

Urban Displacement and Resettlement

Towards Facilitating Stakeholder Participation



Alice Nikuze

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Chapter 1- Introduction

1.1 Study background

Every year millions of people, especially in rapidly urbanizing cities in developing countries, are displaced from their origin communities and resettled in new locations. In addition to the fast growth of the urban population, rapid urbanization in developing countries is characterised by spatial transformations and socio-economic expansions through new urban infrastructure development, land readjustment, upgrading and redevelopment of existing urban areas (Meredith & Macdonald, 2017; Goodfellow, 2017), to provide housing and infrastructure for the rapidly growing urban population (van Noorloos & Kloosterboer, 2018). Urban (re)development projects in developing countries, either state-led or public-private partnerships, are also often expected to improve the city's image and attract new businesses to stimulate local economies (Andres et al., 2019; van Noorloos & Kloosterboer, 2018; Watson, 2014; Wu, 2004). Such urban redevelopments for city image-making often require land acquisition and, therefore, may cause displacement of a large number of urban dwellers (Liu, Lin, Fu, Geertman, & van Oort, 2018; Steel, van Noorloos, & Klaufus, 2017; Reshma, 2019). When investors are looking to profit from land-based investments, redevelopment projects often target old inner-city areas (Goodfellow, 2017). Sometimes, well-located high-density informal settlement areas in central locations may be targeted (Watson, 2014; van Noorloos & Kloosterboer, 2018; Robinson, 2003). Consequently, urban redevelopment projects in fast urbanizing cities are expected to increase the displacement and resettlement of informal settlement dwellers.

Furthermore, many informal settlements are established in hazardous areas such as floodplains or on steep slopes with unstable soils prone to landslides (El-Masri & Tipple, 2002; Lall & Deichmann, 2012). As many African cities present a tropical climate characterised by extreme rainfall events, hazards like floods and landslides may be common and increase the pressure for resettlement as a risk reduction measure (Douglas et al., 2008). Therefore, urban settlement of hazardous areas combined with the forecasted impacts of climate change substantially increase urban displacement pressure (World Bank, 2011; Correa, Ramírez, & Sanahuja, 2011; World Bank, 2011; IDMC, 2011). Disaster-induced displacement and resettlement is a strategy that many local authorities in developing countries are increasingly undertaking to

move vulnerable people out of high-risk areas (Tadgell, Doberstein, & Mortsch, 2018; Kita, 2017; Artur & Hilhorst, 2014; Correa et al., 2011). It is argued that such preventive or proactive resettlement could benefit global disaster resilience by reducing annual recovery spending and by preventing the loss of lives and destruction of already achieved development (Claudianos, 2014).

Both urban (re)development induced displacement and disaster-induced displacement and associated resettlement projects are being conducted, arguably to improve the standard of living in the cities, build city image and mitigate disaster risks, especially for the urban poor. In many developing countries, displacement and resettlement are often conceived as measures to fight poverty and restore urban ecosystems and, therefore, necessary to achieve the global commitment to sustainable development (Viratkapan & Perera, 2006; Termanski, 2015; Koenig, 2011; Takesada, Manatunge, & Herath, 2008; Patel, D'Cruz, & Burra, 2002). In African cities, the displacement and the associated resettlement projects of the urban poor are increasingly framed as unavoidable and justified to serve the public interest (van Noorloos & Kloosterboer, 2018). However, the implementation of resettlement is challenging.

Resettlement entails the physical removal of a population to a new location and this disrupts their social, economic and cultural structures and is often accompanied by loss of livelihood resources and increased impoverishment (Cernea, 1997b; Patel, Sliuzas, & Mathur, 2015). Resettlement processes are also known to be associated with social conflicts, contestation and resistance issues (Dwivedi, 1999; Jordhus-Lier, 2015). These adverse impacts and social conflicts are characteristics of the failure of many resettlement projects. The impoverishment risks of the affected people and the social conflicts have been a significant concern in several resettlement processes and thus require attention given the current displacements of urban dwellers in African cities, which are increasingly framed as inevitable (van Noorloos & Kloosterboer, 2018; Dwivedi, 2002).

Stakeholder participation, especially of the affected people, is vital in resettlement decision-making processes. Participation has been claimed as necessary to mitigate fear and misinformation among affected people, build transparency and trust, and provide an opportunity for the affected people to express their needs and have

their concerns heard. Thus, it is a potential strategy to mitigate the negative impacts and conflicts that can arise from the varying interests of stakeholders (Abebe & Hesselberg, 2015; Tadjell et al., 2018; Correa et al., 2011; Patel et al., 2015). However, participation of the affected people remains rare and passive in many resettlement processes (Kuyucu & Ünsal, 2010; Yetiskul, Kayasü, & Ozdemir, 2016). The planning and implementation of resettlement often follow a top-down approach that fails to meet the needs of relocated people (Abebe & Hesselberg, 2015). Consequently, there have been increasing calls for strengthened and improved participation in resettlement processes to enable collaboration, deliberation and dialogue between the stakeholders (Baert, Kervyn, Dongmo, & Suh, 2020; Abebe & Hesselberg, 2015; Dwivedi, 2002). However, such collaborative decision-making processes involving different stakeholders with diverse and divergent interests, values and sometimes conflicting perspectives are known to be complex and thus necessitate innovative approaches and appropriate support tools (Evers, Jonoski, Almoradie, & Lange, 2016; Aye et al., 2016).

This study investigates induced displacement and resettlement processes of urban dwellers and explores opportunities to strengthen stakeholder participation using innovative planning support tools. The scope of the study is limited to examining the implementation of urban induced displacement and resettlement to understand their impacts on the affected urban dwellers, the participation of the stakeholders, the factors that contribute to social conflicts and proposing a collaborative approach to strengthening stakeholder participation in resettlement site identification decision-making. Kigali city serves as a case study for the research. The motivation for selecting Kigali city and a description of the study areas are provided in section 1.5.

1.1.1 Induced displacement and resettlement

The terms *displacement* and *resettlement* both refer to processes involving the physical movement from a previous to a new residential location due to various reasons usually summarized as infrastructure and development projects, including urban redevelopment and transformations, conflicts, wars and environmental factors, including natural disasters (Miller, Ha, Da, Thuy, & Ngo, 2022; Robinson, 2003; Terminski, 2015). Oxford dictionary defines displacement as “*removal*

of a thing from its place; putting out of place; shifting, dislocation." In population movement literature, *displacement*, also known as relocation, is understood to refer to a process in which people forcibly leave their existing area of residence and settle in a new site (Dagnachew Shibru, Suryabhadgavan, Mekuria, & Hameed, 2014). The process is understood as forced relocation in the sense that in the absence of external push factors, people would not choose to leave their origin settlements. Whilst the term *resettlement* is used to refer to attempted planned relocation of people from an existing settlement to a new designated location, ideally accompanied by the effort to at least restore and, if possible, improve previous livelihoods and living standards of the relocated people, through the provision of resources and services to re-establish the lost livelihood assets (Cernea, 1988; Terminski, 2015).

Although defined as distinct concepts, there is some agreement that resettlement and displacement are interconnected. Terminski (2015) highlighted that the term displacement had been used in two different ways in population displacement studies. Displacement may be sometimes used to refer to relocation without adequate support mechanisms for the affected people to reconstruct their livelihood. In other instances, displacement is used to refer to the initial step (the physical relocation) in the resettlement process. Others have described resettlement as a rehousing process that cannot occur without dehousing or displacement (Deboulet & Lafaye, 2018). Rogers and Wilmsen (2020) also suggest that resettlement always requires a certain degree of displacement that influences the practices and conditions of settling and therefore, displacement can be seen as a feature of resettlement. Particularly in the current urban resettlement in cities in the Global South, scholars have defined resettlement as a political moment that reflects both a loss of place through displacement and the subsequent gain of place or space reproduction through resettlement (Beier, Spire, & Bridonneau, 2022).

1.1.1 Livelihood impacts and impoverishment risks in induced displacement and resettlement

Displacement and resettlement may bring some benefits to resettled informal settlement dwellers, including potential improvements in housing conditions and access to some basic infrastructure (Li & Song, 2009; Vickery, 2017). However, some evidence suggests that induced

displacement and resettlement are often accompanied by various social, economic and cultural adverse impacts such that they fail to benefit the affected people. Resettlement entails the physical removal of the population and the disruption of their livelihoods, including the foundation upon which social and economic productive activities are constructed, leading to impoverishment. The potential impoverishment risks are often manifested through several interlinked aspects such as loss of job and income, food insecurity, loss of access to common property resources, health problems, social disarticulation, marginalisation and uncertainty (Cernea, 1997b; Patel et al., 2015; Terminski, 2013).

Literature on the impacts of displacement and resettlement emerged in the context of large-scale development projects such as mining, conservation and construction projects of dam infrastructures that induced the resettlement of rural populations (Koenig, 2002; Terminski, 2013; Terminski, 2015). Because of that, the existing literature on induced displacement and resettlement has extensively covered the rural context. Those studies often reported the loss of productive agricultural land as the primary adverse impact that led to several other impoverishment risks for the affected communities, such as loss of job, income and food insecurity risk (Cernea, 1997b; German, Schoneveld, & Mwangi, 2013; Witter & Satterfield, 2014; Kenney-lazar, Suhardiman, & Dwyer, 2018).

Until recently, there have been limited studies on impacts and impoverishment risks in urban areas. The few available studies on urban displacement have shown that in urban areas, shopkeepers, shop-workers, artisans and people in small businesses experience more substantial displacement effects through loss of jobs and income as a result of the long distance between the relocation site and the original settlement (Patel et al., 2015; Habtamu, 2014). Long distances and related travel costs to their previous jobs may reduce the earnings of displaced people while increasing their expenditure (Gebre, 2008; Abebe & Hesselberg, 2015; Patel et al., 2015). Reduced net incomes lead to food insecurity and stress problems. Loss of access to opportunities for livelihoods and common facilities such as education, health facilities and markets is another risk faced by the resettled urban dwellers (Patel et al., 2015). Patel et al. (2015) have shown that the health condition of displaced people may be affected by lack of safe drinking water, poor sanitation and waste management in the new site.

When resettled people have lost their economic powers and confidence, their sense of injustice and marginalization will likely increase. Patel et al. (2015) also suggested that lack of information and participation increased stress and uncertainty among communities expecting to be displaced. Heightened uncertainty distracted livelihood activities and had strong negative impacts. Consequently, people affected by displacement and resettlement might bear adverse socio-economic impacts both before and after relocation (Terminski, 2015; Koirala, Hill, & Morgan, 2017).

1.1.2 Social Conflicts in induced displacement and resettlement

Resettlement processes are also known to be associated with social conflicts, contestation and resistance issues (Dwivedi, 1999; Jordhus-Lier, 2015; Kenney-lazar et al., 2018; Strauch, Takano, & Hordijk, 2015). Several studies reported strong local responses to land-based investment projects, including resistance to relocation and struggles for fair compensation, especially when resettlements were carried out under the public interest discourse or eminent domain (Jordhus-Lier, 2015; Lian, 2014). Displacement-affected people use various strategies, including those known as "political reactions from below" to use the term of Borrás and Franco (2013), expressed in passive actions such as writing letters of appeal (claims) and active actions such as protests to express dissatisfaction and claim for improved compensation and other rights such as participation in their resettlement decision making (Hall et al., 2015). These social conflicts and adverse livelihood impacts are persistently associated with population displacement and resettlement, often leading to a project's failure (Viratkapan & Perera, 2006). The lack of participation by key stakeholders, including those affected in the decision-making, has been identified as a significant factor that exacerbates impoverishment risks, social conflicts and resistance in resettlement processes (Patel et al., 2015; Heming & Rees, 2000; Patel et al., 2002; Corsellis & Vitale, 2005; ADB, 1998; Davidson et al., 1993; Bartolome, de Wet, Mander, & Nagraj, 2000).

1.1.3 Stakeholders' participation in resettlement planning

Active involvement of stakeholders (i.e., any person or organisation involved in or affected by a project), such as government actors, private partners, NGOs, and particularly the households to be resettled (i.e., affected people), is essential in resettlement planning (Baert, Kervyn, Dongmo, & Suh, 2020; Abebe & Hesselberg, 2015; Dwivedi, 2002). At the very least, participation in resettlement planning should give the stakeholders, especially those to be resettled, an opportunity to contribute and voice their concerns, needs and interests and support their learning about the costs and benefits associated with their relocation (IFC, 2019; ADB, 1998). Such participation of the affected people, also known as public participation, forms the foundation for transparency and trust between the affected communities and project officials and should be encouraged in the earliest planning stages to prevent misinformation and fear among the affected people (Johnson, Jain, & Allan, 2021). Scholars have argued that participation of the affected people is crucial for minimizing the negative impacts and impoverishment risks of affected people, particularly when such participation is accompanied by substantial resource provision for livelihood reconstruction (Abebe and Hesselberg, 2015; Mcdowell, 2013).

Participation can take different forms and levels (Arnstein, 1969; Guaraldo Choguill, 1996; Lawrence, 2006; Luyet, Schlaepfer, Parlange, & Buttler, 2012). For Arnstein (1969), the participation levels can be classified into three main categories from a high to a low level: degrees of citizens power (citizen control, delegated power and partnership); degrees of tokenism (placation, consultation and informing); degrees of non-participation (therapy and manipulation). According to Correa et al. (2011), participation in resettlement programs can be broadly understood as possessing two meanings: information exchange and, secondly, varying forms of joint decision-making. This latter form refers to Arnstein's highest level of citizen power. Following Arnstein, Nolte and Voget-kleschin (2014) also identified three forms of participation often found in land acquisition and resettlement processes: one-way process in which local people are informed about the project, two-way process in which local people can provide feedback to project initiators and lastly, participation as an interactive

process in which local people can shape the projects and its related plans.

However, several studies suggest that many induced displacement and resettlement projects have been characterised by symbolic participation practices limited to disclosing decisions made behind closed doors. These practices exacerbate the impoverishment risks for the affected people and increase contestation and social conflicts (Koirala et al., 2017; Patel et al., 2015). Where invited spaces for participation exist (i.e., the channels seeking public commentary like public hearings), these offer limited opportunities to the affected community to freely negotiate their needs (Shahidul & Swapan, 2016; Fung, 2015; Abebe & Hesselberg, 2015; Gebre, 2008). Due to the consequences associated with lack of meaningful participation, there is an increase of calls for participation forms that go beyond passive consultation and seek instead to be an interactive experience in which all the stakeholders, including those to be resettled, can play an active role in the planning process (Baert et al., 2020; Abebe & Hesselberg, 2015; Patel et al., 2015; Dwivedi, 2002). It is argued that interactive participation forms are needed to enable stakeholders to discuss the resettlement project's impacts in detail and support the residents in negotiating more favourable relocation conditions (Asif, 2000; Heming & Rees, 2000; Patel et al., 2002; Davidson et al., 1993; Usamah & Haynes, 2012). The mechanisms and tools to support the active involvement of stakeholders that enable dialogue, collaboration and deliberation in resettlement planning processes is a topic that still needs contributions.

1.1.4 Planning support system for collaborative planning

Planning support systems (PSS) are geoinformation-technology-based tools that offer user-friendly, flexible visualisation and analytical capabilities to support those involved in planning in handling the knowledge and information for their specific planning tasks (Geertman & Stillwell, 2009; Geertman, 2006). PSSs are essential computer-based tools to support participatory planning processes. Evidence suggests that PSS can help to strengthen participation (Flacke, Shrestha, & Aguilar, 2020). Besides enabling interaction and thus supporting collaboration, PSS tools were found to promote other aspects, including improved communication, social learning and consensus-building (Pelzer, Geertman, van der Heijden, & Rouwette,

2014a). Furthermore, there is evidence that stakeholders engaged in a PSS-supported collaborative setting get the opportunity to learn as individuals and as a group about the perspectives of others (Shrestha, Köckler, Flacke, & van Maarseveen, 2017). PSS facilitates, for instance, learning and knowledge exchange among participants by providing support for a dynamic exploration of information and open dialogue, such as allowing questioning assumptions and exchanging each other's perspectives (Bautista et al., 2017; Dana & Nelson, 2012; Flacke & de Boer, 2017; Shrestha, Flacke, Martinez, & van Maarseveen, 2018; Mcevoy, Ven, Blind, & Slinger, 2018; Flacke et al., 2020; Shrestha et al., 2017; Sheppard & Meitner, 2005). It is argued that by facilitating social learning, a PSS can help achieve various process outcomes, including stakeholders' priorities and preferences captured, knowledge integration and stakeholders' mutual understanding or consensus (Brown, Yeong, & Chin, 2013; Shrestha et al., 2017). Particularly in city planning, Pettit et al. (2018) argued that PSSs could facilitate discussions among key stakeholders, including city planners, policy-makers, experts, and communities. Such PSSs have been developed and are still being designed to provide tools to support various complex and sometimes conflict-ridden spatial planning problems (Shrestha et al., 2018; Flacke & de Boer, 2017; van Haaren & Fthenakis, 2011; Sharifi, Hadidi, Vessali, Mosstafakhani, & Taheri, 2009; Pert, Lieske, & Hill, 2013).

Despite their widespread availability, PSSs are not yet often used in many planning practices (te Brömmelstroet & Schrijnen, 2010; Geertman, 2017). Some of the reasons that potentially explain the limited use of PSS include low awareness of their existence; lack of recognition of their added value within the spatial planning community; insufficient consideration of contextual variables such as the planning issue at hand, user needs, and the specific policy context; lack of user-friendliness and other usability attributes such as transparency, ease of use and interactivity (Vonk, 2005; te Brömmelstroet, 2012; te Brömmelstroet, Pelzer, & Geertman, 2014; Jiang, Geertman, & Witte, 2020; te Brömmelstroet, 2017). Moreover, it is argued that past development efforts have mainly focused on PSS that can support the participation of planning practitioners and domain experts; and thus, PSS that support the involvement of citizens being directly affected by complex planning problems are yet to emerge (Shrestha et al., 2017; Flacke et al., 2020).

1.2 Research problem

Currently, urban development and redevelopment projects and preventive resettlement of households living in disaster high-risk zones are the dominant causes of induced displacement of urban dwellers in developing countries (Parnell & Walawege, 2011; Patel et al., 2002; Viratkapan & Perera, 2006). Despite their magnitude, as driven by the ongoing city image-making processes, there are limited studies on these types of urban displacement and resettlement processes, particularly studies on African cities. Few studies have attempted to contribute to studying induced displacement, including analysing impoverishment risks associated with resettlement in urban areas (Abebe & Hesselberg, 2015; Gebre, 2008; Habtamu, 2014; Patel et al., 2015). Understanding the nature of urban resettlement processes, particularly of informal settlements, including their governance, their impacts on the affected people and how their negative impacts could be minimized constitutes a field of research that needs more contributions, especially in sub-Saharan Africa. A better understanding of the specific features of these displacements and resettlements would help to design appropriate policies, strategies and procedures that fit the socioeconomic and political realities of the urban context. Some of the differences between affected people in rural and urban areas, justify the need of studies which focus on the urban context. For instance, in urban areas, the settlement location is extremely important with regards to access to livelihoods, food, basic infrastructure and services. In addition, the affected communities, mostly informal settlements, are likely to be more socio-economically and culturally heterogeneous, compared to those in rural areas (Koenig, 2001).

