manage and maintain the ablution block.

49. A community cannot reside in a washroom facility.

NOW THE PARTIES PERETO AGREE AS FOLLOWS:

1. Intention of the parties

The intention of the parties herein is to provide for:

i. The terms and conditions for the handover of the ablution block to the CBO;

54 -55. The CBO get ownership of the asset

ii. The provision of bulk water supply to the ablution block;

iii. The license to the CBO to provide water services;

iv. A reporting framework by the CBO to AWSB;

58. The CBO is expected to tell the WSB how the management of the facility is going on.

v. Financial arrangements for utilisation of revenues from the ablution block;

vi. Powers of inspection and supervision by AWSB.

2. Effective date

This agreement takes effect immediately upon the execution hereof.

Successive samples coding

3. Conditions precedent

i. That the CBO is duly constituted and registered under Kenyan Law.

ii. That the ablution block is certified complete and operational

4. Ownership of the ablution block

i. The ablution block is co-owned by the CBO and AWSB according to stakeholders' contributions to the total construction costs as described in **Schedule C** hereto.

ii. The rights of ownership shall be deemed to vest in both parties notwithstanding any step that may be remaining to perfect any instrument of title thereof.

5. Bulk water supply

The WSP shall supply water in bulk to the CBO at the rate of **Kshs.___** or such other rate as may be gazetted from time to time, and the CBO shall pay the amount due on the bulk meter readings monthly as billed by the WSP from time to time.

6. Handover

AWSB agrees to handover the ablution block to the CBO to operate, manage and maintain, subject to the following:

i. That the CBO shall provide sanitation services and supply portable water from the ablution block in accordance with Good Industry Practices, the relevant sectorial standards and any guidelines issued by AWSB from time to time.

ii. That the CBO only charges customers the approved tariff as provided in **Schedule E** hereto.

iii. That the CBO provides monthly and quarterly reports as specified in **Schedule D.**

iv. That the CBO keeps proper books of accounts and account for all revenues as set out in this agreement.

66-67. They expect members of the marginalised community to have information that is not readily available.

70-73. The ownership is divided between the government institution and the marginalised community

74-76. This means that the marginalised communities are protected in their involvement in the

78-81. The WSP is only meant to provide services not take part in management of the facility.

83-84. The main stakeholders who take active participation are WSB and the CBO.

86-87. Does the WSP provide any other type of water?

92. Didn't find any.

94. How do the marginalised communities get access to an accountant, especially if the project is done to improve

v. That the CBO at all times permits AWSB to inspect and/or supervise its operations as set out in this agreement.

vi. That the CBO does not spend the revenue collected for any other purposes other [than] the operational and maintenance costs and AWSB's supervision fee, except with the written consent of AWSB.

vii. That the CBO does alter, amend, interpret or implement their constitutions in a manner that would cause them to be in breach of their obligations under this agreement, the Act, or any regulations or guidelines or in any manner that may be construed as intended to frustrate the terms of this agreement.

viii. That the CBO at all times abides by the principles of good corporate governance.

ix. That the CBO at all times distributes the revenue collected from the ablution block in the manner agreed in **Schedule F** hereto or as may from time to time be agreed upon by the parties herein.

x. The CBO at all times observes the principles and ethos set in the **Memorandum Of Understanding** (**MOU**) between the CBO and the SO in the **Schedule G** hereto.

7. Sanitation development fund

i. The parties agree to cooperate in establishing and managing a **Sanitation and Development Fund** into which they shall deposit a percentage of the monthly revenues from the ablution block as set out in **Schedule E** hereto for the purposes of creating a revolving fund for the construction of more ablution blocks.

ACTION CODING

101; 110. These points that mean running and management are controlled by AWSB

111. Finances are controlled by AWSB. This means that no control, is no ownership is actually given to the CBO.

119. This fund is not mentioned by any other stakeholder, or the agent in the WSB that were interviewed.

124-126. Why would members of a marginalised community to provide funding for public facilities in their setting?

127-131. This does not include the people making the money. This never worked out for obvious reasons in the end, the SO took over the projects.

ii. For the purpose of this fund, there shall be a trust account with a reputable account whose signatories shall be the representatives of AWSB, the WSP, and the SO.

iii. The administration of the find shall be responsibility of the SO

8. Supervision and inspection

i. AWSB shall pursuant to its mandate under the Act have powers, whether by itself or through the WSP or SO, to supervise the CBO to ensure it meets the minimum standards for the provision of water services.

ii. AWSB may pursuant to its powers of supervision, whether by itself or through the WSP or SO, have the right to access and inspect any premises at any time. It shall inspect the condition of the assets handed over and/or any documents of the CBO . Any recommendations issued to the CBO after such inspections shall be implemented without any unreasonable delay and within the period specified in the recommendation.

9. Asset development

i. The CBO shall at all times keep the ablution block properly maintained and may from its own sources or donor funds develop and expand the ablution block as may from time to time be agreed by the parties.

ii. AWSB may undertake such further capital development on the ablution block as it may be determined from time to time.

iii. The CBO shall maintain an asset register in which it shall register any asset developed by it and the value thereof subsequent to this agreement.

ACTION CODING

135-146. There is no mention of supervision or inspection of the facility. The one visit did not produce any report that can be verified by other stakeholders.

148-151. There has been no mention or sight of any development happening in or around the facility.

155-157. The CBO get ownership of the asset

Documenting the CPA in the handover document

9. Memo on: Exploiting the ‘difference’ of marginalised groups

Since the inception of the projects, the community has had no communication about the responsibilities of other stakeholder groups involved in the WSS programme. As stated “they have no clear picture of Athi” nor do they know where “the council comes in” (Limuru INT11-04). The documentation meant to inform the community about the input in the development of the projects was hidden from them. This allowed social enterprises to charge rent under the guise of “recovering costs”. With no means of knowing what to expect from political agencies, it is difficult to upkeep the projects effectively.

10. Memo: Training as a means to ensure sustainability of WSS programs

In order to sustain the marginalised groups, capacities have to be built from the political agency. This cannot happen if the groups running the project say that “they [AWSB] don’t even know me” Limuru INT11-04). This is worse when groups whose project was introduced by social enterprises do not offer assistance after implementation. The community in its own right has “taken it as far as they could” but with no technical assistance not much can be achieved. In both of these projects, there is training, even though the political agencies commended the management of the rural project (Limuru INT11-04). In the urban context this inability to fix the ablution block has led to closure which is “very risky to the citizens in the community” (Huruma INT09-03). The lack of learning programmes severely hinders the sustainability of the projects because it limits the capabilities of the community members.

Successive samples coding

Appendix DA06: Analytical memos: understanding the roles of stakeholder groups in the appropriation of space and the creation of place in marginalised settings

Categories and their assigned properties

Ownership	Accountability	Compliance	Evaluation	Transformation	Adaptation	Relations	Transfer	Capacity	Follow-Up
Project placement	Instructions for accountability	Project guidelines	Efficiency	Old resource points	Change	Interaction	Methods of transfer	Building capacities	Instructions for project
Project documents	Levels of accountability	Compliance assurance	Properties of evaluation	Instruction for transformation	Joint composition	Outcome of groups	Units of transfer	Learning programmes	Disseminated information on project
Ownership transfer	Evidence of accountability	Intervention for compliance	Evaluation programme and impact	Principles of transformation in new contexts.	Improved processes	New partnerships	Positioning	Feedback	Upkeep of facility
Advancement programmes	Integration	Incentives and outcomes for compliance			Policy intervention for locality improvements.	Emerging programmes and their impacts.	Uptake measures and its impacts.	Community capabilities through learning capacities.	Development of facility and expansion of building programme.