Scholars increasingly call for collaborative planning processes that allow greater involvement and stakeholder negotiations in critical decisions, such as identifying a resettlement site (Baert et al., 2020; Patel et al., 2015). Such collaborative processes that enable stakeholders' engagement and negotiations, allow for the exchange of perspectives and preferences among the stakeholders, and attend to the affected people's needs, are seen as critical to the positive process outcomes, including minimizing the social and impoverishment risks and conflicts (Abebe & Hesselberg, 2015; Dwivedi, 2002). Therefore,

understanding stakeholders' interests and preferences in resettlement constitutes a step towards their incorporation in decision-making (Baert et al., 2020). Yet, detailed studies on the preferences of key stakeholders in resettlement processes are rare. Existing studies of induced displacement and resettlement have focused on the associated impacts and only implicitly reported the preferences of the affected people (Correa et al., 2011; Li & Song, 2009; Patel et al., 2015; Reddy, Smyth, & Steyn, 2015; Uwayezu & de Vries, 2019a; Vickery, 2017).

Furthermore, implementing collaborative processes for complex planning problems that affect the lives and livelihoods of people in many different ways can be challenging (Cullen, McGee, Gunton, & Day, 2010; Ramsey, 2009). The various stakeholders, bringing different perspectives and understandings, require appropriate tools to effectively and equitably collaborate. Using maps in participatory resettlement planning, especially site identification, is increasingly recommended as an approach that could help to meet the expressed need for strengthening participation by allowing the affected people to easily articulate and communicate their preferences to other stakeholders, such as the planning experts and decision-makers (IFC, 2019; Reddy et al., 2015). However, scholars have shown that the traditional use of printed maps in spatial planning problems hardly supports meaningful participation and the goal of helping individuals to turn their tacit knowledge into explicit ideas (Al-Kodmany, 1999; Sheppard & Meitner, 2005). In this context, Planning Support Systems (PSS) emerged as innovative tools to strengthen participation (Geertman, 2006; Geertman & Stillwell, 2009; Pelzer, 2017; Pelzer et al., 2014). More specifically, in the form of computer-based interactive maps, PSSs are known to provide powerful visualisation, allowing stakeholders to see with their eyes on the fly the impacts of their preferences in a decision-making process (Flacke & de Boer, 2017; Pert et al., 2013). According to Al-Kodmany, (1999), such computer-based planning support tools contribute to effective public participation and are the only language both technical and non-technical participants can relate. Within this context, we see a need for a PSS tool that would enable the integration of different spatial attributes, the knowledge, values and perspectives of the stakeholders, including the affected citizens, in resettlement site selection.

1.3 Research Objectives

The research aims at developing planning support systems to support collaborative decision-making in resettlement processes. To achieve this aim, the following sub-objectives serve as building blocks:

1. To analyse the impacts of both the urban (re)development and disaster risks induced displacement and resettlement processes on the livelihood of affected informal settlement dwellers
2. To examine the governance practices in the resettlement of informal settlement dwellers and how it influences participation and local affected people's responses
3. To analyse and integrate key stakeholders' preferences in evaluating the suitability of potential resettlement locations
4. To develop and test a planning support tool that could support collaborative resettlement site identification

1.4 Research methodology

Overall, this dissertation follows a case study research approach. It applied different methods, including literature review, interviews, focus group discussions and PSS experimental workshops, as driven by the specific objectives. As the research involved human participants, relevant ethical considerations during data collection, analysis and research data management were observed (appendix 11). This section provides the overview and the rationale behind the selected methods and research design for each specific objective. Detailed descriptions of the methodological approaches applied to reach each research objective are provided in the respective chapters.

The **first objective** seeks to explore the impacts of urban induced displacements and resettlements on affected people. To reach this objective, a multiple case study strategy with embedded units of analysis approach was used. Kumar (2011) argues that a case study is relevant when the focus of the study is an extensive exploration and understanding of a situation or a phenomenon. Data for this study was

collected mainly through interviews with key informants, focus group discussions and interviews of households to be resettled from three communities Mpazi, Kangondo, and Kimisagara and those already resettled in three resettlement sites Ndera, Kanyinya, and Nyarurenzi. This use of multiple data collection is a common characteristic of case study research designs and was adopted to triangulate the research findings.

The **second objective** seeks to address the empirical question of how the governance practices, with a particular focus on participation, influence the reactions of resettlement affected people. This question is both descriptive and exploratory as it seeks first to find out how displacement and resettlement are implemented and then build an understanding of the responses of the affected people to the actions of other involved stakeholders, including the decision-makers. Therefore, a multiple case study strategy was found to be suitable for getting a whole picture of the local actions and responses of the affected people. The study involved two study areas, including Mpazi informal settlement upgrading and the on-site resettlement of affected households and off-site resettlement project of Kangondo informal settlement dwellers. By including both on-site and off-site resettlement cases the study considers variations in people's reactions in both contexts. Data were obtained from both primary and secondary sources. Primary sources included interviews (of both affected people and government officials) and a focus group discussion with affected households. Secondary sources were manifold, including newspapers and videos, and official documents on land acquisition and resettlement (including the national Expropriation Law and informal settlement upgrading strategy).

In the **third objective**, the research focused on understanding the stakeholders' preferences and developing a spatial model for resettlement site identification. To reach this objective, Multicriteria Decision Analysis (MCDA) approach was used. The approach is understood as a process of first identifying stakeholders' preferences about a problem, representing those preferences as multiple criteria with their assigned level of importance to be able to incorporate those preferences in the evaluation of alternative solutions. Therefore, in this study literature review and stakeholder interviews (planning officials and affected people from Gatsata research site) were applied to develop a spatial multi-criteria decision model containing spatial

criteria relevant to the context of informal settlement dwellers resettlement and to our study area context. A MCDA approach is used because it enables collecting stakeholders' preferences and dealing with the multiplicity of dimensions, multiple locational attributes in this thesis, that need to be taken into account in complex problems such as identifying a resettlement site.

The **fourth objective** seeks to develop and test a planning support tool for collaborative resettlement sites evaluation. This objective was achieved following a methodological approach consisting at developing a conceptual framework, designing the system, prototyping, and evaluating the developed system. This approach follows the idea of a system development life cycle model, a commonly accepted structured approach for describing the processes involved in information system development (Zhang, Carey, Te'eni, & Tremaine, 2005).

1.5 Context and study areas

The study focuses on Kigali city, the capital of Rwanda. The choice of Kigali city was made because it is one of the countries that explicitly undertook displacement in the name of urban (re)development projects and disaster risk prevention actions leading to urban dwellers' resettlement. According to Watson (2014), the city is among the few places in Sub-Saharan where poor urban dwellers, especially the informal settlement dwellers, are being systematically displaced to make room for new urban (re)development projects driven by the world city-making processes. In 2007, a City Master Plan was developed and approved in 2009 to guide all socio-spatial transformation of Kigali city. That Master Plan embodied the city's vision to become a destination for businesses and investments for the city's economic development (Manirakiza, Mugabe, & Nsabimana, 2019). The Master Plan explicitly suggests a radical transformation of Kigali into a slum-free city to create a modern and "model" city (Goodfellow & Smith, 2013). However, according to REMA (2013), 66% of inhabitants of Kigali were living in informal settlements, also known as slums in some contexts. In Kigali, these are "unplanned" settlements that lack basic services and adequate sanitation, but where most landowners have land titles that were offered during the land formalisation process in 2009 to recognise their property ownership legally. Given the largely unplanned growth of the city, which took

place well before the Master Plan design, radical spatial transformations requiring redevelopment of already developed areas are expected to lead to the displacement of many people, the majority being old informal settlement dwellers.

Many informal settlements in Kigali occupy prime land attractive to investors for real estate development. Such settlements are targeted by redevelopment projects and land acquisitions that are justified as being in the public interest and implemented through joint public-private efforts (Uwayezu & de Vries, 2019). The state can acquire any private land and, where necessary, transfer it to private companies in the public interest. This mechanism is regulated by the Expropriation Law 2015 (*Law No.32/2015 of 11/06/2015 Relating to Expropriation in the Public Interest.*, 2015). The landowners whose land is taken have a legal right to "fair" compensation. The law lists public interest projects, including "any activities to implement land use and development master plans." This clause has been interpreted by the City of Kigali officials, through its constituent districts, to include current urban renewal projects and redevelopment of land occupied by informal settlements (Goodfellow, 2014; Uwayezu & de Vries, 2019). According to Goodfellow (2014), the Expropriation Law gives incentives to investors to lobby the City of Kigali officials to consider property redevelopment projects as in the public interest (as far as the Master Plan is concerned), the support they need, given the high cost of land at market price and other land ownership issues that they may face during land acquisition. The communities displaced by the urban redevelopment projects are currently compensated with new houses at resettlement sites instead of cash compensation. Such resettlement is framed as a development opportunity for the affected people and a strategy to mitigate the proliferation of informal settlement.

Besides urban redevelopment motives, informal settlement dwellers in Kigali are also displaced under the banner of disaster risks mitigation. The landscape of Kigali is characterised by a series of hills separated by wetlands in between. The city has a lower mid-altitudinal range of 1,300m in the wetlands and a peak at 1,850 m on the top of Mount Kigali. The steep slopes in hills incline up to 45 or 50 percent, while in valley wetland areas, slopes are less than two percent (REMA, 2013). Due to this topography, some parts of the city experience landslides and massive runoffs during heavy rains (MININFRA, 2013).

Consequently, some informal settlements are located in risk-prone hills and wetlands, delineated as high disaster risk and undevelopable zones (Manirakiza et al., 2019). The government officials in Kigali advance environmental and disaster risk mitigation as motives for the clearance of such informal settlements and some scholars have argued that the clearance still is intended to create a safe and clean environment that attract investors as the primary goal of the most Master Plans in many African countries (Watson, 2014). The better-off landowners and tenants in such high-risk zones have been persuaded to relocate while the vulnerable and poor receive government support.

Thus, small-scale yet frequent resettlement processes of such needy people have been taking place since 2000 and are sponsored by the government through its three Kigali districts, Nyarugenge, Kicukiro, and Gasabo. While implementing such preventive resettlements of poor households, resettlement sites are selected and developed by planning officials in the concerned districts of the City of Kigali and allocate the new houses to the chosen beneficiaries.

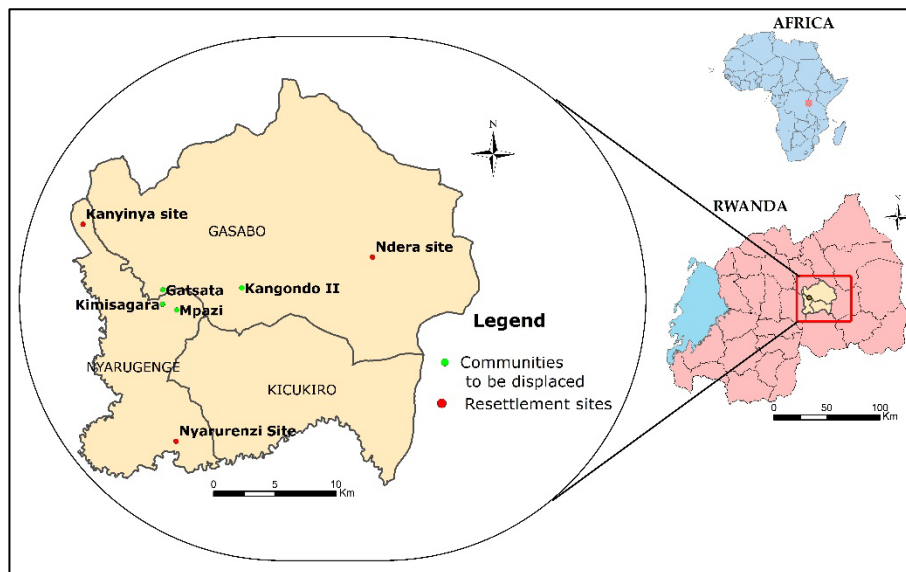


Figure 1.1: Map of Kigali City showing the locations of the study areas

Figure 1.1 shows the research sites, including four informal settlements that were targeted for displacement and three resettlement sites.

For communities to be displaced Mpazi, Kangondo II, Kimisagara and Gatsata were selected as representatives of the two main types of

displacements:(re)development-induced and disaster risk mitigation-induced that lead to resettlement of informal settlement dwellers in Kigali. Regarding the already resettled households, Ndera, Kanyinya, and Nyarurenzi resettlement sites were selected as recently established resettlement sites (after 2010) such that during interviews and focus group discussions, the resettled households would be able to recall their resettlement experiences and changes in their livelihoods.

1.6 Thesis outline

This thesis consists of six chapters. Chapters two to five form the core of this research, with each addressing one research objective.

Chapter one presents a brief research background, describes key concepts this study builds upon, sketches the research problem and outlines the research objectives. It briefly describes the case study area and the research methodology for each research objective.

Chapter two is the first empirical chapter and it addresses the first objective of this research. It explores the impacts of urban induced displacement and resettlement processes on the livelihood of affected informal settlement dwellers. The chapter highlights the identified livelihood impacts and impoverishment risks in the pre-relocation and the post-relocation phases.

Chapter three addresses the second research objective. It provides a detailed assessment of the implementation of resettlement processes of affected urban households. It explores the practices of the decision-makers and the reactions of affected households as observed in the study area. The chapter highlights some of the root causes/ the reasons of social tensions and contestation among the affected people and the strategies the latter use to interact with local authorities and claim for improved participation in the decision-making.

In **Chapter four**, the focus shifts to understanding stakeholders' preferences about resettlement site attributes. The chapter addresses the third research objective. It examines the preferences of two key stakeholders, the affected slum dwellers and planning officials, in the study area and highlights some discrepancies between the affected people and planning officials. It draws out the spatial implications for these differences by evaluating the suitability of residential land uses for resettlement within the study area.

Chapter five addresses the four and the last research objective. It presents an interactive planning support tool (PSS) to support a collaborative resettlement site selection process. The tool was developed based on the preferences identified in chapter four. The chapter explores to what extent such a PSS tool can support participatory resettlement site identification activity and it presents the usability evaluation results of the developed PSS tool.

Chapter six synthesises the findings of the study, gives reflections and contributions of the research. This chapter also highlights the limitations of the research and thus suggests directions for future research.

Chapter 2- Livelihood Impacts of Displacement and Resettlement on Informal Households - A Case Study from Kigali, Rwanda*

* This chapter is based on a published paper: Nikuze, A., Sliuzas, R., Flacke, J., & van Maarseveen, M. (2019). Livelihood impacts of displacement and resettlement on informal households - A case study from Kigali, Rwanda. *Habitat International*, 86, 38–47. <https://doi.org/10.1016/j.habitatint.2019.02.006>

2.1 Introduction

Urban redevelopment and disaster mitigation relocation policies in fast-growing cities of developing countries often include displacement and resettlement projects that are a substantial threat to informal settlements (Koenig, 2011; Patel et al., 2002; Patel et al., 2015; Terminski, 2015; Viratkapan & Perera, 2006). In Africa, for example, recently adopted urban visions and development plans of “new cities” or “modern cities” (Watson, 2014) are aimed at improving the living conditions of the fast-growing urban population and stimulating local economies (Meredith & Macdonald, 2017; Mitra et al., 2017). These urban plans require investments in urban infrastructure, including road construction, housing property development, and networks to provide other basic services. The implementation of such plans often has profound implications in terms of population relocation. Many of these plans include the reorganisation, redevelopment, and upgrading of large parts of existing urban fabric. Inevitably, this means the displacement of many urban dwellers, especially the poor, who are frequently located in central and well-located locations that are attractive to investors (van Noorloos & Kloosterboer, 2018; Watson, 2014). Urban land acquisition for public and private investments and the subsequent involuntary development-induced displacement and resettlement processes of urban households through urban renewal and redevelopment policies, are almost inevitable during the current period of fast economic development in many countries (Strauch et al., 2015; van Noorloos & Kloosterboer, 2018; Wang & Aoki, 2019). Informal settlements are often the most affected by urban renewal and redevelopment projects (Terminski, 2013). The households displaced by such urban development initiatives are either resettled on-site through land-sharing and site reconstruction (Davidson et al., 1993; Viratkapan & Perera, 2006) or off-site, away from their original settlements, mostly in urban peripheries or rural areas (Davidson et al., 1993; Koenig, 2011).

Some informal settlements may also be established in hazardous areas that are prone to disaster risks (Kohli, Sliuzas, Kerle, & Stein, 2012; Lall & Deichmann, 2012; UN-Habitat, 2010b). Disaster-induced displacement and preventive resettlement policy addresses populations in high-risk locations for whom resettlement may be the

best viable option (Choi, 2015; Claudianos, 2014; Correa et al., 2011; Cronin & Guthrie, 2011; Kita, 2017). It is increasingly implemented as one of the risk mitigation options identified by the Intergovernmental Panel on Climate Change (IPCC) (Tadgell et al., 2018). Preventive resettlement increases the number of informal settlement dwellers displaced from their original communities.

In general, governments in many developing countries have the conviction that the process of slum clearance will contribute to building a city's image and this is part of what Goldman (2011) called, new "city-making" to attract more investors and increase opportunities for economic growth (Watson, 2014; Wu, 2004). Studies on the implications of new "city-making" in Africa, especially Sub-Saharan Africa, are still lacking (van Noorloos & Kloosterboer, 2018). This study focuses on the emergence of such city-making and disaster risk reduction processes in Kigali, the capital of Rwanda, and their impacts on affected slum dwellers.

Concerns have been raised on the impacts of the planning and implementation of displacement and resettlement on affected urban poor communities. Scholars have demonstrated improvement in housing conditions and access to some basic infrastructure for resettled urban poor households, both objectively and in terms of subjective evaluations (Li & Song, 2009; Vickery, 2017). Several studies, however, have shown that induced displacements are frequently accompanied by losses of livelihood resources and lead to the impoverishment of the displaced people. Those impoverishment risks are manifested through several interlinked phenomena: landlessness, homelessness, joblessness, loss of access to common property resources, marginalisation, food insecurity, morbidity and mortality, social disarticulation and uncertainty (Cernea, 1997b; Patel et al., 2015).

In African cities, the displacement and resettlement projects of the poor are often framed as unavoidable (van Noorloos & Kloosterboer, 2018), especially when driven by reasons of so-called public interest. Scholars argue that the impacts of such a "necessary evil on the livelihood of affected people will continue to raise concerns" (Dwivedi, 2002; van Noorloos & Kloosterboer, 2018). However, despite the magnitude of current urban displacements, especially in Africa, limited

analysis has been carried out on their effects on the livelihoods of affected informal settlement dwellers.

For Burdge (1987), the impacts of development projects, including relocation projects, may vary depending on the project planning stages. (Scudder, 1981) distinguished four stages of relocation: 1) the planning, infrastructure, and recruitment phase, which is the period of the development of relocation plans, 2) the transition, when local communities learn about the project, 3) the potential development stage immediately after relocation and adaptation period to the new site, and 4) the incorporation stage, when the resettled households start feeling at home in their host community. In the first two stages (the period before physical relocation), households may face various stresses and uncertainties. While in the third stage (the immediate period after physical relocation), they face socio-economic problems leading to a decrease of their living standard and perhaps severe deprivation.

Recent studies argued that in addition to stress, households to be relocated might bear adverse socio-economic impacts even before their actual physical relocation, (i.e., the first stage referred to in this chapter as the pre-displacement period (Koirala et al., 2017; Patel et al., 2015; Terminski, 2015). Despite these examples of pre-resettlement livelihood changes, usually it is the livelihood change after moving to a new site that have been the central concern in most studies (Abebe & Hesselberg, 2015; Patel et al., 2002; Quetulio-Navarra, Niehof, Van der Horst, & van der Vaart, 2014; Vickery, 2017). Little attention has been paid to the systematic understanding of the pre-displacement impacts on the livelihoods of households waiting to be displaced, particularly the informal settlement dwellers (Koenig, 2011). This knowledge gap leads to a narrow conceptualisation of potential effects induced by the planning and implementation of those displacement processes. N. Choi, (2015), for example, suggested that livelihood security before displacement contributes to the resilience capacity and coping ability after relocation. Therefore, it is worthwhile to address both the pre- and post-resettlement impacts to inform livelihood protection and restoration in projects that include household displacement.