Successive samples coding

Analytical memo_ Ownership	
Description: **Properties:**	This is to identify individuals, or groups who lay claim to facilities and its resources. Project placement, building program, project documents, ownership transfer and advancement programs.
Transfer sectorial ownership of facility Full management means control of finances and future development within the project.	**Segment 01: Project placement** Yeah, it doesn't just go automatically, they have to apply. When the call for proposals comes up in the papers they have to apply for a particular project and…That may bring conflict of interests. Yeah, so the support is given to the company [*WSP*], and in case the company would want to **delegate the management of a particular facility**, then they do that. Yeah, so they'll start as a small CBO that are registered with…eh, as SHGs but later upscale and register as societies with the Register of Companies. Yes. They take up **full responsibility for their projects**. Yes, they're earning money, and **they're managing that money to make sure that they pay their bills and ensuring that they continue benefiting from that project**. Meaning they continue getting the water is there, that is the responsibility of those leaders now (UDDT INT05).
View of a PPP (Public-Private Partnership) Due to lack of clear boundaries, the project hand-over is left incomplete.	**Segment 02: Building program** Yes, they're built by the same people, and they've made an arrangement with the Athi Water Services Board. Yes it was **a joint venture**, done together with Iko Toilet. It is a **public asset**. No, Athi Water is supposed to hand it over us. Yes, they were to **hand it over us**, and now they're winding up with the contractor [*project initiated in 2009*]. Am not sure what arrangement they had with the contractor. And then after that I think the modalities were whether that contractor was to stay for seven years. There is **no clear boundary of who is supposed to own it** (Limuru INT10).
Lack of control of finances by CBO on site The transfer of resources is withheld from the community.	**Segment 03: Project documents** Yes, they look like council toilets, then we're disabled. Most of them **don't even agree to pay**. Because ours is rented by the Iko Toilet. Okay, now what I don't understand, the relationship between Athi and Iko? Because we, **we deal with Iko**, Iko Toilet. We don't deal with Athi and we don't know the argument between them and Iko and maybe…. [*So you don't know about Athi?*] Okay let's start from there, maybe **our project because it's under Iko** (Limuru INT11).
Full control of projects seen as preferred alternative to current state of divided ownership Due to inadequate instruction at the programme level, agency is assumed by the stakeholder with greater power.	**Segment 04: Ownership transfer and program advancements** Even us we shall **do the same** [assume ownership], because now they should go to the county. Then they [WSPs] should be **taken over, all of them**. *Kwanza hiyo kitu wakati tulikua, by the time wanaona ziku tu kuisha, hii watu wanazinga'ngania* (First of all, when we were at that project, by the time they see that they are almost completed, these **people start fighting for them**). You know **the problem here was ownership** (Limuru INT02).

Successive samples coding

Analytical memo _ Accountability	
Description: **Properties:**	This is to identify individuals, or groups who lay claim to facilities and its resources. Instructions for accountability, levels of accountability, evidence of accountability and integration for transparency.
From the extracts we observe a gap in the information shared between the political agencies. This results in lack of accountability **for the contribution of partners** and duties are expected to performe.	**Segment 01: Instructions for accountability** Limuru INT02-04_19 "The outstanding finishing and fittings… and like Kuria it's like he went away so you see now **it's pending**. But for us, the agreement we had with him **we executed**." Limuru INT04-04_62-63 "We tried a few initiatives (with Eco-Tact), but again there was a problem of ownership and **being able to account** for what each partner contributed." Limuru INT10-04_226 "So under what circumstances these ones were **financed by Athi, I don't know**."
The distinction in the levels of responsibility reflects how well the programme works. Government entities that own the asset are unaware of what is going on and this due to **lack of due process**	**Segment 02: Levels of accountability** Limuru INT02-04_125-129 "Because here, there's **no one who knows** even **they're paying** (referring to the rural project). The time when you there (the Eco-Tact offices) to do research, you shall disagree with them… and them (rural project) they pay money to those people from Eco-Tact." Limuru INT10-04_229-230 "It's supposed to under the UPC, the Urban Poor Cycle…so am not sure if it's under that cycle or what, because it if it was there **should have been due-process**.
There is clear evidence of management problems especially at the level of information sharing between the political agencies. The lack of evidence for **accountability** of funds has great impacts on the projects on the ground.	**Segment 03: Evidence of accountability** Limuru INT02-04_23 "Okay, so the works have been done but we had **problems with payments**, because they changed so many times that we had to take it through the tender board." Limuru INT10-04_12 "Am **not sure what arrangement** they (Athi) had with the contractor."
The integration of local government institutions is not apparent. As is seen where one representative says it works and the local reperserntative says they know nothing about the projects or programme.	**Segment 04: Integration for transparency** Limuru INT03-04 Additional information collected through adjacent sectors of health and social services Limuru INT04-04_66 "Where the Water Service Providers intervened the **management was very good**." Limuru INT10-04_60 "Yeah, just talk to Athi because the ones I know… as far as I know and understand and even when I had asked them, they told me **they don't pay rent**."

Successive samples coding

Analytical memo _ Compliance	
Description: **Properties:**	The way political agencies adhere to the roles that are set out in the programme in improving service delivery to marginalised settings. Basis for project guidelines, process to ensure compliance and design interventions for compliance.
The political agencies are meant to support the service delivery to marginalised settings. Therefore these special provisions should work toward improved living conditions and reliable services.	**Segment 01: Basis to project guidelines** Limuru INT03-04 "To be able to **mobilize the community** and able to get them to participate in those kinds of projects." Limuru INT04-04_129 "Then of cause regulations, how much should they charge etc. what **kind of support can the County Government give** them, okay?" Limuru INT10-04_206 "And since it was already an existing facility, there was a toilet which was there. Yes, **they just continue with that account**, and that is… and we check."
To make sure that political agencies work according to set guidelines, local government institutions and the leadership needs to be part of the process.	**Segment 02: Process to ensure compliance** Limuru INT04-04 _132 "So I still believe that as we devolve the services, we should have a very **strong department in the County Government on the informal settlement**. 04_184-185 "Then also one thing…another thing we want to do is that for people to take sanitation, for all leaders to take **sanitation as… as the in thing**. You know access to water and sanitation should be what **every leader is trying to achieve**. You know the Members of the County Assembly."
The design interventions of the service projects highlights relationships between the community and the political agencies. These are considered important as they assess the effectiveness of the programmes on the ground.	**Segment 03: Design interventions for compliance.** UDDT INT05-01 "The **conservation that is taught** to them, you see the run-off water? You've gone to the slums and you've seen how sometimes it's messy? So we ensure that the area they're operating from is a place where at least you feel okay." Limuru INT04-04_231 "Yeah, who maintains. **Those relationships are the ones which are very important**, again it's something we need to fine-tune." Limuru INT10-04_36 "So it was **demolished and they were given a better one**. So in that process it was thought that this was for **the benefit of the disabled group**."