Against this background, the chapter contributes to a more nuanced understanding of the effects on the livelihood of affected informal households during pre- and post-relocation phases of displacement in Kigali. Given its recent experiences with urban development and disaster-induced slum displacement and resettlement projects with its city-making ambition, Kigali is an ideal case to study. It provides a rich picture of such projects and their impacts. This knowledge is essential to planners and policymakers for effective planning and implementation processes that will minimize adverse impacts on affected households.

In the following section, we give a brief background to the study area, the selected research sites, and introduce the research methodology. Section 2.3 discusses the identified displacement and resettlement livelihood impacts on affected informal settlement dwellers in Kigali. In section 2.4, we present our conclusions and discuss the implications of the research findings and recommendations for future research directions.

2.2 Methodology

2.2.1 Study area background

This study was conducted in Kigali city, the capital of Rwanda. Kigali is among the fastest urbanising cities in East Africa. Its population increased from around 6,000 people in 1962 (Manirakiza, 2014) to currently more than 1 million (MINECOFIN, 2014). Most of residential areas were constructed in the immediate areas around the Kigali Central Business District (CBD) and other commercial areas. Like many cities in the Global South, Kigali faced the challenge of uncoordinated urbanisation, and large parts of the urban population are living in unplanned informal and hazardous settlements (UN-Habitat, 2010).

The adoption of the Kigali Master Plan (KMP) in 2013 was proof that the city has a clear and ambitious vision to be one of Africa's "modern cities", albeit at the expense of a large-scale urban population displacement. Moreover, Kigali's "slum-free" city vision is seen as part of its branding as a place for business and investments, as a safe and clean modern city (MININFRA, 2013). However, its rapid growth has been accompanied by substantial unplanned development, which has

led to large parts of its population living in informal settlements, including some located in landslides or flooding related disaster high-risk zones. In addition to older existing developments, all informal settlements, whether located in high-risk zones or not, pose a challenge to Kigali's modern, slum-free vision. Thus, the KMP envisions major transformations of many existing developed spaces, implying the displacement of many people, especially informal settlement dwellers and their livelihoods (Kigali city, 2013).

Today, Kigali's CBD is undergoing the rapid redevelopment of old commercial areas. In terms of clearing existing informal settlements, the Government of Rwanda (GoR), through the Ministry of Local Governance and the concerned districts, is currently financially able to resettle only the very poor vulnerable households from what have been identified as undevelopable high-risk zones (RHA, 2013). Further, the GoR relies on its partnership with private property investors to acquire and redevelop the developable land occupied by informal settlement areas (MININFRA, 2016). Land acquisition by these investors, for the purpose of implementing the Master Plan, is justified as an act of public interest. In these land acquisition processes, city authorities currently support compensation in kind, namely replacement homes in resettlement sites over cash compensation, to mitigate the formation of new informal residential areas by expropriated slum dwellers. Therefore, in Kigali, informal settlements located in zones of high disaster risk and those located on land attractive to investors, are threatened by both disaster preventive resettlement and urban redevelopment induced resettlement processes, respectively.

The KMP was produced following a top-down approach. The spatial planning and decision-making took place without involving and consulting the citizens (Nsabimana, 2018). Similarly, informal households do not participate in the planning and decision-making of the current resettlement processes. Government actors, sometimes where applicable, together with private investors, typically make important decisions related to compensation and resettlement sites, without prior consultation with the households to be displaced.

2.2.2 Research sites

This research was conducted in six research sites, including three informal settlements to be displaced and three resettlement sites in Kigali City.

Table 2.1: Overview of research sites for the first research sub-objective

Communities to be displaced	Mpazi	Kangondo II	Kimisagara high-risk zone
Intervention/project	Demolish old houses and redevelopment of the area through construction of apartments (land-sharing)	Demolish old houses and use the area for investment in high standard residential houses (site redevelopment)	Demolish old houses and use the area for recreation (site clearance)
Relocation option of affected households	On-site	Off-site	Off-site
Number of affected households	Unknown	1623	Unknown
Status as of (actual date)	In construction of model apartments	In construction of all apartments	Enumeration (for the second time) of all the households that will be relocated
Lead agency	Kigali City and Nyarugenge District	Kigali City and Gasabo District	Ministry of Local Governance
Sponsorship	Partnership of Kigali City and private investors	Partnership of Kigali City and a private company	Government of Rwanda
Resettlement sites	Ndera	Kanyinya	Nyarurenzi
Number of resettled households	10	14	100
Resettlement period	2016	2012-2014	2013

Three communities to be displaced: Mpazi, Kangondo II, and Kimisagara were chosen, after consultation with Kigali City officials, to be broadly representative of the different types of projects that induced displacement of a large number of informal settlement dwellers in Kigali (Table 2.1).

The Mpazi site is an area located close to and along a large water channel. The land up to 14 m away from the water channel is highly exposed to recurrent flooding and is categorized as a high-risk zone. The households living on the Mpazi site have been targeted to be resettled on-site, but in a safe location. The Mpazi project proposes to demolish a large area of the informal settlement, which will be redeveloped. Apparently, not all of the site is considered to be undevelopable. Part of the land will be used to construct on-site new decent homes for all the affected residents, including those who are currently living in the high-risk areas along the water channel, and the remaining land is for investment in low-income dwellings by a private investor. Sample models of the proposed apartments to accommodate the affected households are under construction (Figure 2.2).



Figure 2.1: Satellite image showing Mpazi research site to be demolished and redeveloped, Source: Esri Imagery, 2018



Figure 2.2: Construction of apartments for affected households at Mpazi research site, Source: Ernest Uwayezu, 2018

The Kangondo II site, also known as “Bannyahe”, is among the largest informal settlements in Kigali. It is surrounded by new, well-planned, high-end residential areas. Kigali City, in partnership with the Savannah Creek Development Company, wants to transform the developable part of the slum (part of the area is located in the wetlands, and hence, not developable) into a modern high-end residential area to house upper-middle- and middle-class households. Therefore, the existing, mainly low-income community, is to be demolished to allow that investment. The households living in Bannyahe are to be relocated off-site in a Busanza resettlement site, located at the periphery of the city, approximately 15 km away from Bannyahe.



Figure 2.3: *Satellite image showing Kangondo II research site to be demolished and redeveloped*
Source: Esri Imagery, 2018



Figure 2.4: *Impression of the proposed apartments for households to be displaced from Kangondo*
Source: <http://www.newtimes.co.rw/section/read/219817>

The Kimisagara site is part of a long-established informal settlement located on a high and steep slope. Many houses in the area are built on gradients higher than 40%, and they lack stormwater drainage and road accessibility. Due to its location and physical characteristics, it is

categorized as a very critical high disaster risk zone. During every rainy season, landslides cause the loss of lives and damage to homes. Therefore, the households living there need to be resettled to a safe location. The priority sites to be relocated cover three cells: Kimisagara, Katabaro and Kamuhoza, however, this research covered only the Kimisagara cell.



Figure 2.5: Satellite image showing Kimisagara research site,
Source: Esri Imagery, 2018

Ndera, Kanyinya, and Nyarurenzi are the three resettlement sites selected. These are resettlement sites where the poor households who have been relocated from different high-risk zones were given new houses. These sites, where resettlement occurred within the last five years, were selected to better enable households to recall changes in their livelihoods. Table 2.1 provides an overview of the characteristics of these research sites.

2.2.3 Data collection and analysis

The research used primary data collected using household interviews (185), focus group discussions (2), key informant interviews (5), and

field observations during fieldwork conducted between May and September 2017.

Interviews, both with households to be displaced (appendix 1) and those already resettled (appendix 2), were carried out to obtain insights into their experiences with displacement. Systematic sampling was used to select respondents. The first household was selected randomly, and thereafter, every second household was selected. However, in two small resettlement sites, Ndera and Kanyinya, all available households were interviewed (see Table 2.2).

Table 2.2: *Respondents of the household surveys*

Communities to be displaced	No. of HHs (in sample)	Distribution (%)
Mpazi	31	20
Kangondo II	68	45
Kimisagara	52	35
Total households to be displaced (HHs)	151	
Resettlement sites		
Ndera	6	18
Kanyinya	6	18
Nyarurenzi	22	64
Total resettled households (HHs)	34	

Focus group discussions (FGDs) were also organised in the Mpazi (appendix 3) and Ndera (appendix 4) sites, and each included seven to nine participants. The small group facilitated easy handling of the group and promoted in-depth discussions. In the community to be relocated, the discussions focused on feelings about the displacement and potential impacts. On the resettlement site, the discussions focused on their expectations and experiences of resettlement.

Interviews with five key informants (appendix 5) from Kigali City and the Nyarugenge District, provided general information on the process of displacement of informal settlement dwellers in Kigali. Officials were selected purposefully, according to whether they had been directly

involved in the planning and implementation of displacement and resettlement projects in Kigali. Lastly, at all sites, the observation was used to gain insights into the general social and economic conditions, as well as existing spatial and states of physical elements that are important in the daily life of the households, such as roads, facilities, and services like transportation.

For indicators to assess impacts, the livelihood assets framework (DFID, 2001) was used based on the context of Kigali. In addition to the assets of the urban poor identified in the existing literature (Moser, 1998; Rakodi & Lloyd-Jones, 2002), a semi-structured questionnaire was used to identify crucial livelihood assets of informal settlement dwellers and how they are affected by relocation. The collected data covered a wide range of topics, including employment, income, land, location, and housing, as well as access to common property resources, infrastructure and services, and social organisation before and after resettlement. The impacts were identified and their indicators were summarised in five livelihood capitals: social, natural, financial, physical, and human.

2.3 Livelihood Impacts of Informal Households' Displacement and Resettlement in Kigali

This section discusses the livelihood impacts experienced by informal households during two stages of their resettlement processes: the pre-relocation stage and the post-relocation stage.

2.3.1 Livelihood Impacts in the Pre-Relocation Stage

Insecurity of tenure before relocation

The insecurity of tenure was the immediate adverse impact experienced by informal households yet to be displaced in Kigali. According to van Gelder (2007), involuntary relocation can lead to a form of tenure insecurity he described as the "perceived insecurity of tenure". Such perceptions of insecurity were experienced by many dwellers, even where the majority already possessed legal land titles. Two main reasons could explain their insecurity. First, for the households living in high risks zones, only the very poor are resettled by the government and compensated with new homes. However, at

the time of the survey, which households that would be entitled to new homes were not yet known. Most of the respondents living in high-risk zones placed themselves in a relatively weak negotiation position. For example, in regard to their compensation, most of the households located at high risk knew that they do not have any right to compensation until the city authority recently decided that all the houses will at least be given land at a safe location¹. Second, the households who knew they would be compensated, for example, in Mpazi and Kangondo II, where the land was acquired by the private owner for further investments, also perceived insecurity of tenure as result of the ambiguity of whether their displacement was caused due to disaster mitigation or development projects. This ambiguity was found to be associated with the feeling that landlords will not receive fair compensation as the authorities used the label, "high-risk zone", to justify the demolition of the slums, while their land will later be acquired and redeveloped by investors. For example, one respondent cited insecurity concerning property value:

*...our wish is that a fair property valuation should be carried- without undervaluation saying that we are living at high-risk zone.*²

Living in deteriorated structures and lack of toilets before relocation

The informal households to be displaced often had to endure the risk of living in deteriorated structures with inadequate sanitation for two main reasons. First, the households cited uncertainty due to the lack of clear information about the relocation project, especially about "when" it will take place, as a major reason for stopping the self-initiated upgrading activities that ultimately result in them living in leaking houses without functioning toilets. This argument of distraction to carry out some maintenance activities in the pre-relocation phase aligns with findings in other studies. Patel et al. (2015), for example, found that uncertainty affected households stopped some of their economic activities before the actual move. Second, the affected households reported that external restrictions on doing maintenance to their homes were another reason that exacerbated their poor

¹ The decision was made after our fieldwork as informed by the Kigali City engineer at the time of our fieldwork.

² From focus group discussion at Mpazi site.

housing and sanitation in the pre- relocation stage. There is also a concern that degraded houses may also be valued lower and receive less compensation. A resident in Mpazi raised the issues of uncertainty and restrictions, and the associated negative impacts as follow:

We accept that we should be resettled for a better living condition. However, there is no clear written information about our displacement and when it will take place. What if the physical relocation takes place after two years of waiting? Now we are restricted to do any maintenance of our houses or construct new toilets (WC) or change a roof in case of leakages because we will be displaced. Do they want to relocate us when our houses are self-demolished?

Financial instability before relocation

In the pre-relocation stage, the relocation process induced several impacts on various financial assets described by many households as financial instability. According to landlords who owned homes for rent, a decrease and potential loss of income from rental houses had a significant impact on the financial capital in all three communities to be relocated. In Mpazi and Kangondo, both existing and new tenants refused to pay rent for extended periods by taking advantage of uncertainty about the relocation time.

Similarly, Rakodi and Lloyd-Jones (2002) argued that livelihood assets are linked; many households reported that the loss of income led to the loss of investments, savings, and access to loans. According to the respondents, the rental income constitutes investment capital for various livelihood needs, for example, paying education fees for family members or running a small business. Therefore, the loss of such rental income has significant effects in some households. Moreover, the households that were waiting to be relocated also reported a loss of saving capacity due to a decline or loss of income. Last, as a consequence of loss of saving capacity, households reported the loss of access to loans, especially in their community-based saving groups, due to their failure to make contributions.

Differentiation and loss of social cohesion before relocation

Previous studies pointed out that relocation may destroy existing patterns of social networks and cohesion because people are separated (Cernea, 1997b; Robinson, 2003). Our study found, however, that such social disarticulation can also happen even when the affected people are still living in the same community. In the Mpazi and Kangondo sites, the proposed compensation regime is that all affected landowners will receive one house as a compensation, regardless of the number of houses they previously possessed. We found that this compensation principle led to differentiation based on the conception of “winners” and “losers” in the projects. The multi-house landlords saw themselves as the losers compared to other landowners. Respondents reported divisions among the affected households based on these two groups.

Previous scholars argued that division among the communities before resettlement might result from the different resistance and acceptance behaviour of affected households (Koirala et al., 2017). In Mpazi and Kangondo, the social division did not appear to be based only on acceptance or resistance of the displacement, but also on differentiated interests in terms of compensation. Another reason mentioned, which led to division, is that some people are considered to be better informed about the projects than others. Differences in information are perceived as important in successful negotiations, according to their needs and interests. Mitra et al. (2017) showed a similar effect of community group differentiation (between tenants and homeowners in their case) in relocation on social cohesion and suggested that meaningful consultation of the affected households, awareness campaigns, and dialogue were essential to mediate the interests of all affected people.

Furthermore, this study found that during the pre-displacement phase, the community-based savings groups (for saving and borrowing money) were disrupted and did not operate properly. As a consequence of both the loss of income and the lack of information about the exact time of relocation and on how relocation will take place, the savings group members became hesitant to contribute to a group due to their uncertain future.

Food insecurity, nutrition and health risk before relocation

In the communities to be relocated, the majority of respondents, especially the landlords, reported a condition of food insecurity due to loss of income from rentals. To cope with this food insecurity, these households reduced their food consumption and changed their diets by buying the cheapest food products, leading to reduced nutrition levels. Similar to findings of other studies, several forms of stress were also reported by all slum dwellers facing relocation. Koirala et al. (2017) found that people to be relocated might experience stress due to their worries and fears of the future. Our study found that the most mentioned cause of high stress in the pre-displacement phase was general uncertainty that arose from the time the projects were announced. Due to the lack of information about the relocation project, especially information about compensation, many affected people were pessimistic. Thus, they perceived more negative impacts of their relocation than its positive outcomes.

Such negative perceptions among the households to be relocated could be observed when they were asked a question about any expected positive impacts from the displacement. Most of the respondents replied that the positive impacts would depend on whether they receive a fair compensation package. This was particularly evident for the households that have to move out of high-risk zones, as they knew that the government would only compensate the very poor. They often mentioned the risk of becoming homeless in the future as their major cause of stress.

2.3.2 Livelihood Impacts in the Post-Relocation Stage***Lack of privacy and poor sanitation after relocation***

For the resettled households, being relocated out of disaster risk and receiving a new home were the most positive outcomes of their resettlement. However, while the resettled households acknowledge an improvement in housing conditions, our in-depth interviews revealed that some of their expectations, for example, regarding housing and access to essential services were not met. The design of their homes was alleged to be culturally and context insensitive, leading to various impoverishment risks. First, many respondents in the resettlement

sites reported a lack of privacy because they see or hear what is going on in the neighbouring house. This lack of privacy was attributed to semi-detached homes with ineffective acoustic isolation. At the Ndera site, such lack of privacy was mentioned as a critical concern as it was among the factors that exacerbated conflicts (social disarticulation) among the resettlers.

Second, the risk of poor sanitation due to indoor toilets and lack of waste dumping space was another negative aspect of the homes reported. In Nyarurenzi, for example, people complained about their modern toilet. For them, these toilets require a lot of water to ensure hygiene, while there is insufficient water in the area. In addition, all three resettlement sites are located in peri-urban areas, where household wastes are dumped in compost pits in fields. However, the resettled households do not have space to create compost pits and this deteriorates their household's sanitation. These dissatisfactions show that the housing design may have been done without considering the needs and interests of the resettled households and that there was insufficient attention to raising awareness and service provisions for solid waste management.

Loss of space, live in overcrowding and homelessness risks after relocation

The practice of constructing small houses for rent or establishing home-based income-generating activities means that for most informal settlement dwellers, land and housing are valuable livelihood assets. This study found that the affected households are much concerned about the loss of their land in two senses. On the one hand, the households to be displaced out of disaster risk zones live in fear of becoming landless if they are not compensated. On the other hand, in Mpazi and Kangondo, the concern is that their new homes will be too small compared to their family size. With respect to the size, the households in Mpazi and Kangondo anticipate the risk of living in overcrowding after relocation. A respondent described the risks in this example:

...for instance, when a son in a family gets married, he is given a small house by his father or mother, who possesses more than one house in the settlement. However, the land title for the land stays in the name of the parent. The resettlement project will only give a house of either

one room or three rooms to someone who possesses a land title. In that case, the father will have to squeeze with his son's family. We will live in overcrowding. Otherwise, the son will become homeless.

Increased distance to basic infrastructure and services after relocation

Access to basic infrastructure and services is interpreted in the context of Kigali as access to facilities, such as the city centre, public schools, health centres, markets, water, electricity, and public transportation. Our research found a mixed picture of access across the three resettlement sites. In Ndera and Nyarurenzi, resettlers claimed a lack of public transportation services, and consequently, long distance trips to the bus stop, which they reach by using motorcycles at high costs. While most of the resettled households reported reasonable accessibility to health and education facilities, respondents in Nyarurenzi complained that their children need to walk a long distance for more than 45 minutes to primary schools. In general, resettled households in all three sites reported an increased distance to the city centre and fair markets located in the inner-city.

The households to be displaced off-site anticipate similar impacts due to the loss of good accessibility to important locations. However, the households to be resettled on-site (the Mpazi community) were concerned by the potential school dropout rate due to a loss of income.

Loss of employment and income after relocation

The majority of resettled heads of households lost their jobs, which led to a loss of income.