Successive samples coding

Analytical memo _ Evaluation	
Description: **Properties:**	The approach used by political agencies to ensure that intended improvement to service delivery is met on the ground. Efficiency, properties of evaluation, evaluation program and impact.
The general running and management of both programmes and projects should be done efficiently.. This can be difficult if effective interdepartmental relationships are not upheld. Assumptions of duties being performed can lead to ineffective processes within the flow of service delivery.	Segment 01: Efficiency UDDT INT05-01 "They sell the water and **make their money**. They can either decide to expand or keep this money for operation and maintenance, and for **paying people** the people they employ to run their facilities." Limuru INT02-04_87 "Now you see someone like me, I have completed my job. Why, now the other part you should go and ask them. If **they are incapable of doing it**, you're the one who leave with an incomplete [job]."
There's a general knowledge of people performing research but no interest in what they're doing or in using knowledge outcomes that may result from the research. The physical changes in the environment are not .considered beyond the apparent changes seen. Ground water and aquifers are also important to consider when drilling.	Segment 02: Properties of evaluation UDDT INT01-01 "Within the community? **Many people are doing research** on Kibera, yeah it's everywhere we keep saying that." Limuru INT03-04 "But eh…they do not overcharge so as to have a surplus. They only charge what is enough to keep the project running." "Not really, the landscape is not affected. You know for a borehole you're only **drilling a hole which has no effect on the landscape**. I mean, it cannot affect the landscape in any way. So you just drill a hole straight into the ground."
When the various components of the working programme are not tabled out, it leads to problems during evaluation of works in the project. This reflects in the level of disagreement between the national and local government representatives when joint ventures do not materialise.	Segment 03: Evaluation program and its impact. Limuru INT02-04_113 "You know what should have been done, it is labour, **labour should have been quantified** so we can know how much money… you know the amount. Then the materials, Athi Water gave away and we don't claim anything." Limuru INT10-04_106 "So the local council, our municipality, was not also…because **it was supposed to be a joint venture** between the council, Athi and the guy [I assume this was Eco-Tact]

Successive samples coding

Analytical memo _Transformation	
Description: **Properties:**	The changes done to the setting by the introduction of projects for better water and sanitation services to marginalised settings. Old water resource, instructions for transformation, and principles of transformation in new contexts.
This informal community remains unplanned and with a high number of marginalised community groups. This is due to age, gender and educational levels .	**Segment 01: Old water resource** Limuru INT04-04_26 " In spite of the fact that so much money had been sunk in Kibera, billions and billions have been sunk through the NGOs."
The differences that emerge in informal settlements are seen to be caused by cultural differences. As a result,, the projects implemented fail to transform the marginalised settings through increased service delivery. If existing cultural differences are documented, then the suggested pilots should have been the next cause of action instead of different sites, which are often away from the marginalised setting,.	**Segment 02: Instruction for transformation** UDDT INT01-01 "Because you're really concentrating on informal sites, if you got an opportunity to out of town, the ones which we have out of town in needy areas or communities, you would…you would see a lot of…because them…they have huge number of lands, they large parcels of land first of all." UDDT INT05-01 "So they're cultures that are difficult to deal with." Limuru INT04-04_28 "Yet if you went to the actual structure they were at, most people were doing interviews and documenting miseries of the people, but not actually not giving them the infrastructure." Limuru INT10-04_108 "Yes, and they have also to launch their pilots etc. and then maybe they'll renew their licence every year."
Value added by the projects can be seen from three prespectives. 1. The space appropriation, where political agencies decide on removal of structures. 2. The actual development of the structure which is outside the influence of the marginalised community. 3.The resulting service that is offered by the government institutions. All of these culminate in forming the principles with which political agencies determine how marginalised settings are to be transformed through the delivery of reliable service.	**Segment 03: Principles of transformation in new contexts** UDDT INT05-01 "Yes, and sometimes even some of the people have to move some of their structures to pave way for some of these projects." Limuru INT02-04_11 "Athi Water Services Board engaged a contractor to deliver materials to all the six sites." 02_13 "Eco-Tact was the one engage the day-to-day activities and to be in charge of safe custody of the materials." Limuru INT03-04 "Yes, because we have some communities that are served by the water company, but then they are other communities who are not served by the companies because the companies have not been able to extend their services to all the people within their areas." Introduction of a financial support system by the government. "So those that are not covered by the company, there is a trust find within the water sector, which is managed by the Water Services Trust Fund, yes it is a sister company to the board." Finances are given to communities outside the jurisdiction of Nairobi Water Company.

Successive samples coding

Analytical memo _Adaptation	
Description: Properties:	Changes in marginalised settings that have been influenced by the policy of the *right to water* Change, joint composition, improved process, policy intervention for locality improvements.
By involving community groups in the delivery of services to their communities, government institutions effect changes that directly affect their ability to attain their policy directives that affect the realisation of the 'human right to water'. It now falls to the same community, marginalised due to poor service delivery, to provide for themselves this same service. It is noted that once the facility is constructed, political agencies no longer monitor the changes they initiated.	Segment 01: Change Limuru INT02-04_77 "It was not done [the contract], you know Mugambi was the one to sort it." Limuru INT03-04 "Ah we normally keep that [reports] strictly during the construction; the mobilisation, writing, financing and construction of the project."
	Segment 02: Joint composition. Gikomba INT07-01 The representatives of the local government are actively involved in the improvements being done in their community.
Policies are meant to emerge from the context they serve. Therefore to formulate relevant policies, political agencies have to collaborate with the communities on the ground. Implementing programmes without policy directives to guide the improvement of livelihoods in the marginalised setting is not providing fully effective and efficient services. It is imperative that stakeholders in the government institutions know the importance of policies in the provision of services to marginalised settings. This should ensure that available resources are adequate and fall under the directive of government institutions, whose responsibility is to administer the use of natural resources within their counties. The NGOs also play an important role in inputting financial and physical resources which can mitigate the shortage of resources in marginalised settings. Although forming alliances with NGOs is a good approach, it is however more beneficial to galvanise the community since they are directly affected by the projects. Regulating structures is essential but doing so without a clear understanding of the social parameters within which they expected to work could have a negative impact on the attainment	Segment 04: Policy intervention for locality improvements UDDT INT01-01 "So for us, we can say we have hit the target, the community is supposed to ensure that they have…ah things taken care of in terms of livelihood, in increasing their livelihood." UDDT INT05-01 "What do you mean by policy?" Limuru INT03-04 "But with the support they have been able to develop water sources be it boreholes or pumping water from a river." "But most of them have developed boreholes, and they're able to now access clean water." Is the water access treated? "So those communities who are a nit innovative and they're able to mobilize extra resources from within themselves or from other quarters, they're able to build other facilities… How well are they accessing water and sanitation services? Water projects used to be undertaken by the ministry and there was little to no consultation with the beneficiaries." Limuru INT04-04_20 "So they used to do… they'd get money from the donors; from USAID, and all…all they donors and they intervene" These projects ran without consultation from the arm of government of meeting citizens' need for water and sanitation. 04_90 "What happens when the water sector reform changes and our responsibility is no longer to deal with the water companies?" 04_102 "But having a water person is not enough. We need someone with an instrument that should be registered." 04-04_138 "But everybody is trying to look at maybe permits do you have permits for construction the house etc. Now forgetting that it also social responsibility that this ward representative should be involved in." 04_171 "Normally the NGOs are very uncomfortable when they team up with us. Because of the budget lines, because most of the time we have the problem (money)." 04_179 "And then you know every…the good thing is that every informal settlement has the dominant NGOs."

of key objectives such as formalisation of resource allocation and authorities in marginalised settings.	

Analytical memo _Relations	
Description:	The interdepartmental relationship between the political agencies that gives rise to the distinction seen with the marginalised community.
Properties:	Interaction, new partnership, emerging programs and their impacts.
Active engagement does not require all stakeholders in leadership roles to participate. The innovation that is needed to improve service delivery would emerge from learning outcomes. These outcomes can be seen to correlate with the increase of formalised interaction that would see learning initiatives included in the program process. These learning areas should have a direct impact on the required training and it should ensure that agents in the programme are assigned roles that they can perform. When agents are unaware of the needs of the community the benefits from the programmes may be underutilised and this may result in the misuse of resources. This is clearly seen where political agencies have different interpretations of the intended impact of the projects implemented in their areas. Moreover, the lack of knowledge from other agents within their context has a direct impact in how the projects are managed .	**Segment 01: Interaction** UDDT INT01-01 "Something that is involving everyone… can have a chance to also be in leadership, and to do innovative services that others could not have done. Or, if someone moves out of the region the person to be replaced." Limuru INT04-04_118 "Yes…they don't have training. The problem is that we're doing so much, but again in terms of what happens thereafter." 04_121 "We have also had problems, not only in this projects. For example, we have developed about 70 boreholes which we handed-over to the Nairobi Water Company. But they do not even, they are not using them." Limuru INT10-04_02 "Yes, they're built by the same people, and they've made an arrangement with the Athi Water Services Board." 10_28 "And then after that I think the modalities were whether that contractor was to stay for seven years. There is no clear boundary of who is supposed to won it." 10_176 "Yeah, so me I just left it at that. So if they pay rent you need to counter-check with Athi."
The programme which has created new relationships in service delivery, reiterates that political agencies are always available to the marginalised community. While within the political agency, interdepartmental relationships are strained especially in instances whereby stakeholders adhere strictly to their role without take into account how the final outcome is influenced by other people involve in the process. The projects implemented in rural areas are done so under different circumstances as opposed to urban settings where high densities seem to reflect poor service delivery. The financial resources for allocating facilities varies significantly although the facilities are similar in design. Frameworks	**Segment 02: New partnerships** UDDT INT05-01 "Yes, you see we are always like um…it's not like once we give them the facility our doors are closed." Limuru INT02-04_51 "I'm the engineer, and well I have constructed them." 04_141 "And how shall you help us now?" Limuru INT03-04 "Ah, I don't know what exactly you mean by zoning, but, ah…okay I would say ah, for the rural areas we don't just look at the densities we look at the current state of the service provision." Limuru INT04-04_83 "So you see the ones we're contracting, we have like 50 ablution blocks that is costing 200Million, so that is 4Million. The previous ones we did with the French Development Agency, they were costing and average of 3Million KSH, and we have others 2.5. So the average of 3.5Million KSH." 04_147 "So you see, the issue…That's what am saying management we need to strengthen it, in terms of the…involving the County Government." 04_150 "And the instrument needs to be very much straight that, there should be follow-up to ensure that the gatekeepers do not eventually end up with this ablution blocks." 04_167 "I hope and I have a team. We're trying to get an NGO to come up with a proposal for the post-

and guidelines to help in the management of these programmes are needed if the programmes are expected to impact positively on the marginalised settings. The partnerships mentioned here are concerned with funding and not so much on the implementation and evaluation of programme and projects. Although it is clear if these are loans or grants, the maintenance of the facility resides with the community and the local government. This is indeed a new forum especially as the local county government is newly formed. In response, the local government gives a different account from what is expected at national level. They are not involved in the programme at all and only offer provision of resource as a service to the projects that are managed by marginalised groups in their area. They complain that they are left in the dark about development strategies meant for their settings and are not included in either the concept or development of the projects on the ground. This is in direct conflict with the tripartite agreement which is seen to include the local service provider in the implementation of program objectives.	running of this; for evaluation trying to train the community like this." 04_168 "That one we can do, because some of these things we cannot do alone." 04_170 "But we need to partner with the communities… I mean the NGOs." 04_233 "We have concentrated in getting the ablution block into the informal settlement. But we need now to concentrate more in terms of the management and sustainability." Limuru INT10-04_76 "Hmm so us, when we have only have a consumer agreement [with them]." 10_144 "It was just like any other contractor, because we didn't even know where he was coming from." 10_187 "They don't tell the people on the ground, they only tell the person who is building and that one builds and leaves. The people on the ground have no idea what is going on."
The political agencies seem aware of alternative knowledge outputs, attained by external agencies in the same area they are implementing projects, but do not approach these agencies to partner in an effort to consolidate their initatives. Visits to the marginalised setting show that the community makes an effort to plant greenery in the area, although the political agents often complain about lack of space. Therefore integrated living with the environment is not seen to be important enough to add to the program directives. Presently, the local government has no information on the projects and the stipulated rules within the programme that set out how stakeholders engage with each other. The fact that the government asset has now became a business entity for other political agents within their stakeholder group, is in fact a problem. When the political agencies share in service delivery opportunities with the community, the cimmunity members should not be charged rental for the facility.	Segment 03: Emerging programs and their impacts UDDT INT01-01 "Many people are doing research on Kibera, yeah it's everywhere we keep saying that…it doesn't filter out." UDDT INT05-01 "Yes, okay in the informal settlements there's nowhere to plant trees." "There's no soil…it's called what…erosion." Limuru INT04-04_226 "Yeah, so those are some of the issues." 04_234 "Yeah, and the relationship that enhances sustainability is what perhaps we need to think about." Limuru INT10-04_16 "Rent?" 10_68 I asked them, what is happening? Then I called Athi and told them that there's some branding in these toilets. Then there were telling me, I think you should be knowing. Then I told them, you know there has never been a handing over process." 10_90 "There needs to…something needs to be done."