Table 2.3: *Employment changes after relocation (Before-After)*

Resettlement site	Kanyinya	Ndera	Nyarurenzi	Overall
Non-occupation	1-2	2-6	4-12	
Laborers	1-1	2-0	6-3	
Merchants	1-0	1-0	1-0	
Small business owners	2-0	1-0	1-3	
Others	1-3	0-0	8-5	
% of HHs who lost jobs	16%	66%	36%	38%

Note: HHs = Heads of Households

As shown in Table 2.3, the study found that the number of the resettled heads of households without occupations increased after resettlement. The number of workers in each of the most common employment types before relocation slightly decreased after their relocation. These changes in occupations and loss of jobs were attributed to the increased distances to places of job opportunities, the increased distance to marketplaces, increased distances from customers, unfamiliar communities, the cost of transportation to areas of job opportunities, and a lack of job and business opportunities in the new area. This lack of employment opportunities resulted in the risk of inability to use previous skills for income generation. Among the lacking opportunities that meet the skills of the resettled people include informal employment, such as buying food from primary markets and reselling in the neighbourhoods, becoming home-based merchants and casual workers.

All households to be relocated, regardless of their relocation options, anticipated similar risks of losing employment opportunities and income. Renting small house units for income generation and using space in their houses for home-based shops is common in many informal settlements in Kigali. Thus, according to the households, receiving only one small house as compensation will result in a loss of space for income generation. Specifically, the owners of homes for rent anticipate a loss of income from renting small houses. The loss of income and loss of space is the reason most of households to be displaced on-site perceived the risk of losing their self-employment as a result of the loss of capital for investment and operational spaces. Moreover, in addition to the loss of self-employment opportunities, the households to be relocated off-site also anticipate a loss of wage employment as a result of distance.

The loss of employment is at the core of the loss of income. However, the households to be displaced from Mpazi and Kangondo sites also believe that the value of the modern homes they will be given is likely to be higher compared to the value of the homes they currently own. Therefore, respondents in these two communities reported that they might be obliged to take bank loans, which they described as “a

burden" that will affect their income and the affordability of the new houses.

Food insecurity, nutrition and stress after relocation

The resettled households have also experienced food insecurity and poor nutrition. They believe that life is expensive in their new locality. For them, the cost of locally supplied food is high due to the cost of their transportation expense from the main market located in the urban area to their peri-urban location. Respondents reported that the high cost of locally available food coupled with the loss of income increased the risk of eating once a day. Most of the resettled households were deprived of some foods they were used to eating before relocation.

Moreover, the households to be displaced discovered this food insecurity risk after their relocation. While the most commonly mentioned reason for the anticipated food insecurity after relocation is the loss of income, the households to be resettled off-site anticipate more risk of loss of access to fresh and inexpensive food products in resettlement areas. Slum-dwellers are familiar with affordable products they buy in the informal businesses mostly available in inner cities, and vibrant neighbourhoods in the inner cities, including the slums themselves. Therefore, the households see distant relocation to the peri-urban area as a barrier to access to fair markets, which will result in loss of access to inexpensive products while their income has been reduced.

Loss of social networks and marginalisation after relocation

Informal households in Kigali claimed that social networks are crucial in their everyday lives. Informal settlement dwellers depended on the networks as one of their job searching strategies. Merchants and small boutique owners reported that they rely heavily on the networks with the wholesalers located in the inner-city where they get commodities and pay after selling them. Others mentioned that friends in their networks are the ones who inform them when there is a job opportunity. Also, community-based savings groups provide crucial financial support opportunities. Despite this importance, resettlement can destroy existing social networks.

We found that social network destruction was a reality in most resettled households. Most of the resettled respondents indicated that they could not maintain their pre-relocation social networks because of the increased distance from their original settlements. Going back could involve high transportation costs while their income has decreased. In some resettlement sites, households did not lose only previous networks but could not form new networks in their resettlement areas. This is the case, for example, in the Nyarurenzi site, where the resettled households were marginalised by the host community. In this community, the resettled households reported that they are considered a community apart.

For the households to be displaced, the anticipated impact on their social networks vary according to the relocation options. Respondents to be resettled on-site perceive the risk of losing customer-seller networks for home-based businesses. Such a loss of customers in the context of on-site relocation was perceived by the households who will be rehoused in high-rise buildings. On the other hand, the households to be displaced off-site perceive the risks of completely losing their existing social networks, including community-based savings groups and customer-seller networks.

2.4 Conclusions

The current wave of modernisation in cities of fast developing countries in Africa is characterised by different ambitions that are increasing the number of urban populations displaced from their original communities, especially informal settlement dwellers. This research has provided insights into the impacts of such displacement and resettlement processes on the livelihoods of affected households in Kigali, Rwanda. Our findings reinforced the argument that relocation of the population is a complex process that induces various negative socio-economic impacts on the livelihoods of affected households, leading to significant impoverishment risks. One main finding was that informal households affected by resettlement processes in the name of city modernisation experience the negative livelihood impacts not only after physical relocation, but also before their physical relocation to a new living environment. In addition to the psychological impacts, such as stress and fear in the pre-displacement phase, informal settlement

dwellers waiting to be relocated in Kigali experienced several adverse socio-economic impacts, including insecurity of tenure, financial instability, social divisions, and food insecurity. Compared to other landowners, the owners of houses for rent (landlords) are more vulnerable to impoverishment risk in the pre-relocation stage due to a loss of rental income, upon which they heavily depend.

Our research provides evidence that the lack of timely and accurate information about the resettlement process and the resulting uncertainties are the most significant causes of pre-relocation impoverishment risks among the households likely to be displaced. Thus, the research emphasises the need for improving the consultation and collaboration with affected households, including more effective communication of the details of the project from the early stages and beyond the time of resettlement. Informal settlements to be displaced were facing both disaster preventive resettlement and urban redevelopment induced resettlement measures in the context of implementation of the Master Plan in Kigali. However, for some affected communities the motive for their displacement, whether it was based on disaster prevention or urban redevelopment, was not clear to them. This lack of clarity raised their suspicion and concerns regarding compensation entitlements, as some affected communities were told that they were relocated because of the disaster risk while their settlement was going to be acquired by investors for redevelopment. In conclusion, criteria for classification of disaster risk prone areas and the informal settlements to be redeveloped should be disclosed to the public. Furthermore, clear and transparent guidelines on compensation and entitlements for each displacement type need to be disclosed in the early stage and discussed with affected communities. Based on this information, affected communities can then engage appropriately with other stakeholders for an inclusive project implementation.

With respect to the post-relocation stage, relocated informal households experienced significant adverse effects on their housing assets that deserve much attention. These negative resettlement outcomes include the lack of privacy, overcrowding, and poor sanitation. In addition, our research shows that resettled informal settlement dwellers experienced several other serious post-relocation impoverishment risks, including social disarticulation, loss of income, loss of access to fair markets, food insecurity, loss of access to

transportation services, and other basic amenities, of which the intensity are varied depending on the resettlement site. Most of these post-relocation impoverishment risks are more severe in the case of off-site relocation than for on-site resettlement. They mainly derive from exclusion in decision-making processes and the consequent lack of consideration of needs and the interests of resettled households. This should be adequately addressed in slum relocation policies. The households to be resettled should be key actors in resettlement planning and decision-making on crucial issues, such as housing design, resettlement site selection, and livelihood security. Although, we acknowledge that some resettled slum dwellers who were homeless or living in poor and unsafe housing conditions prior to their relocation might benefit from improved shelter in safer locations, this study confirms that the current exclusionary practices are more likely to lead to the impoverishment of affected informal households than to improvements in their livelihoods.

By identifying pre- and post-displacement impacts, this study provides a holistic picture of the potential impacts of urban displacement and resettlement processes on informal settlement dwellers. We argue that both the pre- and post-displacement impacts should be part of population displacement theories. These should also be considered in practice if the livelihoods of affected households, especially informal households, are to be effectively protected and improved through resettlement. We hold that the temporal dimension embedded in this conceptualisation is indispensable to achieve a better understanding of the diverse, complex, and differentiated effects of resettlement processes on the livelihood of relocated households and to inform best strategies to mitigate their impoverishment risks. Although impacts might differ from project to project, our empirical findings offer important insights into the impacts of relocation projects on informal households. We acknowledge that some of the impacts perceived by the households to be relocated, for example, housing related risks and loss of access to jobs, might be influenced not only by the planning practices but also by their needs, interests, acceptance, or resistance toward the relocation. Therefore, we encourage conducting more in-depth research into the planning and decision-making processes by all stakeholders, for example, on how institutions and different actors and their interaction fit into the bigger picture of the processes. Such in-depth knowledge of the governance of displacement and resettlement

is indispensable to addressing the root causes of the negative impacts of increasing urban population displacement.

Chapter 3 - From Closed to Claimed Spaces for Participation: Contestation in Urban Redevelopment-Induce Displacements and Resettlement in Kigali, Rwanda*

* This chapter is based on a published paper: Nikuze, A., Sliuzas, R., & Flacke, J. (2020). From Closed to Claimed Spaces for Participation: Contestation in Urban Redevelopment Induced-Displacements and Resettlement in Kigali, Rwanda. *Land*, 9(212), 1–19.
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3.1 Introduction

Urban redevelopment of existing inner-city settlements promises macro-level benefits in cities and towns in the Global South, but also carries the threat of displacement and dispossession of the local landowners, including many from existing informal settlements. In several cities, redevelopment projects are increasingly implemented to achieve multiple and varied goals, including eradicating unplanned settlements, improving the quality of urban housing stocks, and more generally improving the urban living environments (Y. Choi, Kim, Woosnam, Marcouiller, & Kim, 2015; Zheng, Shen, & Wang, 2014). The implementation of such urban redevelopment projects often necessitates the clearance of old neighbourhoods, that are often attractive to investors. That, in turn, leads to land acquisition processes and the relocation of poor people living in such urban areas (Goodfellow, 2014; Strauch et al., 2015; Terminski, 2013; Wang & Aoki, 2019; Watson, 2014; Zheng et al., 2014). In some countries, the power of eminent domain or land acquisition for the public interest is used as justification for the acquisition of land for such urban redevelopment projects (Goodfellow, 2014; Mahalingam & Vyas, 2011).

Urban redevelopment projects involving land acquisition and resettlement processes are usually opposed by local landowners (Jordhus-Lier, 2015; Kuyucu & Ünsal, 2010; Sengupta & Sharma, 2009; E. Sheppard et al., 2015). However, in many African cities, current urban redevelopment and population displacement are justified as being in the public interest and are framed as necessary, urgent, and inevitable (van Noorloos & Kloosterboer, 2018). In cases of land acquisitions and resettlement processes claimed to be in the public interest, scholars have argued that affected people struggle to be relocated under better conditions and to safeguard their rights (Wang & Aoki, 2019; Hall et al., 2015). Previous studies have reported people's resistance attitudes in such resettlement processes. First, people facing displacement are more likely to contest resettlement decisions if they have strong perceptions of impoverishment risks inherent in the project (Dwivedi, 1999). Such perceived impoverishment risks, which are an outcome when adequate compensation and livelihood rehabilitation programs are not offered,

stimulate local residents' resistance. Second, the lack of participation in decision-making by the people to be displaced or resettled usually causes local resistance to development projects (Unsal, 2015; Yetiskul et al., 2016).

Governments in several developing countries have established legal frameworks to provide adequate safeguards, ensure effective participation, and protect people's rights, including those to a fair compensation to those affected by resettlement in the public interest (Tagliarino, 2018). However, empirical studies reveal gaps in practices, with statutory procedures not being properly followed in many land acquisition and resettlement projects (Dao, 2010; German et al., 2013; Hui, Bao, & Zhang, 2013; Schoneveld & German, 2013) leading to the violation of the rights of affected people. Specifically, many urban redevelopment projects and associated resettlement processes often follow a top-down approach, such that decision-making processes are made in closed spaces and/or through pseudo-participation that fails to reflect the interests of affected people (Abebe & Hesselberg, 2015; Flyvbjerg, Bruzelius, & Rothengatter, 2012). The difficulties that affected people face in challenging or altering such exclusionary decision-making processes have brought citizenship and participation discussions into focus, highlighting the increase in people asserting their rights. In such cases, contestation and resistance are often used by affected people struggling to assert their rights, through collective actions such as petitions and legal actions, among others, exercised outside the state-sanctioned spaces for participation to assert their claims (Kuyucu & Ünsal, 2010; Ranjit Dwivedi, 1999; Yetiskul et al., 2016). Scholars argue that the analysis of how all these spaces for participation are created provides an opportunity to explore how people engage with the processes that affect their lives and how they claim spaces for participation through resistance or acceptance behaviours (Gaventa, 2006). Despite the current increasing expansion of urban redevelopment and displacement of the poor in African cities, empirical studies into local responses to these urban transformations remain scarce (Watson, 2014). Therefore, studies that shed light on the created spaces for participation and illuminate the dynamics of the relationships and bargaining power between the affected people and powerful actors would be worthwhile (Zoomers, Noorloos, Otsuki, Steel, & Van Westen, 2017).

Against this background, the aim of this chapter is to examine the affected landowners' responses to practices of participation by state actors to achieve implicit motives in urban redevelopment and resettlement in Kigali. This African city is an ideal case to study. Largely driven by the ambition of implementing its Master Plan, Kigali has embarked on massive urban redevelopment projects involving compulsory land acquisitions in long-standing informal settlements (Mahalingam & Vyas, 2011; Manirakiza & Ansoms, 2014). Recently, the local authorities introduced a policy of in-kind compensation (in the form of replacement houses) as a strategy that will not only benefit the informal settlement households affected by land acquisitions but also will help to quickly achieve other urban priorities such as increasing the housing stock for low-income people and eradicating informal settlement proliferation in the context of implementing Kigali's Master Plan. Since compulsory housing compensation in urban redevelopment and renewal projects in Kigali remains new (Uwayezu & de Vries, 2020), little is yet known about how the responses of institutions and affected people are shaping these processes, nor about the dynamics of interactions between local authorities and the affected people.

The chapter is structured as follows. In the next section, a literature review of urban redevelopment, land acquisition and the created spaces for participation is presented. In section 3.3 and 3.4 we discuss the research context and describe the research methodology respectively. Section 3.5 presents the research findings and we draw our conclusions in section 3.6.

3.2 Urban Redevelopment, Land Acquisition, and Spaces for Participation

In the Global South, urban redevelopment projects continue to be a popular strategy for improving living standards and the environmental conditions in urban areas. Urban redevelopments include the replacement of existing old housing by new, usually high-density buildings that follow current architectural trends. Proponents of this approach, mostly using the theory of "deconcentrating poverty districts", believe that redevelopment projects can contribute to economic development and improve the quality of life of residents living in depressed urban areas. This will benefit people by, for

instance, locating new houses outside of disaster risk locations (Chan & Yung, 2004). However, critical scholars, challenge the value and impacts of redevelopment projects pointing to their role in causing undesirable relocation of low-income urban communities, mostly informal settlements dwellers (Y. Liu, Lin, Fu, Geertman, & van Oort, 2018; Wu, 2004). Several studies have reported that such relocation processes often result in unequal socio-economic consequences, including the risk of impoverishing affected people (Y. Liu et al., 2018; Nikuze, Sliuzas, Flacke, & van Maarseveen, 2019; Patel et al., 2015). Redevelopment projects are often realised through public-private partnership initiatives (Hao, Sliuzas, & Geertman, 2011). Thus, opponents also see urban redevelopments as neoliberal projects that facilitate market-driven policies that disproportionately benefit powerful actors-investors, credit institutions, and local and central governments, all at the expense of virtually powerless actors such as the affected informal settlement dwellers (Noorloos & Kloosterboer, 2018; Shin, 2009; Reshma, 2019). This concern has been also raised in the context of rural land taken for urbanization i.e cities' expansion (Nguyen, 2015).

However, in various countries of the Global South, governments may use the power of eminent domain to acquire private land when the public sector requires land for development projects but are legally obliged to compensate those whose land and other resources are taken (Tagliarino, 2017). In such cases, scholars have argued that the responses of affected people go beyond resistance in its many manifestations to include various "political reactions from below". Such reactions include mobilisation of people struggling to be displaced under better conditions and safeguarding their rights, including adequate compensation and participation in decision-making (Hall et al., 2015; Wang & Aoki, 2019). However, the meaning of "adequate compensation" is inevitably subjective (Dziwornu & Ko, 2018). In addition to a direct money payment, other compensation options, such as in-kind or replacement housing or a combination of the two have emerged (Hu, Hooimeijer, Bolt, & Sun, 2015). Replacement housing compensation is not only about shelter but also about where the new house will be located to allow the displaced people to rebuild their livelihoods. In many urban resettlements, affected landowners are relocated from the inner city to peripheral locations where they become unable to maintain access to employment. Several studies have argued

that such distant relocation often creates impoverishment risks such as the loss of employment and loss of income, etc. (Nikuze et al., 2019; Patel et al., 2015). Thus, value ambiguity is likely to emerge, affecting all these various perceptions of what adequate compensation is among stakeholders. This typically often triggers conflicts and resistance by local residents.

One common recommendation for improving resettlement outcomes is to involve affected people in decision-making about their resettlement. Community participation in resettlement has been claimed by scholars as necessary to mitigate fear and misinformation among affected people, build transparency, trust, and to provide the opportunity for community concerns to be heard. Such participation is an effective strategy to mitigate conflict that can arise from the varying interests of stakeholders (Zheng et al., 2014; Abebe & Hesselberg, 2015; Tadgell et al., 2018; Patel et al., 2002; Correa et al., 2011). It is argued that in the absence of participation, even the best resettlement plan will fail (Asif, 2000). Specifically, in projects involving the redevelopment of existing communities, scholars argue that community participation—also known as public participation—encourages awareness and improves both community consciousness and a sense of ownership of project outcomes (Loures & Crawford, 2008). Of course, these benefits imply a critical requirement for people to participate effectively in decision-making that affects their lives. Therefore, governments in several countries have established legal frameworks mandating participation in decision-making by those affected by land acquisitions in the public interest (Tagliarino, 2018; Owen, Vivoda, & Kemp, 2019). Arnstein's ladder of participation (Arnstein, 1969), which has been adapted by several scholars (Choguill, 1996; Lawrence, 2006; Luyet, Schlaepfer, Parlange, & Buttler, 2012; Nolte & Voget-Kleschin, 2014) has been used to describe participation levels within an implicit normative assumption that places the forms of participation on an axis going from a non-participation level to a high level of control over decision making. However, despite legal requirements for effective participation in many national legal frameworks, scholars continue to report that such participation remains rare and passive in many land acquisition and resettlement projects (Kuyucu & Ünsal, 2010; Yetiskul et al., 2016). Scholars have highlighted that administrative adaptation, with respect to the interests of implementers and bureaucratic politics, plays a major role in such

exclusionary practices in the Global South. Governments face the dilemma of creating environments that secure the rights of affected people and environments that protect interests of investors in current urban land acquisition processes (Ijabadeniyi & Vanclay, 2020; Zoomers, 2010). Neoliberal ideology is reported to drive the unwillingness or inability of states to protect the interests of residents (Butcher & Frediani, 2014). This has implications on issues for spatial justice, transparency, and accountability (Uwayezu & de Vries, 2019b). The state authorities often choose to use “exceptionality” measures (Swyngedouw, Moulaert, & Rodriguez, 2002) that lead to the violation of rights, including the right to participation, thus leading to social conflict and resistance (German et al., 2013; Schoneveld & German, 2013; Ijabadeniyi & Vanclay, 2020).