Successive samples coding

Analytical memo _Transfer	
Description:	The ways in which the political agencies seeks to explain the movement of services and resources in the programme
Properties:	Methods of transfer, units of resource transfer and positioning.
Explicit methods are used to transfer knowledge from one stakeholder groups to another. In some instances, there is use of implicit transfer through public meetings. The political agency controls both the formal and informal methods of communicating information used to direct the programme and projects.	**Segment 01: Methods of transfer** Gikomba INT07-01_49 The representatives of the local government are actively involved in the improvements being done in their community. UDDT INT01-01 "We give everyone. After we do the report, immediately after we launch the report, and during the launching we invite everyone that was there through the meetings that we did together with the partners who were involved." UDDT INT05-01 "They mobilise them for us. That is calling them to a point for us where we tell them about the intended project."
The main resources that are important in the programme are monetary.. For the project to be considered, important the impact of financial resources must be felt by the marginalised community. Alternative means also include government institutions that can further drive the projects on the ground.	**Segment 02: Units of resource transfer** UDDT INT01-01 "So how much is your profit, if like it is KSH3000 a month plus maintaining the system you pay KSH2500 so you're left with KSH500, which you can put in a kitty." Limuru INT03-04 "And also from time to time Water services Trust Fund may provide some finances for further training to enhance sustainability."
When the project is termed to be beneficial to the marginalised community, the political agency formulates tools to help them position the programme for greater acceptance within the setting. After implementation of the projects, it is disconcerting for the political agencies to say that they are unaware of current projects under their flagship programme. Some of the positioning strategies include loyalty schemes for families living in these marginalised settings. This is to include the children who are not catered for in the pricing of the present facilities. In the rural area positioning is done according densities, where the facilities are placed in areas with a large number of people transiting through the space.	**Segment 03: Positioning** UDDT INT01-01 "Some of them are saying; I don't want this project, this project is going to react badly environmentally. Then you answer their questions." UDDT INT05-01 "That one am sure we don't know how it works." Limuru INT04-04_212 "So one of the things we wanted to encourage to these CBOs is to have a sort of family rate." 04_213 "So maybe you pay 30Bob or 50Bob but then all the members of your family can use that card, for everybody." Limuru INT10-04_222 "And we have applied one, where we want to doa toilet just after the *jua kali* sheds."
The marginalised community is seen as a stakeholder who needs to be influenced and not as an influential actor. For political agencies to develop in-context solutions for complex problems in marginalised settings, they need input from the community members . Although uptake by marginalised	**Segment 04: Uptake measures and its impacts** UDDT INT01-01 "The project is not meant to bring you this, it will bring you this. It might bring this, but look at the benefit on this side. So you have a discussion with them until you meet at a common, at a centre and say let's now…at least you have an idea what this project will do." "That's news, that one we'd have to check…oh dear poor people." Limuru INT02-04_19 "The outstanding finishing and fittings, and like Kuria it's like he went away so you see now it's pending." 02_41 "You asked Emily

community on the ground is important, uptake at programme level is equally vital. When some of the agents do not fulfil their roles, then the programme is inefficiently implemented. This results in agents i.e. passing the buck The impact of slow transfer levels of the programme objectives results in poor service delivery. Consequently some members within the community are further marginalised because of their difference. If this happens, the projects are considered unsuccessful.. This situation is further worsened by the local government's lack of involvement in the programme process.	[lawyer] what, did she say?" Limuru INT03-04 "So we don't' leave them alone and forget about them after the project is complete." Limuru INT04-04_208 "Because the cost is slightly too high, the children still defecate outside." 04_209 "So you see, you go and see there's an ablution block that is very well, whatever…but you still find a lot problems in terms of the…in terms of the… Because the children are not allowed to use the ablution block." 04_211 "Because the family cannot afford." Limuru INT10-04_198 "For us we don't know anything about those things." 10_199 I told them, there's no WSP I have gone to who knows what is going on."

Analytical memo _Capacity	
Description: **Properties:**	Processes that drive the building of abilities of marginalised communities using information from political agencies. Building capacities, learning programs, feedback, community capabilities through learning capacities.
The basis of building capacities begins with identifying capabilities within the marginalised setting. This is done by listening to the members and itemising what they think about the programme before the project is implemented. Different agents in the political agencies do not use the information from the marginalised community. The use the information after the concept of the programme has been finalised. The social aspects that emerge from the implemented programme are issues that should be dealt with by the political agencies involved from the onset. By objurgating their responsibilities to the marginalised community, they leave the project outside the policies and regulatory boards of the government institutions.	Segment 01: Building capacities UDDT INT01-01 "When we do the meetings it's basically a discussion, and the thing is, it is more so what…when we go there, we don't go there thinking that we're coming to bring you this, or coming to tell you all these things. We go there with an open mind, we go and tell them 'we are here, we want to do this project tell us what do you think about it?' And from that...and from just that statement we just introduce the project we want to." UDDT INT05-01 "Sometimes we need contribution from them, not necessarily in cash, but maybe in kind." "Then after the project we give it to the community to run." Limuru INT04-04_78 ""So as part of the site identification, we identify the site where the people are supposed to manage the ablution block, and thereafter hand-over to that group." 04_164 "So that they [NGOs] can take the soft issues of the capacity building for the sanitation etc." 04_176 "But I believe that there's a lot opportunity to partner with NGOs for training, follow-up training."
The marginalised communities learn about the new project and programme directives through workshops and seminars hosted by the political agencies. This is in contrast to stakeholders within the political agencies who claim that there are problems in the issuing of contracts within the programme. The government institutions have invested in social initiatives by engaging personnel	Segment 02: Learning programs UDDT INT05-01 "And we have also workshops and seminars, and that is where they raise their issues." Limuru INT02-04_81 "No it can't when it comes to a specific issue like contract, a place where there's disputes…" Limuru INT03-04 "That is when people like myself were found to be useful in the water sector. Yes…people skills… with people skills." "I think this time they're being called sub-county water officers. These are the people who now continue with those communities." "You know Kerwa? Yeah,

in these areas. Although they seem not to know their counterparts in the local government, one wonders how well this approach is working. In rural projects a lot of support is given to the community running the project, which results in the removal of local government from the process. The interdepartmental visits would be more meaningful if the local government were involved in setting up a localised centre for driving the programme.. Instead of approaching the local government in charge of service delivery, the national government opts for NGOs. This is odd because they intend to use the local government to regulate the projects through licences. The issuing and following -up of this approach would include the training of the local government agent to ensure that they are able to disseminate information needed for the efficiency of new service delivery approach .	somewhere there. Yes, it's part of Kiambu. Yes if you want to visit we'll direct you exactly how to get there. That is one of the best examples, yes that is one of the best examples." "That may begin conflict of interests. Yeah, so the support that is given to the company, and in case the company would want to delegate the management of a particular facility then they do that." "Yes, we are now planning to take them for an exchange visit to some of the successful project in Western Kenya." Limuru INT04-04_32 "Our first intervened was that in some of the ablution blocks, we started with the NGOs… we provided the materials, and then they would mobilise the labour through the communities and other partners." 04_110 "Because to renew the licence they need to do one, two, three. You understand? 04_131 "Continuous training, for example." 04_158 "It is important to follow up in training. We might not be able to so it as Athi Water Services Board." 04_161 "And there are the partnerships we want to ask for proposals." Limuru INT10-04_48 "They were charging them as if it is a kiosk rate, so that they can earn some money and help themselves."
In response to the several facilities that have and are being implemented by the national government, there is a move to include feedback from the community. This is seen in the mapping of the facilities in the communities and the fact that locals believe all stakeholders have something to contribute to the programme. The use of local NGOs is also very prominent as they have formalised management systems, which can facilitate the handing over of the project . But even through this approach there are still problems of ownership, after the transfer of facilities and service delivery. The effective use of these organisations falls short as records of processes are not kept.	Segment 03: Feedback UDDT INT01-01 "You have to bring them on board we cannot leave anyone behind, reason being each partner has been able to bring something to the table in terms of development." "The regions in terms of? Where we've put up something? We have them, we've marked them and we've mapped them. I think there's something where our facilities are…they're many." UDDT INT05-01 "The other way that we use are the NGOs that work within that area. The NGOs that have working for long within that area, and then from there we get their applications." Limuru INT02-04_75 "That problem is what is there. This thing of the contract that is what was not right." 02_151 "Okay then, but when you finish you will give us?" Limuru INT03-04 "So they should be having all those records."