The difficulties faced by affected people in challenging or altering such exclusionary decision-making have brought citizenship and participation discussions into focus. These discussions have refocused attention on the formal and informal processes through which rights are asserted, including alternative spaces for practicing citizenship outside a top-down organizational structure (Baud & Nainan, 2008; de Vos & Delabre, 2018). In this context, (Gaventa, 2006) presented tripartite dynamically related “spaces for participation” (1) closed, (2) invited, and (3) claimed to represent “all opportunities, moments and channels where people can act to potentially influence decisions which affect their lives and interests”. In many development projects, decision-making spaces remain closed as citizens often have no say in decisions taken by powerful decision-makers behind closed doors (Jordhus-Lier, 2015). Within efforts to open up closed spaces, invited spaces are created—channels in which the state offers citizens the opportunity to participate in decision-making processes (Cornwall, 2002). However, spaces for participation are usually constrained by actors’ power and interests, determining who participates and which discourse is legitimate within such spaces (Aarts & Leeuwis, 2010; Gaventa, 2006; Zhuang, Qian, Visscher, Elsinga, & Wu, 2019). Thus, invited spaces that are usually seen as favours given by the powerful to the powerless are controlled by those who created them and often serve only the purpose of legitimizing the acts of the powerful (Schoneveld, 2017). In the absence of genuine participation in such invited spaces, affected people may create other alternative spaces of participation outside the hegemonic space in order to voice their

concerns. Within such alternative spaces known as claimed spaces, also known as “popular” spaces because they result from popular initiatives (Hordijk, Sara, Sutherland, & Scott, 2015), citizens come together as autonomous agents to create opportunities to directly confront the authorities and the status quo in the hope of bringing about changes and resistance to the dominant power relations (Miraftab, 2004). The notion of claimed spaces involves a multitude of tactics and strategies deployed by mobilised people claiming rights in diverse ways and seeking to address the challenges of asserting citizenship. Often such mobilisations, which depend on the structural opportunities and constraints in a particular political context, trigger actions in various forms such as contestations, appeals, and legal battles, that have been categorized in several categories such as everyday forms of resistance; social protest or confrontational mobilisation; and struggles through the judicial system and other “political reactions from below”, within the aim of overturning some decisions that are perceived as unjust. These “claimed” spaces are also termed “spaces of insurgent citizenship” (Miraftab & Wills, 2005). The three types of participation spaces discussed evoke opportunities shaped through the exercise of agency, in which various actors’ interests and attitudes interact and in which room can be made for alternative decisions. Cornwall (2002) argued that people who advocate just, inclusive, and participatory processes need a deep understanding of actors’ interactions, interests, and micro-politics.

3.3 Research Context

Many informal settlements in Kigali occupy prime land attractive to investors for real estate development. Such settlements are targeted by redevelopment projects and land acquisitions justified as being in the public interest through joint public and private efforts (Mahalingam & Vyas, 2011; Uwayezu & de Vries, 2019a). The Rwandan constitution is the primary legal instrument that governs access to land. It recognizes the right to private land ownership and reserves landowners’ legal right to control their land property and secure benefits from its use (Article 29–32). However, the state has the power to acquire any private land and, where necessary, transfer it to private companies in the public interest. This mechanism is known as expropriation and is regulated by the Expropriation Law 2015 (*Law*

No.32/2015 of 11/06/2015 Relating to Expropriation in the Public Interest., 2015). The landowners whose land is taken have a legal right to “fair” compensation. In fact, the Master Plan design was accompanied by a new Expropriation Law enacted in 2007 and revised in 2015. That legislation gives the state powers of compulsory land acquisition in the public interest. It provides a clear definition of public interest projects, including “any activities to implement land use and development master plans”. This clause has been interpreted by the City of Kigali officials, through its constituent districts, to include current urban renewal projects and redevelopment of land occupied by informal settlements (Uwayezu & Vries, 2019; Nikuze et al., 2019). As Goodfellow, (2014) has argued, the Expropriation Law gives incentives to investors to lobby the City of Kigali officials to consider property redevelopment projects as in the public interest (as far as the Master Plan is concerned), a support they need, given the high cost of land at market price and other land ownership issues that they may face during land acquisition.

In previous land acquisition processes in Kigali, affected people were given the option to choose between direct financial compensation and replacement housing. However, the majority of the affected people preferred cash compensation because they perceived the houses to be expensive with stringent terms for bank loans that were offered to them and other concerns such as small size of plots and houses; and they considered the resettlement site to be too far from the Kigali city centre (Wakhungu, Huggins, Nyukuri, & Lumumba, 2010).

Recently, local authorities introduced a policy that replacement houses will be the only compensation that will be provided to displaced informal settlement dwellers in Kigali. They argue that this policy is a strategy to systematically eradicate informal settlements proliferation, transform the lives of affected households, increase the housing stock for low-income people, improve the living environment, and support Master Plan implementation. In an interview with the local media, the former mayor of Kigali City said that cash compensation only allows affected households to create informal settlements elsewhere within the city. This policy of housing compensation for informal settlement dwellers affected by current urban renewal projects is being implemented through two resettlement options: On-site resettlement and off-site resettlement. In the former, an investor acquires land for

investment into affordable housing and uses part of it to construct houses to compensate the affected landowners, a process known as land sharing (see (Yu-Hung, 2007)). Under the latter option, the affected people are relocated to another site. These urban redevelopment-induced resettlement projects in Kigali are currently being challenged by strong resistance from affected slum dwellers (Esmail & Corburn, 2019).

3.4 Materials and Methods

This research was carried out in two research sites: Kangondo and Mpazi. The data collection was carried out in two phases: May–September 2017 and March 2019, to better capture how the resettlement processes unfolded in practice and the dynamics of interactions between local authorities and the affected people. Primary data, in the first phase, were collected mainly through interviews (of both affected people and government officials) and a focus group discussion with affected landowners. In the second phase, we collected primary data through in-depth interviews with affected people and government officials. For secondary data, we used mainly media resources, including newspapers and videos; and official documents on land acquisition and resettlement (including the national Expropriation Law and informal settlement upgrading strategy).

3.4.1 Research Sites

This study was carried out in two informal settlements: Kangondo and Mpazi, in which the more recent wave of urban redevelopment and informal settlement relocation projects in Kigali City has taken place.

The Kangondo site, located in the Gasabo district, is an area occupied by an established informal settlement and is planned to be redeveloped into a high-end residential settlement. The Kangondo redevelopment project was initiated in 2017 and will lead to a land acquisition process and off-site resettlement of residents to free up land for high-end development³. The project is expected to displace approximately 1623 households. In October 2017, a first public meeting took place at which

³ See <https://www.ktpress.rw/2018/04/has-kigali-city-failed-to-explain-tobannyahe-residents-the-relocation-plan/>

the mayor of Kigali met with the affected people in their neighbourhood. At that meeting, the Kangondo residents were informed about the project, its objectives, and the plan to relocate them to another site, namely Busanza (Figure 3.1), about 10 km away from Kangondo. Since then, several other community meetings and exchanges between the affected people and government authorities have taken place following the conflicts involved and resistance reactions from the affected people.

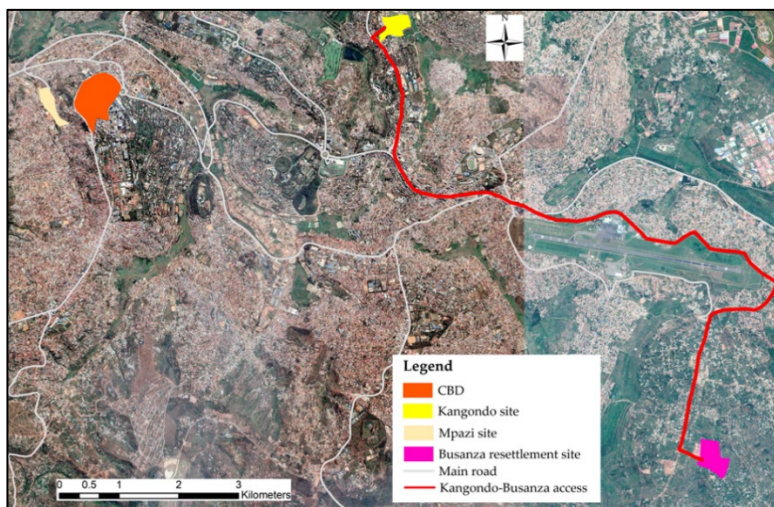


Figure 3.1. Location of research sites and Busanza resettlement site. Source: Authors.



Figure 3.2. Construction of apartments for Kangondo residents at the Busanza resettlement site. Source: This picture was taken by Ernest Uwayezu in September 2019.

However, the project implementation started despite discontent among the majority of affected landowners. The construction of the first phase of apartments in three-story building blocks to house the affected households started in March 2018 and approximately 1040 apartments (Figure 3.2) are under construction at the selected resettlement site⁴.

The Mpazi site, located in the Nyarugenge district, is also an informal settlement located very close to the central business district and is planned to be redeveloped through land sharing leading to on-site resettlement. This project is being implemented under the partnership between the Kigali city authority and private investors. Introduced in 2017, it aims to demolish the Mpazi informal settlement, especially houses located near a water channel, and transferring the rightful landowners to apartment blocks to be built within the same neighbourhood. The investors will use part of the demolished area to build houses to compensate affected households and the rest of the land will be used to build affordable housing.



Figure 3.3. First inaugurated apartment block for affected households at the Mpazi research site. Source: This picture was taken by the first author in March 2019.

⁴<https://www.ktpress.rw/2018/04/has-kigali-city-failed-to-explain-to-bannyahe-residents-the-relocation-plan/>.

In July 2017, the plan to construct first model houses started following the approval of housing typologies proposed to the city of Kigali, Nyarugenge districts, and the Rwanda Housing Authority.

The first building block to compensate landowners who accepted the proposal was completed and opened in September 2018. Currently, only three landowners have agreed to participate in the process of land readjustment through the consensual contribution of their land and they have been given apartments in the building shown in Figure 3.3.

Table 3.1: Overview of research sites for the second research sub-objective.

Research site	Mpazi	Kangondo
Intervention/project	Demolish old houses and redevelopment of the area through construction of apartments (land sharing-site redevelopment)	Demolish old houses and use the area for investment in high-end residential houses (site redevelopment)
Relocation option of affected households	On-site	Off-site
Number of affected households*	Unknown	1623
Status as of (actual date)	Phase 1 of apartments to house affected households completed	In construction of all apartments to house affected households
Lead agency	Kigali City and Nyarugenge District	Kigali City and Gasabo District
Sponsorship	Partnership between Kigali City and private investors	Partnership between Kigali City and a private company

Notes: *Estimated number of households, tenants, and owners to be displaced (Source: Primary reconnaissance).

We selected the above sites for four reasons. First, although these two projects have differences in resettlement options—one being on-site but the other off-site, they were both initiated based on the main

motive of supporting the implementation of the Master Plan. Second, these are the first land acquisition projects for which compulsory housing compensation was envisioned. Third, the Kangondo project became the first resettlement case in Kigali that has been characterised by overt resistance and contestation between the affected landowners and local authorities. Finally, both projects were still at the early stage of implementation and therefore would allow the gathering of invaluable information on how land acquisitions for urban redevelopment are executed, the responses of affected landowners, and the dynamics of their interactions with local authorities. Table 3.1 lists the characteristics of both research sites.

3.4.2 Data Collection

In this study, we used data collected from both primary and secondary sources. We collected data during two separate fieldwork trips that took place between May and September 2017 (at the early stage of the projects) and another in March 2019 (advanced stage). In 2017, we collected primary data through a focus group discussion and semi-structured interviews with the heads of affected households and semi-structured interviews with government officials. The first author conducted a focus group discussion (appendix 3) on the Mpazi study site and approximately 68 interviews (appendix 1) with heads of households in Kangondo and 31 in Mpazi (see Table 3.2). The focus group included nine participants, a number that was easy to handle and allowed for in-depth discussions. We conducted this focus group discussion and the interviews with the heads of household to gain a general understanding of the level and nature of their participation in the process, their concerns, and their interactions with the local authorities. During this same period, we conducted semi-structured interviews (appendix 5) with five government officials in the City of Kigali who have been involved in these types of resettlement processes of informal settlement dwellers, including two project engineers who were directly involved in the Kangondo and Mpazi projects. The interviews with these key informants were conducted to understand the motives, the procedures that were being followed, the participation of affected people, opportunities and challenges in the processes of resettling informal settlement dwellers.

In 2019, we collected more primary data through semi-structured interviews (appendix 6) , to investigate how the processes unfolded, the spaces for participation, key concerns raised, and the implication on the attitudes of affected households. We interviewed three government officials involved in these two projects as well as 33 heads of household (11 in Kangondo project and 22 in Mpazi project—Table 3.2). Uniform sets of questions were prepared for interviews with affected communities in both projects to help us identify the similarities and differences between the two cases.

Table 3.2: Respondents in interviews with the heads of households.

First fieldwork	No. of HHs (in sample)	Distribution (%)
Kangondo II	68	69
Mpazi	31	31
Total interviewed HHs	99	100
Second fieldwork		
Kangondo II	11	33
Mpazi	22	67
Total interviewed HHs	33	100

The study also draws on secondary data collected during our fieldwork. These include national laws and regulations governing land acquisition and the resettlement of informal settlements in Kigali, such as the Expropriation Law and the Informal Settlement Upgrading Strategy Policy (ISUS). Secondary data also include media resources such as newspaper articles and online videos that reported on the two cases.

3.4.3 Data Analysis

For the analysis, first based on the narratives gathered from all data sources, we used conventional content analysis (Hsieh & Shannon, 2005) to synthesize information on the projects' implementation in practice, including the procedures followed and the motivations, participation of affected people, concerns, reasons for discontent, and resistance among affected people and their strategies.

Second, we analysed the Expropriation Law and the national Informal Settlement Upgrading Strategy (ISUS) to understand the processes of land acquisition and resettlement, including the procedures, compensation, and participation of affected people from the statutory

perspective. We finally compared the statutory provisions and the actual practices in the two projects to reveal the extent of deviations from the law. The presentation of our findings also includes verbatim quotations to illustrate actors' perceptions and attitudes. In our opinion, without this in-depth investigation and analysis of the cases, it would be impossible to identify the interactions of affected people and local authorities or the reasons underlying the resistance behaviour toward the adopted in-kind (housing) compensation policy among the affected slum residents of Kigali.

3.5 Findings and Discussion

The implementation of the urban redevelopment-induced resettlement projects in the two localities has given rise to various forms of state/citizen actions and counter responses. While these actions and responses vary between the two projects, they centre on concerns related to deviations from the laws, consultation/participation, property valuation, and concerns over compensation packages.

3.5.1 Deviations from the Expropriation Law

The Kangondo and Mpazi projects involved several implementation procedures that raised serious concerns among the affected people. The most contentious matter raised by the affected people was an apparent lack of compliance with the Expropriation Law, the legal instrument currently guiding resettlement for urban redevelopment projects. Affected people raised concerns over procedural flaws that led to non-compliance with its provisions. In the Kangondo project, affected people were surprised to hear that the first communicated compensation plan failed to suggest a property valuation as required by the law. That first approved compensation plan was intended to compensate affected landowners with a new house, with the size determined based only on the land parcel size and not by whatever was built on it. The residents contested this compensation plan and requested the expropriators to first conduct property valuation so as to be able to estimate adequate compensation for losing their existing properties. The affected people refused the compensation estimated based only on parcel size, while the Expropriation Law suggests that the loss of all the land and all developments on it need to be

compensated. The residents considered excluding property valuations in the resettlement decision-making as a breach of the law.

Furthermore, while the Expropriation Law stipulates that mutual agreement must be reached between the expropriated and the expropriator over the option of compensation, whether in kind or in cash, affected people raised their concern over the lack of such agreements:

"This law to expropriate people for public interest has not been followed in the planning of this project. ... in its article 35, where it says that a fair compensation could be cash or any other compensation that is agreed, there has not been any negotiation and agreement rather a sort of imposition."

The residents blamed the government for depriving them of their rights and circumventing such negotiations and this provided a breeding ground for discontent and then contestation. In response to the claims of the residents, the authorities took into consideration the protest about incomplete property valuations and determined the claim to be valid. The city officials and the investors agreed to make property valuations that included all developments on the land. However, contrary to the claim about property valuation state authorities did not consider negotiations on the form of compensation to be valid. When affected people questioned state authorities about why legal provisions were being ignored, one member of the Rwanda senate, in a meeting with Kangondo residents, acknowledged that some provisions in the Expropriation Law were not followed, but ensured them that it was for their benefit and well-being. She stated:

"This is what I am telling you, sometimes, the state does not follow those laws for the benefits of the citizens."

Previous studies have argued that non-compliance with the Expropriation Law in Rwanda is driven by a lack of administrative and financial capability (Uwayezu & de Vries, 2019a). However, this study suggests that local authorities are intentionally deviating from some legal provisions. Clearly, Kigali City's officials deliberately ignored negotiations in the form of compensation options, between cash and in-kind, because offering only in-kind compensation was applied as a strategy to decrease the proliferation of informal settlements. However, this motive could not fully explain the lack of compliance with

the requirements for property valuation, for instance in the first communicated compensation proposal in the Kangondo case nor the lack of participation by the affected people in the design of the new houses and the selection of resettlement site.

3.5.2 Lack of Participation in Resettlement Decision-Making

The Expropriation Law (Article 35) provides that affected landowners should be consulted and be allowed to negotiate with the expropriator about the compensation (either cash or in-kind) before any plans are made. However, in practice this was not done. According to our interviews with key informants, the investors submitted to Kigali city officials the Kangondo project proposal that included the application for expropriation and the compensation plan. The management committee at the city of the Kigali level approved the project as being in the public interest since it supports implementation of the Master Plan. City officials and investors agreed that, as compensation, the residents of Kangondo will be resettled to the Busanza low-cost housing site located in the Kicukiro district, more than 10 km away from their existing community. Interviews of both City of Kigali officials and the affected households confirm that neither consultation nor participation by affected households took place between the plan preparation stage and its approval. After the approval of this proposal, the project was published first through the media and introduced later to the Kangondo community in a public meeting. Similar to the Kangondo project, residents in Mpazi were not consulted before the approval of all proposals, including the physical development plan of their area and the proposed houses with which they would be compensated. According to our interviews and a focus group discussion, the objectives of the projects and the proposed housing typology were also introduced to the community in a public meeting. In these first public meetings, landowners affected by both projects contested their exclusion in the decision-making, doubting the opportunity to benefit from the projects.

A key informant revealed that because the Mpazi project could not start without access to land, it was necessary to carry out individual negotiations with landowners and convince them to concede their land before construction starts. Thus, before new homes were constructed, negotiations took place regarding house quality (especially size) with

respect to family size and expenditures for each landowner with the ambition of implementing the principle of “each according to his needs and ability”, i.e., meeting family size and other needs. As a way of allowing these landowners to be able to raise their concerns about the proposed houses, Mpazi project officials organized a field visit to houses similar to the proposed houses. During this visit, landowners had the opportunity first to see and ask questions about the quality of the houses.

Both interviewed resettled households on the Mpazi site and key informants involved in this project confirmed that individual consultation and the visit of the model houses proved to be useful in supporting interactions between the project officers and the landowners in terms of discussing the quality of the houses. The interviewed resettled landowners reported that individual consultations allowed them to negotiate their interests, during which they managed to request some changes to the initially proposed house plans. According to our interviews, the estimates of the compensation (house type) followed the principle of “each according to his/her needs and ability”. The new apartments have at least two to three bedrooms and a living room, an inside kitchen, and a bathroom for a cost between seven and sixteen million Rwandan francs (7000-16,000 Euro). One resettled landowner, given the range of valuation prices, was able to negotiate more than one house. The resettled landowners also reported that visiting the model house showroom was a good option for them to have an idea of what their new houses would look like and be able to negotiate any desired change. Contrary to the Mpazi project, in the Kangondo project, while the affected people were still negotiating their interests, the construction of the houses for their compensation started without giving them an opportunity to suggest any change to the initially proposed plans.

The above evidence shows that in both the Kangondo and Mpazi projects, participation evolved from closed to invited spaces with public meetings used as invited spaces. In partnership with investors, local authorities made a series of critical decisions regarding compensation in closed spaces without the participation of the affected households. In both Kangondo II and Mpazi, landowners were not involved in or consulted about their compensation decision-making, including the design of the new houses. In Kangondo, in particular, affected

landowners were never involved in the selection of their resettlement site. Only when the decisions on the houses' typologies had already been made, were these presented to the affected households in public meetings. This finding reflects other studies that found that compensation decisions are often made behind closed doors (Deininger, Selod, & Burns, 2012) and that invited spaces often focus solely on informing the affected communities the decisions made behind closed doors. Some scholars associate such exclusionary practices with perceptions of unfair compensation and injustice (Cao, Dallimer, Stringer, Bai, & Ling, 2018; German et al., 2013; Uwayezu & de Vries, 2019a). Our study shows that exclusionary decision-making, especially during early stages, not only contributed to the perception of unfairness but also negatively affected the trust of residents in the local authorities leading to strong contestations and resistance in Kangondo towards the entire project.

3.5.3 Non-Transparent Property Valuation

In Kangondo, affected households expressed mistrust and suspicion of manipulations in the process of property valuation. Our interviews revealed that the majority of affected households did not agree on the estimated value of their property. Respondents reported satisfaction with the work of enumerators/surveyors because they wrote everything that needed to be considered in the estimation of the property value. However, the majority contested the outcomes of the property valuation, questioning inconsistencies and expressing the feeling that there were manipulations in values that were communicated to them.

"Example: I received two valuation reports. The first came with 28 million. After two weeks, I received another with 30 million. How can that be?"

Another affected head of household, in his words, pointed to the case of two neighbours who had different estimations of the value of one square meter of land.

"One of the problems we faced...for me, the unit price of my land is 8000frw per m², for my neighbour they estimated 12000Frw per m². Why this difference since we live in the same neighbourhood?"

These inconsistencies provided a breeding ground for discontent and reinforced the feeling that there was significant manipulation.

"Here, they tell us that there was a process of property valuation. But in my opinion, it did not happen. If necessary, our president [of the republic] should know it and I recommend a new valuation process. For instance, I have a house of 3 bedrooms where I live and I have 5 more small houses each of 1-bedroom and a living room. I offered my property for sale, I refused 15 million that was offered to me. But, my property is now valued at 7 million."

The majority of affected households in Kangondo refused to sign consent documents that cited the valuations of their affected property and the corresponding offered replacement house types. Landowners who did not agree with the valuations of their property were given 10 days to do counter-expertise. However, a significant number of the affected households were not able to hire a professional land valuer to carry out this process due to lack of money. Others complained that the time given was too short for them to find money to pay experts. In the Mpazi case, the already resettled landowners did not openly express any concern over inconsistencies, manipulations, and a need to do counter-expertise. However, one respondent who received a new house said that her brother told her that her property was undervalued, although she has reported her satisfaction with the outcome of the property valuation.

The above attitudes shed light on the concern of affected people about the lack of transparency. German et al. (2013) argued that, for instance, no transparency in the property valuation process with uneven and undisclosed techniques are among the causes of allegations of unfairness that can lead to highly contentious land acquisition processes. Our study confirms that argument. Our interviews with Kangondo residents revealed that affected people were not aware of the standards used in the valuation process and did not trust local authorities. They believed that local authorities and the investors did not change from determining compensation based only on the land parcel size (while ignoring developments on it). The majority believed that the investors made sure that if you, for example, were entitled to a three-room house according to the initial compensation plan, the value of your property would also not exceed the price of the proposed three-room house set by the investors. The affected people accuse property valuers of not being independent and obliged to undervalue property for the benefit of investors and local

authorities. This finding has been confirmed by Uwayezu and de Vries, (2019a), who argued that such undervaluation practices in resettlement processes in Kigali serve only the interests of investors and local authorities who need to minimise the costs of expropriation in case they themselves lack enough funds.

3.5.4 In-Kind Compensation Perceived Unsatisfactory

Previous studies identified risk perception among key and universal factors that shape local residents' attitudes towards all kinds of projects that affect their lives (Liu & Yau, 2014). Similarly, our interviews with key informants and residents suggest that the majority of affected landlords, mainly the owners of several houses for rent in both Kangondo and Mpazi, were concerned by potential losses of income and impoverishment risks because of replacement houses compensation. They perceive it to be grossly unfair to receive one small flat in exchange for more than three rental houses.

Furthermore, many affected landowners expressed their dissatisfaction with the proposed houses, especially in relation to privacy and overall space compared to the size of their families. The lawyer of 400 "elites of resistance" explained in the letter to the minister of local governance:

".....For instance, a landowner whose property value is 18 million will receive a house of 1 bedroom while he/she might have a large family. In case a large family receives such a small house, it shows that informality you are trying to eradicate will shift from an informal settlement to overcrowded housing conditions ..."

Resistance against the in-kind compensation in the form of housing varied within and across the two projects. Although affected people in both projects raised concerns about impoverishment risks, not all of them advanced their complaints through resistance. Some landowners accepted resettlement in new houses, while others resisted both overtly and covertly. There were mixed responses in Mpazi among affected landowners, but strong resistance in Kangondo. Local authorities were challenged, during individual consultations in Mpazi, to find neighbours who had agreed to free enough land to start the project. Only three neighbouring landowners agreed to contribute their land during the first phase. In Kangondo, as disclosed by the district of

Gasabo officials, only 10% of affected households accepted the houses, while 90% were against the replacement houses compensation. Of the 90% who resisted the housing compensation, a group of 400 landowners became the "elites of resistance". These 400 landowners in Kangondo strongly opposed the housing compensation scheme. The majority have several houses for rent and receive a sufficient income from rentals and therefore, their economic status is better than many in the neighbourhood. These 400 landowners pleaded to the minister of local governance to dismiss the decision to force them to accept the replacement houses for two main reasons. First, for them, compensation of houses alone would lead to impoverishment since they depend on income from renting out their houses and thus, they deserve a fair compensation in order to maintain their standard of living. Second, they requested compensation in cash because they found it unfair that the proposed houses and the resettlement site as compensation had been decided without their involvement.

"...But this project was proposed without their participation in the planning and design of the apartments to be constructed in Busanza...."

The elite landowners claimed that the Expropriation Law stipulates that if compensation is in a form other than money, that must be agreed on and that was not the case in their resettlement. These landowners said that they do not resist public interest projects, but they believed that the project executors had deprived them of some of their key rights including the right to participate and to negotiate compensation.

The answer from the minister included two aspects that justified the reason why the project and the decisions made could not be set aside. First, the minister said:

"No person shall hinder the implementation of the program of expropriation in the public interest on the pretext of self-centred interests."

Second, the minister reminded the affected people that most of their houses are constructed too close to the wetland and thus their life faces the risk of disaster. Third, their neighbourhood is unplanned, and the houses were not built in conformance with construction regulations. Thus, the minister informed the affected households that the decision for relocation made by the district of Gasabo officials would not be changed and the only compensation package would be replacement houses. In general, local authorities repeated that position on several

occasions that cash compensation is no longer an option available to informal settlement dwellers for the reasons of fighting unsafe settlements⁵. In his words, the mayor of Gasabo District made it clear that:

"We will not give money to just anybody since they may create another slum while we are fighting against unsafe settlements."

For the "elites of resistance" group in Kangondo, legal recourse became the final option to claim rights and engagement in decision-making. The 400 landowners remained dissatisfied with the answers they received from local authorities, and so brought their case to the Court through their lawyer. They requested the Court to dismiss their resettlement process because it did not follow the legal provisions in place. The Court did not accept their case and suggested that they go back and negotiate with the relevant authorities. The 400 residents continued their struggle in the Court after being dissatisfied with the responses from the mayor of Kigali City, whose response was not different from that of the Minister. For this second time, the Court dismissed their case as a group claim and suggested these 400 landowners to refile their cases as individuals, a decision that they perceived to be unfair.

On 14 March 2020, the first stage of the demolition of the Kangondo neighbourhood started, while reports suggest that individuals envisioned to pursue the legal battle. However, this time the local authorities, in the district of Gasabo, advanced the argument for demolition to be mitigation of the risk of disasters from the expected heavy rain. Many of the evicted households were then forced to sign contracts to receive houses as the only option open to them and they received some amount of money to rent houses for three months while awaiting the completion of their new apartments.

Nikuze et al. (2019) found that people in the households to be relocated perceived the use of disaster-risk label as a strategy to put them in a weak position for negotiations about their resettlement. This study suggests that the use of the disaster-risk label is probably going to be increasingly used to legitimise eviction. Although it might be true

⁵ <https://www.ktpress.rw/2018/04/has-kigali-city-failed-to-explain-to-bannyahe-residents-the-relocation-plan/>

that some informal households are located in a naturally hazardous area, this study reveals that negotiations with affected people to allow them to voice their needs will still be crucial for local authorities to implement sustainable and equitable projects. Marx, Johnson, and Lwasa, (2020) argued that even in the context of relocation realised to reduce exposure to disaster-risk, equitable resettlement outcomes should be given consideration. In-kind compensation is supported by many as a better strategy to mitigate post-relocation homelessness risk in comparison to cash compensation (Cernea, 1997a). However, affected communities deserve participation to express their opinions and needs and allow them to agree or not with the authorities over important decisions such as where to be resettled, what types of housing, cost, and other livelihood rehabilitation strategies.

3.6 Conclusions

Urban redevelopment-induced displacement and resettlement processes, especially those involving informal settlements, continue to pose significant challenges to many governments in the Global South. The aim of this study was to analyse practices of participation by state actors and the local responses to urban redevelopment-induced resettlements in Kigali, Rwanda. This study identifies factors including compliance with the national Expropriation Law, the participation of affected groups in resettlement related decision-making processes, details of the property valuation processes, compensation packages, community attributes, and how they trigger contestation between residents and local authorities. Overall, we show that local informal settlement dwellers are concerned about the deviations from the Expropriation Law, the lack of participation, the lack of transparency in property valuation, and the unfair compensation packages offered in the resettlement processes. The consequences include increased perceptions of unfairness, livelihood risks, and distrust which fuel contestation and resistance attitudes among affected people. By producing insights into the interactions between local authorities and affected people over these raised concerns, the main contribution of this study lies in furthering our understanding of the various ways people claim spaces for participation in projects that affect their lives and livelihoods by directly confronting the authorities through contentions, legal action, and resistance, to change the status quo.

Our research provides evidence that local authorities deliberately delayed consultations and negotiations that, by law, should be initiated early in projects. In agreement with other studies (Schoneveld, 2017), our study suggests that the ease with which such statutory safeguards are ignored relates to interests and pro-investment ideology. Deviations from legal requirements in the Expropriation Law, such as the lack of early negotiations, contributes to the feeling of marginalisation and exclusion from decision-making among affected landowners. Although in Mpazi a few landlords have accepted the offered houses, in Kangondo delaying consultation has increased resistance. Delayed negotiations led to damaged relations and trust as a result of lack of transparency and early participation. Rebuilding trust, to a level where negotiations can be successful ultimately requires much effort and time. Thus, following the formal process of early transparent negotiations can help avoid costly legal struggles and delays. Adopting early-stage negotiations and cooperation, before decision-making, should increase trust and ultimately the legitimacy of both the process and its outcomes. Our study suggests that the local government should adhere to the formal implementation procedures for land acquisition. Furthermore, clear and transparent guidelines for improved consultations in the implementation of compulsory in-kind compensation are essential for processes to become less adversarial.

We observed a “decide-first, defend-after” decision-making approach in these redevelopment-induced resettlement projects. This approach, characterised by lack of participation, stimulates the affected residents to contest processes and their outcomes. This was especially evident in Kangondo, where the better-off landowners formed a powerful mobilisation and resistance group who claimed their rights to negotiate compensation in urban redevelopment-induced displacement. In addition, the perceived undervaluation and non-transparent property valuation as well as the government’s imposition of replacement houses without the willingness to recognise the needs, interests, and rights of expropriated people has led to strong contestation. Thus, our study supports the view that governments should change their “decide-announce-defend” governance style (Cao et al., 2018) to a more inclusive and collaborative decision-making approach that is aligned with the formal procedures and legal instruments. We also see a clear need for governments to adopt co-design approaches involving affected communities on matters of houses design, which are

fundamental to households' wellbeing. Furthermore, for owner-landlords who rely on income such as from housing rental, there is a strong incentive to mobilise and resist replacement houses because of the associated impoverishment risks. Therefore, paying attention to the socio-economic heterogeneity of the affected people is crucial to the design of compensation packages that match specific interests and needs. The loss of income from renting houses is also a serious concern among many informal households in Kigali and elsewhere. All forms of livelihoods, including housing as a source of income, need to be considered during resettlement processes and compensation regimes.

Although every project is unique, our findings offer more general insights into urban redevelopment governance and its implications for informal settlement dwellers. Furthermore, the two cases we presented are quite typical of urban redevelopment induced displacement and resettlement processes that occur in other African cities. Our comparison of both forms of resettlement processes suggests that on-site relocation is likely to face fewer social conflicts than off-site relocation. Although both forms of resettlement lead to significant socio-economic changes, the location of a resettlement site is fundamental for livelihoods and general wellbeing. Residential location matters, especially for informal settlement dwellers, many of whom have strongly location-based incomes and may therefore experience high deprivation when displaced. Therefore, in addition to co-designing their houses, their active participation in selecting a resettlement site is crucial. Even so, the potential impacts of relocation need to be transparently and fully discussed and understood. If such impacts, such as loss of house rental, are not resolved, few households will be willing to willingly accept such changes. Therefore, we encourage more in-depth research into how such collaborative decision-making involving government authorities and affected households can be realised in Kigali and elsewhere. Future research should identify methodological approaches and tools to support the planning of resettlement sites and effective decision-making. Such planning instruments will help make the increasing scale of planned resettlement in Sub-Saharan Africa, whether due to infrastructure projects, disaster risk reduction, or climate change, both more equitable and more inclusive.

Chapter 4 - Urban-induced displacement of informal settlement dwellers: A comparison of affected households' and planning officials' preferences for resettlement site attributes in Kigali, Rwanda *

* This chapter is based on Nikuze, A., Flacke, J., Sliuzas, R., & van Maarseveen, M. (2022). Urban induced-displacement of informal settlement dwellers : A comparison of affected households ' and planning officials ' preferences for resettlement site attributes in Kigali, Rwanda. *Habitat International*, 119 (November 2021), 102489. <https://doi.org/10.1016/j.habitatint.2021.102489>

4.1 Introduction

Induced displacement and resettlement of informal settlements are increasing in many African cities due to urban processes such as the implementation of new Master Plans, the redevelopment of existing inner-city settlements and urban disaster risk reduction initiatives (Steel et al., 2017; van Noorloos & Kloosterboer, 2018; Watson, 2014). Such a planned relocation of a community to a new site may on the one hand create potential macro-level benefits such as providing adequate housing to low-income urban dwellers (Terminski, 2015). On the other hand, induced displacements are often associated with severe adverse impacts on the lives and livelihoods of the displaced households, creating various forms of impoverishment risks (Cernea, 1997b). Experiences from different countries show that resettled urban communities often face joblessness, loss of access to common property resources, food insecurity, and social disarticulation risks (Abebe & Hesselberg, 2015; Nikuze et al., 2019; Patel et al., 2015). It is argued that the resettlement-induced impoverishment risks are related to an unsuitable resettlement site, located far from basic infrastructure and services essential for the livelihood of resettled people (Abebe & Hesselberg, 2015; Bartolome et al., 2000; Corsellis & Vitale, 2005; Ibrahim et al., 2015; Kinsey & Binswanger, 1993; Nikuze et al., 2019; Patel et al., 2015). For example, studies found that resettlement far from the main markets contributed to food insecurity and nutrition risks among resettled households (Nikuze et al., 2019). Thus, finding a suitable site constitutes a critical decision problem in planning resettlement. A relocation site that is perceived as unsuitable is a factor of failed resettlement (IFC, 2019) and always a source of dissatisfaction among displaced people and conflicts in displacement and resettlement processes (Nikuze, Sliuzas, & Flacke, 2020).

Resettlement site selection is a complex and potentially conflict-ridden process that requires the participation of the concerned stakeholders, particularly those affected by it (e.g., targeted communities to be resettled). The involvement of the affected people in resettlement site selection is required to capture their needs and preferences and support their learning about the costs and benefits associated with their relocation (ADB, 1998; IFC, 2013). Lack of such participation can increase feelings of unfairness, marginalisation and distrust, all of

which can trigger contestations, poor acceptance of proposed plans and local resistance to resettlement projects (Nikuze et al., 2020). Research in developing countries revealed that the willingness to accept resettlement decisions rises with the level of participation of the affected population (Vlaeminck et al., 2016). Selecting a resettlement site also involves the views of those who advise on the decision (e.g., local planners). Perspectives, values and interests from different stakeholders can make the resettlement site selection a complicated decision-making process. However, arguably, incorporating key stakeholders' opinions and preferences in the decision-making is essential for consensus building, reduce potential conflicts, and lead to the success of any development projects (Grafakos, Flamos, & Enseñado, 2015; Higgs & Higgs, 2006). Therefore, understanding key stakeholders' interests and preferences in resettlement processes is a critical step to ensure their incorporation in the decision-making (Baert et al., 2020).

Resettlement site identification also encompasses the evaluation of potential sites based on various criteria, including environmental and socio-economic issues such as ensuring access to health facilities, schools, markets, which are essential to improve or at least reconstruct the livelihoods of resettled people (Correa et al., 2011; Ibrahim et al., 2015; Viratkapan & Perera, 2006). Thus, resettlement site selection involves the choice between alternatives with various positive and negative impacts, leading to complex trade-offs, which are exacerbated by the values and sometimes conflicting interests, perceptions, and stakeholders' preferences (Ilgi & Nursen, 2016). Having said this, resettlement site identification requires integrative and transparent methods to support informed decisions based on the stakeholders' values and preferences (Stagl, 2006).

One of the most comprehensive methods used to integrate stakeholders' preferences in site selection is the combination of Geographical Information Systems (GIS) and Multicriteria decision analysis (MCDA) (Malczewski, 2007; Malczewski & Rinner, 2015). GIS-MCDA provides a framework to integrate multiple evaluation criteria and opinions to assess land suitability for different purposes, identify and compare the much more suitable courses of alternatives that can support more informed decision making (Ferretti & Montibeller, 2016; Keenan & Jankowski, 2019). It has been used in several domains, such as transport route planning (Keshkamat, Looijen, & Zuidgeest, 2009),

biodiversity conservation (Pert et al., 2013), renewable energy (van Haaren & Fthenakis, 2011), waste landfill siting (Sharifi et al., 2009), selection of parking sites in cities (Jelokhani-Niaraki & Malczewski, 2015). However, limited research has been done on the use of GIS-MCDA in resettlement site selection. One of the few such studies is provided by Ibrahim et al., (2015), who applied GIS for resettlement site selection based mainly on environmental and physical criteria, for people affected by environmental disaster. In their analysis, they do not consider socioeconomic criteria for the livelihood of affected people. Besides, the relative importance of the different criteria was judged by experts while the opinions of the affected people were not considered. Thus, while incorporating values, interests and preferences of interested stakeholders, especially the affected people, in resettlement site identification is increasingly being encouraged, studies of such stakeholders' preferences and how they can be incorporated in the decision making are still lacking.

Accordingly, this chapter aims to analyse key stakeholders' preferences for resettlement site selection criteria and apply multicriteria analysis to map potentially suitable locations in Kigali, Rwanda. The study explicitly compares preferences between two stakeholder groups: resettlement affected people and planning experts and incorporate their preferences into a site suitability analysis. Kigali is especially relevant because of two main reasons. First, there is an increase of informal settlement dwellers' resettlement projects in Kigali city under the framework of its Master plan implementation and disaster risk mitigation for households living in high-risk zones. Second, studies show that recently the city of Kigali started to face overt opposition and contestation, of the affected people, due to procedural concerns, in general, and precisely dissatisfaction with lack of participation in deciding resettlement sites and the compensated houses (Corburn, Berkeley, & Hall, 2019; Nikuze et al., 2020). Therefore, understanding local stakeholders' preferences, particularly the affected people, and approaches for their incorporation in critical decisions like resettlement site selection is needed. Existing studies in different parts of the world have been focusing on investigating the preferences of housing consumers and real estate practitioners (Mulliner & Algrnas, 2018; Opoku & Abdul-muhmin, 2010; Tan, 2012). Little attention has been given to views of induced displacement affected people, especially

informal settlement dwellers, in the context of the implementation of the recently adopted cities master plans in developing countries.