Successive samples coding

According to the political agencies, the capabilities of the community are blanketed and no one person gets credit for their suggestion or contribution. In the case of management, they who??? make assumptions by suggesting that one marginalised groups is less intelligent than the other. This is evident in the way NGOs take over the capability of the marginalised community, communicating their needs to their government representatives. From this perspective, it is difficult for the project leaders to identify the capacities represented in the community. For the local government, this means appointing marginalised groups to the projects.	Segment 04: Community capabilities through leaning capacities UDDT INT01-01 "No, if there was a suggestion that was taken, that was done, or that came from a community member it's credited to the whole community. Because everyone makes a contribution so we say the community did." "It's managed by intelligent people who are…I think you should go visit one [rural projects]. UDDT INT05-01 "They know their needs, they already know what those people need." Limuru INT02-04_99 "Someone else paid the money to pay the labourers, he also claims to own a part. So which should be the overall owner?" Limuru INT10-04_34 "Yes, so what I know is that from my point view this is a disabled group and that toilet was put there because there was need. There are no toilets, the one which was there was in very bad shape, and they were the ones who were…there was a toilet that they were managing." 10_154 "With the disabled group, for us it's just…they come and pay."

Analytical memo _Follow-up	
Description: Properties:	The means to understand how inter-relationships can help improve how programs and projects work in marginalised settings. Instructions for the project life cycle, up-keep of facility.
When the political agency identify the project, it disseminates this information to the community which will ultimately run the project in the marginalised setting. although not all stakeholders in the political agency are aware of the instructions of the project within the programme, they are part of the implementation team . Some of the stakeholders within the political agency prefer to start with the community, as opposed to the NGOs on the ground. The ability to build capacities within the community to ensure that the projects are efficiently run is still a problem for the political agency. The NGO's role is now transferred to acquiring funds from international finance institutions. Again this was problematic because costs for attracting funding rose considerably resulting in the national government taking over the management of the programme. Unfortunately this affected capacity building within the marginalised community, which can ensure the sustainability of the service delivery programme. This is worsened by the fact that the local government is not included in the implementation of the programme .	Segment 01: Instructions for the project life cycle UDDT INT01-01 "Whichever way you want to look at it, we train them on how to maintain the projects and how to maintain the systems and everything. We train them on how to run it; we train them on how to get revenue from it." Limuru INT02-04_39 "So it's the legal office whom you can follow-up with." Limuru INT04-04_30 "So, when we intervened we said, we don't want to know what the NGOs are doing, but we want to come in and try and do the intervention." 04_88 "Because you sign the agreement today, who will monitor it?" 04_159 "But every time I see, I see a lot of opportunities. Like now I saw something from the Belgium asking for partnership, in terms of getting some funds with NGOs." 04_173 "When they expect the monies to flow into them, no monies flow into them, then they pull out." 04_194 "Of cause with the experience we have gained, having gone through the whole spectrum; worked with NGOs, worked directly with. So we know that this method produces the best initial cost." 04_195 "But the lifetime cost and sustainability of the ablution block, I think we're yet to fine-tune that." Limuru INT10-04_158 "And under whatever circumstances they were done, for us we were not aware."

Successive samples coding

Because of lack of capacity building, the community seems to be struggling to ensure that the facility is sustainable and occasionally needs financial assistance from the national government	Segment 02: Upkeep of facility UDDT INT01-01 "The community is left to check the asset, we only check on them from time to time or when it gets crazy and the placed system has really collapsed and failed, they don't have enough money to maintain it."

Appendix DA07: Theoretical memos from the political agencies data coding: using axial coding to place marginalised communities in WSS programs and projects

Asserting agency in WSS program according to external agents

In this instance the projects are marked and mapped as assets of the local government, through appropriation done through locally assigned NGOs. These political agencies are seen to know what kind of space can be used in the community (UDDT INT02-04). Because when the project "belong to the organisations, that is ideally not supposed to happen" (UDDT INT01-01). Therefore, the plan now is after construction, the project is now to revert back to the local government (Limuru INT02-04), to ensure that these projects are not turned into a commercial entity, denying people the services that were intended for them" (Limuru INT03-04). The external agencies which acted as "gatekeepers, causing problems to arise, and the ablution block to become like a business to them (Limuru INT04-04). Using design intervention that were intended as social initiatives, these approaches result in urban landscapes that control causes one group to be dominated by another (Keatman, 2013). The political agencies still believe that "sanitation is good business, but it should also be social. [That] it should have a good social element, [where] even the communities know they have a role [to play]" (Limuru INT04-04).

How can government institutions, mandated to provide water and sanitation services, integrate marginalised communities into the wider society? When the role of the marginalised groups in the community is mentioned by the political agency, what role is that?

The programme for equitable water and sanitation services divides these roles given to the community, which is only a partial role in the running, but not the ownership of the projects. The programme for equitable WSS has informal instructions that leave "the community in-charge at the end of the day when the WSB rolls out" (UDDT INT01-01). The community, which "starts as a small CBO that were registered as SHGs, but later upscale and register as societies" (Limuru INT02-04). As seen, the community run, but in the end the "CBOs now pay money to those people from Eco-Tact, and that is a problem" (Limuru INT02-04). Because, presently private companies who are limited in service provision are seen to be involved in service delivery. This is insufficient in meeting the needs of the marginalised community since they are oriented towards services that will generate profit (Aubrey, 2009). In the community, low income earners who can afford for these services are not catered for. But if the Kenya Water Act of 2002, and the government's promise to make water a 'basic human right' is to be used as a yard stick, then these marginalised communities have no access to this right. One can argue that people's actions control the change in societal structures and patterns, and that therefore new structures are the result of the actions of the

political agency, and the marginalised community. Their “right to be” (Goonewardena, et al., 2006) sees this new social practice as a norm in the present spatial appropriation, even though the boundaries of rules and regulations confront “their right to dwell” (Goonewardena, et al., 2006). “The relationship between space and poverty, and access to economic and social opportunities through well integrated spaces, has been associated with a higher incidence of wealth at the smallest levels analysis” (Carpenter, 2013:14). This can be seen in the way the CBOs organise social and economic activities that facilitate interaction between members in the marginalised community, and the wider society. As projects are implemented to provide WSS, the equitability of access is still not addressed. These programmes fail to comply with the provision at a ‘human right’ level, leaving the poorest of the poor with services in the community, that they cannot access.