The chapter is structured as follows. In the following section, we give the background to the study area and the selected research site. In section 4.3, we introduce the criteria for resettlement site selection identified in the literature and describe the methods used for data collection and analysis in this research. Subsequently, the results are presented in section 4.4 and discussed in section 4.5. The chapter concludes in section 4.6 with practical interventions to improve resettlement site selection processes and future research recommendations.

4.2 Study area, research context and research site

This research was conducted in Kigali City. Kigali is among the fastest-growing cities in East Africa in terms of economic and infrastructural development. In partnership with the private sector, Kigali City has seen remarkable growth in various areas, including commercial buildings, housing estates, universities, industries, hotels and conference halls (Manirakiza et al., 2019). However, like in many other cities in the Global South, this development was not without challenges. In the last three decades, rapid demographic growth has been associated with an increase in informal settlements (Manirakiza et al., 2019). Due to the city's topography, many of these informal settlements are concentrated in environmentally hazard-prone steep slopes and wetlands, known as high-risk zones (UN-Habitat, 2010). In 2009, the city adopted its first Master Plan for 2025 to stop and address unplanned settlements and developments in disaster risk areas. According to the Master Plan 2025 (recently revised into Master plan 2050), the informal areas located in hazard-prone areas are planned to be demolished, while for other informal settlements, the priority will be given to the upgrading strategy. The demolishing and upgrading of these old urban settlements are leading to induced displacement and resettlement processes.

In terms of the displacement and resettlement of dwellers from high-risk zones, the city of Kigali, through its districts and the central government's support, has an annual budget to resettle a small

number of vulnerable households (RHA, 2013). Concerning the settlements to be redeveloped or upgraded, the city currently relies on its partnership with private property investors to acquire and redevelop the developable land occupied by these informal settlement areas (MININFRA, 2016). Consequently, there has been a boom in real estate and construction projects during the past ten years (Goodfellow, 2014). In the context of informal settlement dwellers displacement, city authorities currently enforce compensation in-kind, namely replacement homes in resettlement sites over cash compensation, to mitigate new growth of informal residential areas by the displaced urban dwellers (Nikuze et al., 2020; Uwayezu & de Vries, 2020). However, some resettlement projects are associated with contestation, where affected people reject the proposed compensation packages, including the houses and resettlement sites (Nikuze et al., 2020).

There is no existing national, provincial or local resettlement policy guiding these resettlement processes both of the poor from high risks zones and those conducted in relation to urban redevelopment projects. However, in the context of redevelopment-induced displacement, land acquisition by investors is interpreted by the local authorities as an act of public interest for the purpose of implementing the city Master Plan. Therefore, the expropriation law is the main policy instrument guiding the land acquisition and resettlement of targeted informal settlements. This is because the expropriation law assumes that all activities to implement the Master Plan are considered as of public interest. In the expropriation law it is explicitly stated that the landowners i.e. those who possess land lease title, have a right to be compensated either in monetary terms or with real property, equivalent to the affected property and based on agreement between them and the expropriator. Evidence from the past shows that the Kigali city authorities negotiate with the investors and carry out expropriation on their behalf, to insure that the targeted communities do not resist the investors (Goodfellow, 2014). Therefore, the negotiations happen solely between the Kigali city authority and the targeted communities. In the context of resettlement sites identification, city planning officials are delegated the power by the city decision makers to advice on potential sites, while ensuring the compliance of any new development with the city Master Plan requirements. Although we acknowledge the presence of investors as important, previous studies have argued these actors as invisible

stakeholders in land acquisition processes and related compensation aspects (Nikuze et al., 2020). Therefore, this study focuses on the opinions of the visible stakeholders: the planning officials and the affected people.

An informal settlement covering two cells (Figure 4.1): Nyamabuye and Nyamugari, Gatsata Sector, Gasabo District, was selected as a research site. The area is located close to Nyabugogo main commercial center and about 5 km kilometers from the central business district. A large part of this informal settlement has been classified as areas with worse living conditions and high disaster risk-prone area because of constructions on steep areas with slopes above 40% (RHA, 2013).

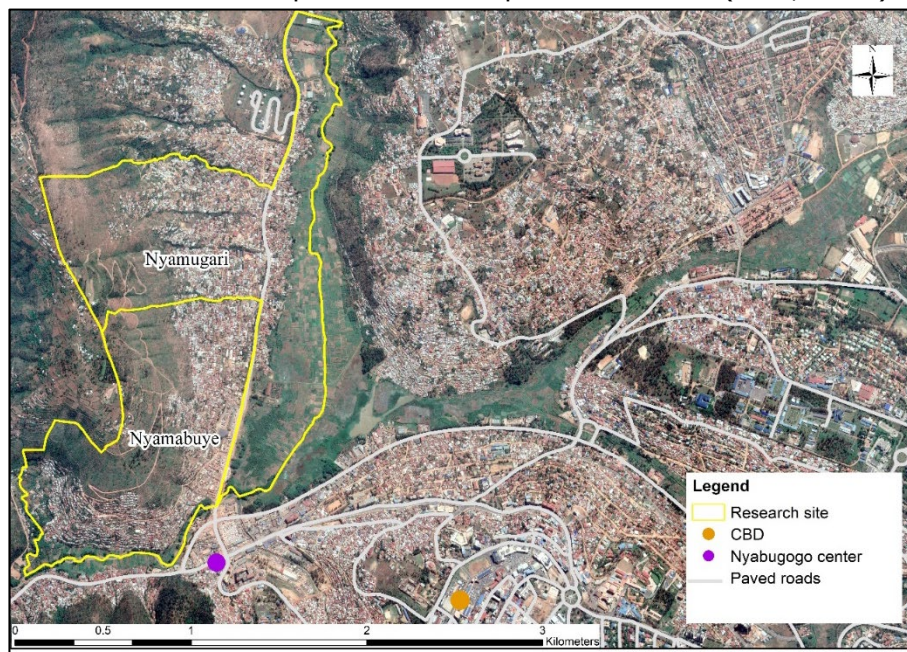


Figure 4.1: Image showing the location of the research site. Image source: Google Earth 2019

4.3 Materials and methods

4.3.1 Preliminary list of criteria for resettlement site selection

Building upon literature on housing, residential location preferences, resettlement, relocation, and studies specific to the context of Kigali regarding livelihood impact of resettlement on the affected informal dwellers, a preliminary list of criteria relevant for resettlement site selection was compiled. Scholars have identified various housing and residential attributes important to consumers' preferences. These are classified as intrinsic factors such as house size, internal design and extrinsic factors such as building quality and materials (Tan, 2012). There are also environmental and location attributes (Hurtubia & Bierlaire, 2010; Kam, Sheng, Lim, Al-obaidi, & Shwan, 2018). This study focuses on location attributes, and the identified criteria are as follows:

Proximity to education facilities, health facilities and markets.

These social infrastructure are valuable assets that households, in general, prefer to live close to (Axhausen & Scott, 2001; Hurtubia & Bierlaire, 2010; Mulliner & Algrnas, 2018; van Vyvere, Oppewal, & Timmermans, 1998; Zondag & Pieters, 2005). The opportunity given to resettled people to have reasonable access to health facilities and places of education, especially the households with children, contribute to the success of a resettlement project (Correa et al., 2011; Reddy et al., 2015; Schmidt-Soltau, 2003). Similarly, access to fair markets or shopping areas is necessary to minimize food insecurity among displaced urban households (Nikuze et al., 2019).

Proximity to the city centre and employment places. Distance from the city centre constitutes another important criterion in selecting a resettlement site for informal urban dwellers. Low-income people like to live close to places that offer employment opportunities (Axhausen & Scott, 2001; Guo & Bhat, 2007; Tan, 2012; van Vyvere et al., 1998; Zolfaghari, Sivakumar, & Polak, 2012; Zondag & Pieters, 2005). In this regard, living close to Central Business Districts (CBD) has been one of the strategies for securing employment opportunities among urban dwellers (Schirmer, Eggermond, & Axhausen, 2014; Sina, Chang-Richards, Wilkinson, & Potangaroa, 2019a). Several resettlement studies reported the loss of jobs among the displaced urban informal settlement dwellers due to being resettled far from the places of work, including the city centre (Nikuze et al., 2019; Patel et al., 2015). Hunter and Posel (2012) found that specifically, the involvement of

informal settlement dwellers in low-wage employments poses a challenge to their relocation further away from urban centres. Other studies showed that basic infrastructures such as schools tend to be concentrated in central areas and people living in inner cities enjoy better access to such facilities compared to those living in the suburbs (Gebre, 2008).

Proximity to origin settlement. It is argued that living close to the previous location is essential for resettled households (Reddy et al., 2015). Studies found that, in general, people like to stay close to the previous settlement to maintain their existing social networks and accessibility to workplaces (Axhausen & Scott, 2001; van Vyvere et al., 1998). Scholars found that long distances from the original settlement become an obstacle to maintaining prior employment and income among resettled urban dwellers (Patel et al., 2015). In many cases, the economic activities such as home-based businesses and other informal survival strategies of urban poor are linked to their living neighbourhoods. Distant relocation may lead to income loss due to loss of such opportunities or additional transport costs (Cernea, 1999). According to Correa et al., (2011), one of the social development requirements is to support and promote the existing formal and informal socioeconomic organization of resettled households.

Proximity to roads and bus stops. Although living close to a road can have its disadvantages, it is, in general, argued that people like to live close to roads and bus stops for accessibility (Ardeshiri, Willis, & Ardeshiri, 2018; Axhausen & Scott, 2001; van Vyvere et al., 1998; Zondag & Pieters, 2005). Accessibility to these two critical physical infrastructures has been identified as essential for both livelihood resilience and socio-economic development of the resettled households, enabling resettled people to travel to workplaces and other different services (Correa et al., 2011; Sina et al., 2019a). As Nikuze, Sliuzas, and Flacke, (2018) argued, resettlement sites with easy connections to public transport facilities such as bus stops are crucial for the mobility of the displaced households and greatly influence the perceived suitability of a resettlement site by the resettled families.

Land price and compliance with existing land use plans. Land value can also influence the resettlement site selection. As reported in various studies, often the limited budget forces many governments to

relocate people in rural areas where the land is cheap (Uwayezu & de Vries, 2019a). Complying with land use plans (residential, commercial, agricultural, etc.) and related restrictions is essential to ensure safe conditions for human settlement (Correa et al., 2011; Reddy et al., 2015).

Table 4.1: *Spatial Criteria for site suitability assessment in this study.*

Criteria	Rationale	Sources
Proximity to primary schools	Families with children prefer to live close to educational facilities.	(Axhausen & Scott, 2001; Clark, Deurloo, & Dieleman, 2010; Hurtubia & Bierlaire, 2010; Nikuze et al., 2019; Reddy et al., 2015; Schmidt-Soltau, 2003; Tan, 2012; van Vyvere et al., 1998; Zondag & Pieters, 2005)
Proximity to secondary schools		
Proximity to health centres	Health care services are a basic need for all citizens	(Axhausen & Scott, 2001; Guo & Bhat, 2007; Hunter & Posel, 2012; Mahalingam & Vyas, 2011; Nikuze et al., 2019; Patel et al., 2015; Zolfaghari et al., 2012; Zondag & Pieters, 2005)
Proximity to hospitals		
Proximity to trade centres	Distance to grocery shops and distance to shopping centres are often included in residential location choice models	(Axhausen & Scott, 2001; Guo & Bhat, 2007; Hunter & Posel, 2012; Mahalingam & Vyas, 2011; Nikuze et al., 2019; Patel et al., 2015; Zolfaghari et al., 2012; Zondag & Pieters, 2005)
Proximity to commercial centres		
Proximity to markets		
Proximity to city centre	Securing accessibility to job opportunities	(Axhausen & Scott, 2001; Guo & Bhat, 2007; Hunter & Posel, 2012; Mahalingam & Vyas, 2011; Nikuze et al., 2019; Patel et al., 2015; Zolfaghari et al., 2012; Zondag & Pieters, 2005)
Proximity to employment* places	Ease of access to job opportunities,	(Axhausen & Scott, 2001; Guo

	especially for low-income people due to transport costs	& Bhat, 2007; Hunter & Posel, 2012; Nikuze et al., 2019; Patel et al., 2015; Zolfaghari et al., 2012; Zondag & Pieters, 2005)
Proximity to the previous location	Familiarity with the local setting and ability to maintain local social networks	(Axhausen & Scott, 2001; Correa et al., 2011; Patel et al., 2015; Reddy et al., 2015; van Vyvere et al., 1998)
Proximity to bus stops	Public transport facilitates access to multiple services in the city Both advantages (accessibility) and disadvantages (noise and air pollution)	(Ardeshiri et al., 2018; Axhausen & Scott, 2001; Correa et al., 2011; Nikuze et al., 2018; Sina et al., 2019a; van Vyvere et al., 1998; Zondag & Pieters, 2005)
Proximity to major roads		
Land price	Affordability for acquiring land for resettlement	(Uwayezu & de Vries, 2019a)
Residential zone**	Hazard free residential zone	(Correa et al., 2011; Reddy et al., 2015)

* Spatial data not available

** Residential areas in this study

4.3.2 Stakeholder interviews

During the period of November 2020 to February 2021, the preferences of two groups of stakeholders: households to be displaced (from the

research site) referred to here as affected people and governmental officers referred to here as planning officials, were elicited using face-to-face household interviews (appendix 7) and an online survey (appendix 8), respectively. Online survey was considered due to Covid-19. However, this option was only used for the planning officials because they had the ability to fill the questionnaires by themselves, including their education level and access to internet. Systematic sampling was used to select respondents for the interviews with the households in the research site. As mentioned in section 2, the research site is an informal settlement whose large part is considered as a disaster risk-prone area. It is on the priority list among the communities that will be displaced. Thus, all the interviewed households were aware of their imminent displacement which can happen at any time. A two-stage cluster sampling was followed: 1) clusters were created according to two administrative boundaries: first cells and then villages; 2) respondents were randomly sampled in proportion to the number of the households within the two cells and their respective villages. The sampling unit is the household and the heads of the households were interviewed, representing themselves, their households and their stakeholder group. In total, 99 households were interviewed.

Participants representing the planning officials' group were identified based on their position as planning officers, their respective institutions, and their involvement in resettlement, especially of informal settlement dwellers. Using snow-balling sampling (Kumar, 2011), planning officials were selected purposively according to whether they have been indirectly or directly involved in the planning and implementing displacement and resettlement projects in Kigali. We elaborated a preliminary list of 25 planners known to be directly related to resettlement issues in Kigali and through them, we identified other relevant officials. We sent an online survey to 25 planners and we received 14 valid responses. Although a small group, this represents a substantial number of the planning officials involved in resettlement decisions.

Through these interviews, the respondents were presented a preliminary list of criteria (Table 4.1), established through literature review and asked to indicate the importance of each criterion, considering the need to minimize the adverse livelihood impacts and

impoverishment risks for resettled households. A total of 13 criteria were presented to participants. Each criterion was rated using a five-point Likert scale method from highly important (1) to highly unimportant (5). Criteria with similar importance should therefore have similar scores. Using open-ended questions, we also gathered other criteria missing from the list and that the respondents thought to be important to them and relevant to the context of Kigali.

4.3.3 Data analysis

The data analysis's main objective was to explore the importance attached to each criterion by both stakeholder groups' participants and identify if any significant differences in perceptions/ preferences exist between planning officials and affected people. Therefore, three primary analyses were undertaken: a) analysing differences in preferences within each individual stakeholder group; b) inter-group comparison to analyse whether the group's preferences were different between both groups and c) spatial multi-criteria analysis to model the spatial effects of the stakeholder's priorities.

Analysis of stakeholders' preferences within groups

Descriptive statistics (the mean rating) were calculated to explore the importance attached to each criteria. We assessed the statistical differences of criteria importance rating among participants in each stakeholder group. The Friedman rank-sum test was used to identify if any significant differences in opinions/ preferences exist among participants of each stakeholder group. Friedman test is a non-parametric, two-way analysis of variance by ranks statistic, which helps test differences between more than two conditions for which the same entities have provided the scores (Pallant, 2001). Furthermore, content analysis of the open questions was done to identify other criteria that the stakeholders mentioned.

Inter-group comparison of stakeholders' preferences

Second, we conducted an inter-group comparison to analyse whether preferences were similar or different between both stakeholder groups.

For that, we used the Mann-Whitney U rank-sum test to assess differences in preferences among the two stakeholder groups. Mann-Whitney is also a non-parametric statistical test that does not make any assumptions about the data's underlying distribution (Pallant, 2001). The test was used to compare statistical differences among two groups for given criteria and determine which criteria were significantly rated higher.

Mapping the suitability of residential areas based on the stakeholder's preferences

In Kigali city, all land-use planning should comply with the city master plan. In this research, based on the identified preferences, we assessed the suitability of all residential land use in the Master plan. We followed four main steps of Spatial Multi-criteria Analysis (SMCA) to map the spatial effects of the stakeholder's preferences. Maps of criteria to be used in the suitability analysis were first prepared. Except for the land price, all other criteria are proximity criteria and were prepared using an accessibility model based on cost distance analysis (Nikuze et al., 2018). Then, the criteria' original values were standardized and transformed to comparable units (Malczewski & Rinner, 2015). In the present study, standardization was performed by using maximum standardization (Malczewski, 1999), by converting original criteria scores (each expressed in its unit of measurement, i.e, distance, price of land) into dimensionless scores ranging from 0 (less preferred location) to 1 (most preferred location) for the criterion that has a positive relationship with the suitability of an area (i.e., the higher the criterion value, the higher the suitability). In case the opposite applied (i.e., the higher the criterion value, the lower the suitability). Land price was the only criterion considered to have a negative relation according to planning officials' preferences: the higher the land price value, the less the location is preferred. Whereas, according to the affected people, the land price has a positive relation with the suitability of a site: the higher the land price value, the more the site is preferred.

Out of 13 rated criteria, only twelve for which spatial data were available were included in the suitability analysis. Proximity to workplaces was not included in the suitability analysis. Also, additional criteria mentioned during the interviews, such as availability of water and electricity, green spaces and recreation areas, were not

incorporated in the analysis. An overview of spatial data used in the suitability model are presented in appendix 9.

Once all the maps were standardized to the same value range, their corresponding relative importance, known as weights, were assigned. Weighting represents a critical stage aimed at including into the analysis the preferences of stakeholders. In this study, we applied the rank method (Malczewski & Rinner, 2015) to translate participants' preferences into quantitative values of importance. We first ranked the twelve criteria based on the geometric mean of the Likert scale responses (Awasthi, 2009; Jones, Tefe, & Appiah-opoku, 2015). After establishing the ranking list, quantitative weights for each criterion were determined using the rank-sum weights method (Malczewski & Rinner, 2015) using the formula below:

$$w_k = \frac{n - p_k + 1}{\sum_{k=1}^n (n - p_k + 1)}$$

W_k is the k th criterion weight, n is the number of criteria under consideration ($k=1,2,3,\dots,n$), and p_k the criterion's rank position. Finally, the standardized and weighted maps were aggregated to generate overall suitability maps, showing the degree of suitability to host a resettlement site. A weighted linear combination method was used according to the following formula:

$$S = \sum_{i=1}^n w_i x_i$$

S is the suitability score, n the number of criteria; w_i the weight assigned to criteria i , x_i is the normalised criteria i . This aggregation process was done using CommunityViz 5.2.1 (City Explained Inc., 2020), a planning support system software and extension of ArcGIS.