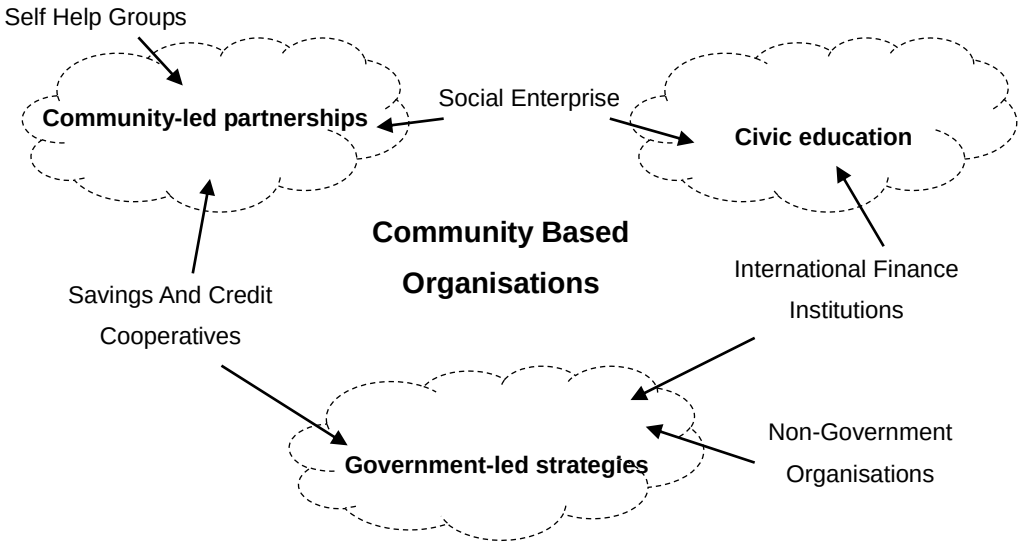
How then, does the lack of transparency highlight the need for compliance to equitable access of WSS in marginalised communities?

Because informal sector activities are often regulated, and sometimes actively discouraged by local government (Bangasser, 2000), the space is not well-kept. Accordingly, “the slums are seen as [somehow] sometimes messy“(UDDT INT05-01). This is a disjuncture between the political agencies that bind the setting with allocation of resources that affects the state of water and sanitation access. “To be able to mobilize the community to get them to participate in those kinds of projects” (Limuru INT03-04), that would improve WSS, “consultancy [is seen as an important] component of the social aspect” (Limuru INT04-04). Lefebvre’s radical right to difference can be applied as a conceptual and political tool to mobilise against economic dominance and urban oppression. Here, space does not only reflects the cultural identity of an area, but also shapes identities and dispositions (Pugalis and Giddings, 2011:283). This is evident in the handover to the CBOs through a tripartite agreement viewed as an appropriate model to improving water and sanitation provision (Limuru INT04-04). By being “encouraged to look at it at a business angle” (UDDT INT01-01), economic dominance is reiterated through external agencies. With the new County Government system, efforts are being made to integrate the marginalised communities, especially those in informal settlements, back into the wider society. So that according to Limuru INT04-04_132 “as we devolve the services, [there] should have a very strong department in the County Government on the informal settlement” (Limuru INT04-04). This means the need for equitable WSS should be taken as an important service provision of government to all its citizens regardless of their economic bracket. “You know, access to water and sanitation should be what every leader is trying to achieve. You know the MCAs [Members of the County Assembly]” (Limuru INT04-04_184). This means the boundaries between communities can relate to marginalised groups by asserting agency. The narratives in the

community run through the behaviour patterns of the community dwelling within it, which further shape their relationship with the wider environment.

Even though there are many NGOs doing research on Kibera, the results of the research do not filter out (Limuru INT03-04). How is acceptance and use of the facility measured, and is there data that accounts for the community's perceptions of the facility? If the local council, at the municipality level, is not involved, in a programme which is supposed to be a joint venture between the council, ASWB and the [Eco-Tact] person, then even at political level, agency is uncertain (Limuru INT10-04_106). This makes it difficult to "manage the downstream of the water and sanitation program" (Limuru INT04-04_86). Because, community hardly refers to a cohesive homogenous unit, this diverse set of people are bound to disagree when they interact. Every design engages the living system that it's a part of, whether or not that engagement is planned or unplanned. By expanding the concepts of design to include engagement, the potential is not only to sustain but to regenerate. This can develop interventions that contribute to the health and the wealth of the whole environment (Reed, 2007).

The conceptual memos look at political agencies' responses in relation to the literature we looked at by interrogating the study's output inrelation to similar cases. The diagrammatic representation below shows how we have interpreted the dispersion of water rights in informal communities.



Social practices in design processes that further community initiatives

To acquire knowledge through networking and partnerships which help to build resilient communities, these resilient communities can attain agency in their setting by exploiting their social relations. Social practices can be built by endorsing transformation to help actors adapt design processes to changing contexts and the transfer, which emerges becomes a crucial tool for building social relations.

Questions arising from the category **asserting agency in WSS projects according to external agencies**:

- How can government institutions, mandated to provide water and sanitation services, integrate marginalised communities into the wider society?
- When the role of marginalised groups in the community is mentioned by the political agency, what role is it?
- How then does the lack of transparency highlight the need for compliance to equitable access of WSS in marginalised communities?
- What meaning in the boundaries between communities that emerge can relate to marginalised groups by asserting agency?
- How is acceptance and use of the facility measured, and is there data that accounts for the community's perceptions of the facility?

> *Architecture, the creative aspect, is that which creates and gives shape to places by means of the project, and thus space becomes architecture. The space designed by the architect somehow influences the inhabitant, conditions his practice; on the other hand, so as to adapt to this space, the inhabitant tries to overcome imposed conditions, transforming them formally and conductively (Llopart, 2000).*

This is the creative element that gives shapes through the implementation of WSS projects. These architectural formations designed by the architect transforms the informal setting that the community lives in. "If you went to the actual structure, most people were doing interviews and documenting miseries of the people. But not actually giving then the infrastructure" (Limuru INT04-04_28). As seen in this study the architect who conceptualises space, and in this case the political agency, has influence over the inhabitants of the setting. "Sometimes even some of the people have to move some of their structures to pave way for some of these projects" (UDDT INT05-01). This influence directs the regulations and finances for successful completion of the the projects. The WSB engages a contractor to deliver all the materials needed for the construction of the project. Once this is done, the day-to-day management of the site is left to the consultants who then give the running to the

CBOs (Limuru INT02-04). In some cases, the community may get funding from WSTF, whose mandate is to mobilise resources for poor areas (Limuru INT03-04).

> *Space coded by society is one that emerges from the agency perpetuating guidelines, rules and regulations. To users who navigate and thus spatially orient themselves, this co-determines activity, or indeed influences rebellion against conformity (Goonewardena et al., 2006).*

The political agency normally keeps datasets strictly during the construction; the mobilisation, writing, financing, and construction of the project (Limuru INT02-04). The community in turn is supposed to ensure that all the things taken care of in terms of livelihood (UDDT INT01-01). To ensure equitable access to water and sanitation services, the political agency looks at the current status of the service provision and how well is the community accessing water and sanitation services. With this support, government institutions have been able to develop water sources (Limuru INT03-04). Alternatively, the NGOs get money from donors and use the money to intervene in the settlements. Even though government representatives have been placed, an instrument that registers the process is needed (Limuru INT04-04).

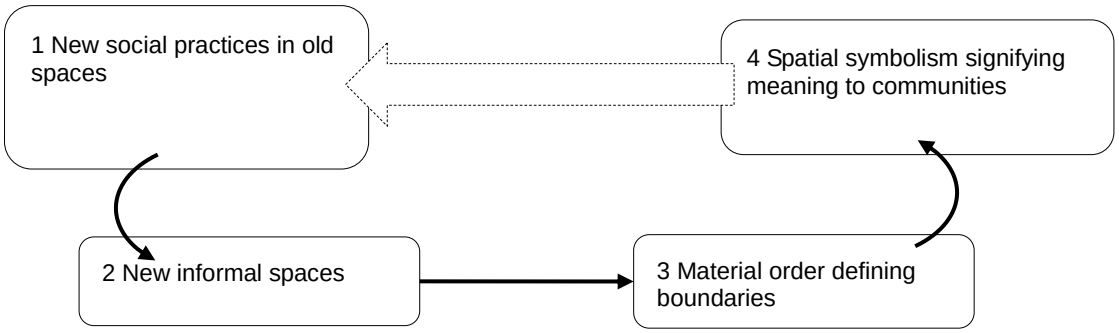
> *During active engagement, the community's place transcend and act as a means to transfer information resources and energy for improved water governance (Cole, 2012). By aligning design features with community opinions on how they interact with the water and sanitation systems, sustainable design features used to adapt for continuity of systems within set boundaries of acceptable limits can be implemented (Zari & Jenkins, 2009).*

According to the government representative, after they do the report, everyone that was there was invited through the meetings that were done, together with the partners who were involved. The community is trained and the facility is jointly managed, afterwhich the government representatives faze out. Ideally they're supposed to work like that (UDDT INT01-01). The WSTF may provide some finances for further training to enhance sustainability, while the NGOs in the area mobilise the community for us, where we tell them about the intended project. The Runda one, we were not the initiators, we were just one of the stakeholders, so that one I assure you we don't know how it works (UDDT INT05-01). In some cases "there are outstanding finishing and fittings, where the [contractor] went away, so now it's pending" (Limuru INT02-04). Similarly, the local government "don't know anything about those [ablution blocks] built in the town" (Limuru INT10-04_198). The local WSP who is a part of the contract to be signed for the running of the project don't know what is going on (Limuru INT10-04).

Successive samples coding

> *"New social practice which breaks away from the norm, is unacceptable to the existing society. New social practices of negative sanitation disposal have caused new interactions for the local community, and a new socioeconomic group to emerge. The social networks with the most potential for resiliency are rooted in the built environment, with nature, strength, and quantity of social ties being, in this instance influenced by development patterns" (Carpenter, 2013).*

Yes, they don't have training, the problem is we're doing too much, but again in terms of what happens thereafter. I think the relationship that should be important is post-construction. Yeah, who maintains those relationships are the ones which are very important, again it's something we need to fine-tune. But we need to partner, and concentrate on getting the ablution blocks into the informal settlements. But we need now to concentrate more in terms of the management and sustainability (Limuru INT04-04). But the local government are "out there, but are not aware" (Limuru INT10-04_90).



Successive samples coding

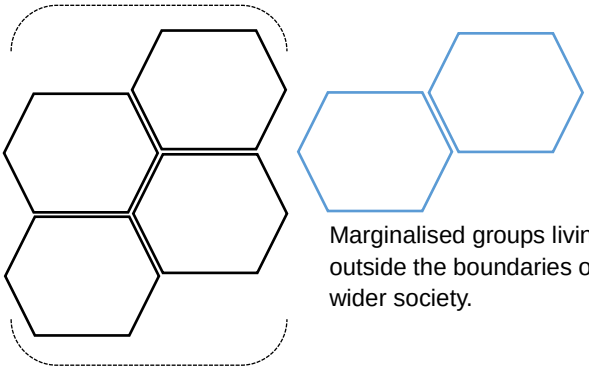
Building communities using assessments by CBOs

The role of communities in the programme for WSS projects in marginalised settings is influenced by the community members. As stated by UDDT INT01 “the government institutions approach the field with an open mind and request the opinion of the members where the project will be implemented”. This details the contribution used in the programming of the project for the design implementation to follow. The details of spatial appropriation and concept are done prior to the meeting with the community which limits the influence that their verbal contribution may have on the overall programme. As part of site identification, the government institution identifies the site where people are supposed to manage the ablution block and thereafter the handover is done to that group. Here, the government sees opportunities of forming partnerships with local NGOs who can take over soft issues such as capacity building and training (Limuru INT04). This is because the local government only has a customer-like relationship with the operators of the projects (Limuru INT10). In contrast other representatives in the same institution say that there are “workshops and seminars to raise issues” (UDDT INT05), it is assumed that training and capacity building are part of these workshops. It is stressed that “whichever way you want to look at it. We train them on how to maintain the projects, and how to maintain the systems and everything. We train them on how to run it, we train them on how to get revenue from it” (UDDT INT01).

Some of the respondents represent the initiative that government has taken to include social aspects in the implementation of WSS systems in marginalised settings. This sector is geared primarily toward the rural projects where the community can be directly involved as opposed to the urban where implementation of community programs have to involve the local WSP (Limuru INT03). In these projects “some we started with NGOs, where the [government institution] provides materials and they would mobilise labour through the community and other partners” (Limuru INT04). But after the implementation of the project there is still an obvious gap in the quality of service provided to the marginalised communities. “What support can the county government give [to] them? Continuous training, for example, is very important” (Limuru INT04). “It’s managed by intelligent people who are…I think you should visit one [rural project]” (UDDT INT01). This alienates people who live in informal settlements because of their circumstances.. On the ground, representatives have problems with the new partners for example “specific issues like the contract where there are disputes” (Limuru INT03)

They know their needs, they already know what those people need (UDDT INT05). “Yes so what I know is that from my point of view this is a disabled group and the toilet was put up there because there was a need. There are no toilets, the one which was there was in very

bad shape, and they were the ones who were there, there was a toilet there that they were managing" (Limuru INT10).



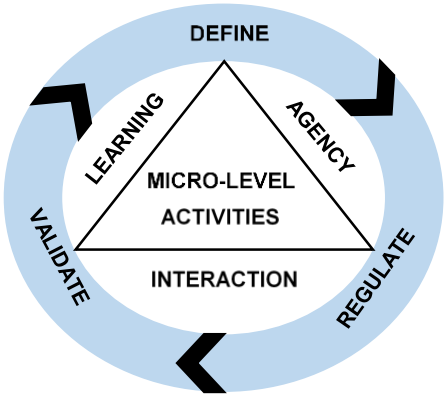
Wider society living in smaller communities

Marginalised groups living outside the boundaries of wider society.

Individuals can move between the marginalised setting and the wider society by changing their social practices. The people themselves are not marginalised it is the state of the space (the difference) that causes this separation

Therefore architecture can be seen to be regulating, validating and defining social practices. This is expanded by looking at the following:

- We define by; making known, perceiving
- Regulate by; adhering to norms, formalised rules
- Validate by; having respect, value hierarchy and through attributes in objects or practices that add value.



The relationship matrix above is the social process emerging from the developing programme for water and sanitation services and the implemented projects in marginalised settings. The main categories derived from the participation of marginalised groups and engagement of political agencies in service delivery are bound within the aspects that produce space. During this process places are created in which the marginalised community navigate within the rules and directives of political agencies. For effective programmes to be created, a clear understanding of the social process shown above is needed. It is difficult to serve in a community where one does not understand the social practices within which implemented initiatives are be used.

Notes