4.4 Results

4.4.1 Targeted peoples' preferences

Table 4.2 summarises the characteristics of the interviewed households.

Table 4.2: *Characteristics of the interviewed households.*

Category	Number of respondents	Percentage (%)
<i>Gender</i>		
Male	39	39.4
Female	60	60.6
<i>Age</i>		
Younger than 30	15	16.0
31-40	28	29.5
41-50	23	24.0
Older than 50	29	30.5
<i>Occupation</i>		
Self-employed	17	17.2
Employed	45	45.5
Unemployed	31	31.3
Agricultural activities	6	6.10
<i>Children going to school</i>		
None	21	21.2
One	18	18.2
Two	30	30.3
Three	13	13.1
Four	11	11.1
More than four	6	6.0
<i>Time spent in the settlement</i>		
<10 years	30	30.3
10-19 years	24	24.2
20-29 years	22	22.2
30-39 years	14	14.1
40-49 years	4	4.0
≥ 50 years	5	5.1

A Friedman test was used to determine whether the preferences for thirteen criteria are statistically different among the affected people. Results in Table 4.3 show that the test is statistically significant $p=0.00$. The observed test statistic (χ^2) was greater than the critical value (21.03), suggesting that the criteria were statistically differently rated by the interviewed households.

Table 4.3: Friedman test statistics for the rating of the criteria by the stakeholder's groups.

Affected people	
Number of participants*	92
The test statistic (χ^2)	156.055
Degree of freedom (df)	12
Significance (p)	0.00

*Note: * Because of missing data, the number of participants corresponds to 92 valid responses. At a 5% significance level, $p < 0.05$ for significant difference. Critical value $F=21.03$ for $df=12$, $df=k-1$, k =number of criteria*

The preferences attached to each criteria by the affected people are shown in Figure 2. It shows that almost all the respondents in the affected people had a firm agreement on the high importance of two criteria 1) the proximity to health centres and 2) to primary schools. (96%) gave the highest priority to proximity to health centres, rating it as highly important. Similar, 98% of respondents rated proximity to primary schools as important, 89 % rating it as highly important. Affected households expressed a firm agreement that the low price of land should be the least important criterion in selecting their resettlement site.

On the other hand, the affected people expressed generally mixed preferences regarding proximity to CBD, hospitals, bus stops, major roads and original settlement. The rating of these criteria was diverse and poorly agreed upon by the affected people. The Proximity to CBD, specifically received low rates compared to all other criteria. The number of the people who believe it less important (34 %) is close to the number of those who rated it as highly important (40%), making it the most debated criterion.

In addition to the thirteen rated criteria, many respondents mentioned the proximity to water and electricity, green areas, and sports fields or recreation areas as important and relevant to their context. A small number claimed the opportunities to carry out agricultural and livestock activities as criteria that need to be considered in selecting their resettlement.

4.4.2 Planning officials' preferences

The respondents were planning officials from five organisations (Table 4.4). More than half of them reported having been involved in the process of selecting a resettlement site.

Table 4.4: *Characteristics of the interviewed planning officials.*

Category	Number of respondents
<i>Organization</i>	
City of Kigali	4
Nyarugenge District	2
Gasabo district	1
Rwanda Housing Authority (RHA)	5
Ministry in charge of Emergency Management	2
<i>Ever participated in resettlement site selection</i>	
Yes	8
No	6

The Friedman test was also utilised to determine if the ratings of the thirteen criteria among the planning officials were statistically different. Table 4.5 shows that the test is statistically significant $p=0.00$. The observed test statistics (χ^2) is also greater than the critical value (21.03), suggesting that the criteria were statistically differently rated by the interviewed planning officials.

The preferences attached to each criteria by the planning officials are shown in Figure 4.2. Results revealed a consensus among planning officials on the majority of the rated criteria but also mixed preferences for some criteria. Proximity to primary schools received the first highest consensus where the majority considering it as highly important while proximity to health centres received the second-highest consensus of respondents considering it as highly important. Almost all planning officials rated proximity to health centres as highly important and very few as somewhat important. Slightly more than a third of respondents rated proximity to health centres as highly important. There is a great agreement among the planning officials on the high importance of the low price of land when selecting a resettlement site.

Table 4.5: Friedman test statistics for the rating of the criteria by the stakeholder's groups.

Planning officials	
Number of participants*	8
Test statistic (χ^2)	37.390
Degree of freedom (df)	12
Significance (p)	0.00

Note: Because of missing data, the number of participants corresponds 8 valid responses. At a 5% significance level, $p < 0.05$ for significant difference. Critical value $F=21.03$ for $df=12$, $df=k-1$, k =number of criteria.

Except the low price criterion, all other criteria are represented by the proximity to the concerned facility/service

Criteria such as proximity to trade centres, commercial centres and markets were rated almost similar among the planning officials. About half of respondents rated each of these three criteria as highly important and another significant proportion rated them as somewhat important, whereas only one respondent considered these criteria as relatively important. The planning officials expressed mixed preferences for proximity to CBD, hospitals, bus stop, original settlement and workplace. In contrast to other criteria, some planning officials believe these criteria to be the least important.

The planning officials mentioned water and electricity utilities as additional essential criteria that need to be included in resettlement site selection. Moreover, all interviewed planning officials firmly believe that residential areas in the city master plan allowing high-rise constructions play a significant role when selecting a resettlement site.

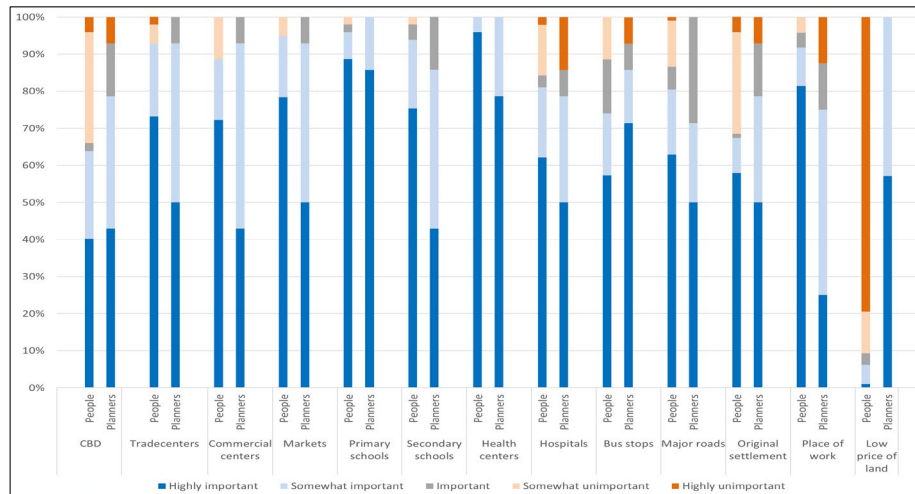


Figure 4.2: Comparison of affected people and planning officials' preferences for criteria

Note: Except the low price criterion, all other criteria are represented by the proximity to the concerned facility/service

4.4.3 Comparison of preferences: inter-group analysis

A Mann-Whitney U test was used to determine if the differences between affected people and planning officials' ratings of the resettlement site selection criteria were statistically significant. Table 4.6 provides the results of the Mann-Whitney U test. Highlighted are the criteria whose rating is statistically different between the two groups at 5% significant level ($p < 0.05$ for significant roads differences).

The Mann Whitney test results indicate that there are statistically significant differences between affected people and planning officials with regards to five criteria: proximity to markets, secondary schools, health centres, place of work and the land price. For these criteria, the Mann-Whitney test yielded a significance value of $p = 0.000$, indicating that the opinions of both the affected people and planning officials differ in a statistically different sense. As can be seen in Figure 4.2, a large number of affected people placed a higher importance on these five criteria in comparison to the planning officials.

Table 4.6: Mann Whitney test statistics for the rating of the criteria in the two groups of stakeholders.

Criteria	Test statistic U	z	Significance (p)
Proximity to the city centre	590.50	-0.829	0.407
Proximity to trade centres	821.50	1.580	0.114
Proximity to commercial centres	842.00	1.770	0.077
Proximity to markets	862.00	2.145	0.032
Proximity to primary schools	695.00	0.255	0.799
Proximity to secondary schools	897.00	2.441	0.015
Proximity to health centres	796.50	2.479	0.013
Proximity to hospital	745.00	0.827	0.408
Proximity to bus stop	575.00	-0.981	0.326
Proximity to major road	746.00	0.682	0.495
Proximity to original settlement	652.50	-0.127	0.899
Proximity to place of work	603.00	3.539	0.000
Low price of price	1079.00	4.552	0.000

A strong disagreement between both stakeholder groups emerged regarding the importance or relevance of the land price criterion. The affected people prefer a high land price at the resettlement site, whereas the planning officials prioritise resettlement sites with a low land price.

There was no statistically significant difference found between affected people and planning officials for the remaining eight criteria. However, on average, the affected people placed significantly higher importance on more criteria than the planning officials. Compared to the affected

people, the planning officials gave higher rates to four criteria: proximity to primary school, bus stop, original settlement and the CBD.

Overall, Figure 4.2 shows that although participants in each stakeholder group have their specific preferences of the criteria, there are some similar patterns between the affected people's and the planning officials' preferences. Both stakeholder groups rated, in general, the proximity to primary schools and health centres as being within the very most essential criteria. The similarity is also present concerning proximity to the city centre, original settlement and bus stops. There is a visible mixture of preferences among participants in the affected people group and in the planning officials' group for these three criteria.

Spatial effects of the preferences: affected people versus planning officials

Figure 4.3 and Figure 4.4 present the suitability results of all residential land use, based on the affected people's and the planning officials' preferences, respectively. Suitability scores range from 0 to 100, with higher scores representing more suitable areas and lower scores showing less suitable locations. Figure 4.3 shows that affected people's preferences resulted in a suitability map for which suitability scores range predominantly between 61-80 (about 12000ha) with very few and scattered highest scores (80-100) near the city center. Contrary to the affected people, Figure 4.4 shows that planning officials' suitability scores range between 61 and 100 for the large part of the city. Unlike the affected people, planning officials' preferences resulted in more highly suitable locations around the city's core and eastern part. The high importance the planning officials gave the proximity to bus stops is the main reason for high suitability scores around the main roads, which also constitutes the city's current bus lines.

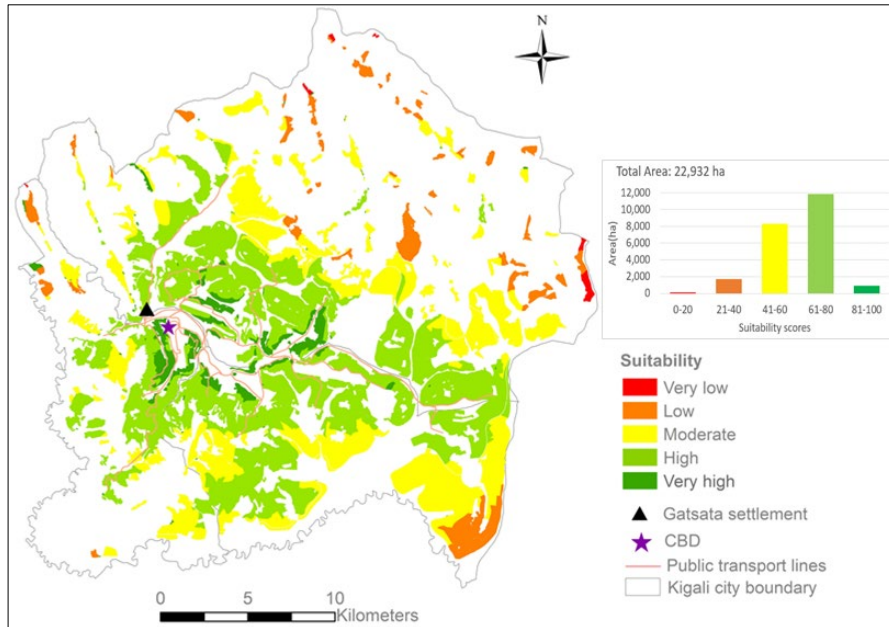


Figure 4.3: Residential land suitability based on the preferences of the affected people

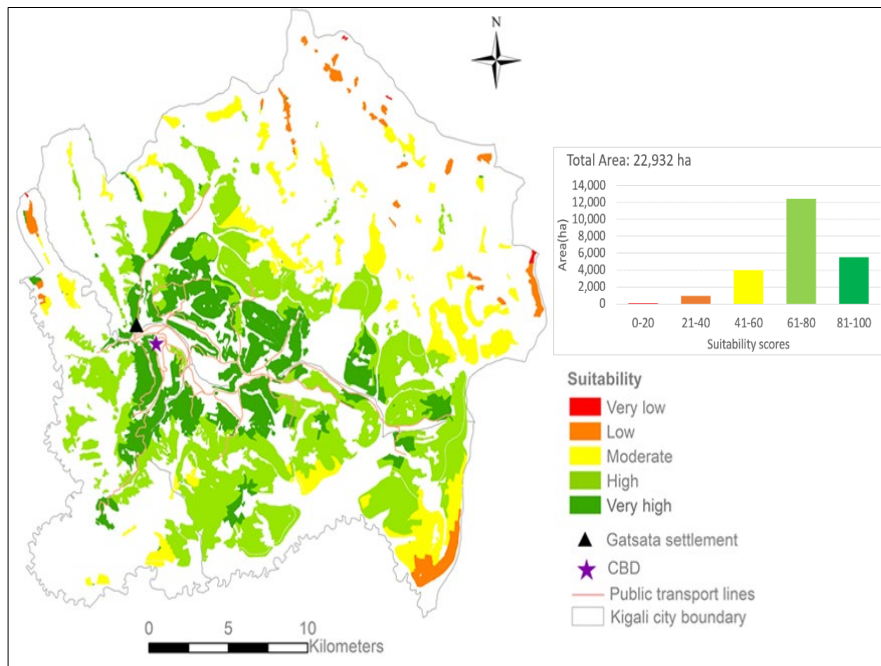


Figure 4.4: Residential land suitability based on the preferences of planning officials

For both stakeholder groups, the areas with low suitability values are located in the north part of the city, in the Gasabo district. This north region is more rural and thus has few basic infrastructures compared to the rest of the city.

Figure 4.5 presents the level of agreement between the affected people's and planning officials' preferences concerning the very high suitable locations (scores above 80 on a scale from 0 to 100). The map shows a fair agreement (difference of suitability scores less than 10) between the two stakeholders for a big part of the very highly suitable areas (about 700ha), mainly areas located in the inner-city along the public transport lines. It also reveals an increased level of difference (difference between suitability scores greater than 10) between the two groups for some areas in the inner-city and the outskirts eastern part of the city.

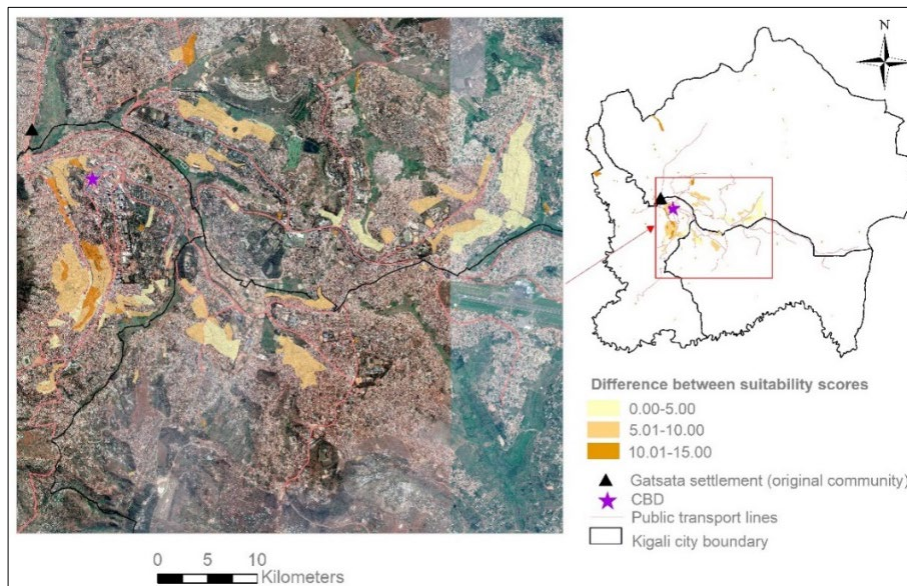


Figure 4.5: Map showing the differences between affected people's and the planning officials' suitability scores for the very high suitable areas.

4.5 Discussions

The results from the study revealed convergent and divergent preferences between the planning officials and affected people as well as different preferences for some criteria across participants within each group. Similar to the work of Vlaeminck et al. (2016), the affected people and planning officials strongly agree on the importance of education and health-related criteria. Not surprisingly, affected people's preferences revealed that proximity to health centers was almost unanimously considered as highly important, while proximity to primary schools received the second-highest consensus as highly important. Likewise, the planning officials' responses revealed that proximity to primary schools comes first, followed by the proximity to health centers. These results regarding proximity to primary schools are consistent with other studies showing that households, especially those having children going to school, prefer to live close to schools (Clark et al., 2010; Hurtubia & Bierlaire, 2010). Further, the results regarding proximity to health centers align with the literature which generally argue that health care services are basic needs and thus influence preference of a residential location (Axhausen & Scott, 2001; Clark et al., 2010; Tan, 2012; Zondag & Pieters, 2005). Our study, however, adds to these findings that, in the context of mass relocation it is vital to recognize specific needs of a given community to be relocated regarding education or health facilities. In this study, in comparison to health centers and primary schools, affected people gave a relatively low importance to hospitals and secondary schools. The fact that the health centers provide basic health care services and that the majority of the interviewed households had children going to primary school potentially played a role in giving priority to both criteria. Not considering this issue, resettlement may fail to address the needs of the concerned community. Therefore, the study findings highlight the importance of analysing the preferences of affected people in the early stage of resettlement site selection and how erroneous it might be to aggregate the criteria to be considered.

The findings suggest that preferences between affected people and planning officials are statistically significantly different for some criteria, including land price or land value criteria. While planning officials attach importance to affordable and location with low land

price, the affected people prefer expensive places to ensure tenure security and fair compensation. In generally, the planning officials' preferences regarding the land price criteria support findings in other studies. As Uwayezu and de Vries (2019a) have observed, Kigali city officials and decision-makers give priority to resettlement sites in areas with a low land price when resettling informal settlement dwellers. The evidence that both stakeholder groups exercised a strong disagreement on the land price criterion suggests that this current policy practice of focusing on cheap land could exacerbate perceived tenure insecurity and dissatisfaction among the affected people.

Moreover, open-ended questions revealed that the residential zoning categories appeared to significantly influence resettlement site selection as expressed by the planning officials. In Kigali, all new development should comply with its current master plan. Most planning officials suggested the zoning categories that allow high-rise construction to be potential locations that would provide resettlement opportunities for informal settlement dwellers in Kigali. However, the affected people responses in over 90% of the interviewed households were not aware of the different residential categories, although interviewed expressed the preferences for single-family houses. This lack of awareness regarding the residential zoning and related technical requirements among the affected people can be partly attributed to the fact that experts have elaborated and revised the current city master plan with limited participation of low-income residents, including informal settlement dwellers (Esmail & Corburn, 2019). Therefore, our study suggests a need to raise awareness about the different residential zones among the concerned communities, introduce them to other residential zones, to deal with expectations among the affected people. If such lack of information and knowledge is not addressed, it can exacerbate conflict of interests between the planning officials and the targeted people. The interviewed households also placed the most importance on proximity to markets. However, in contrast, the planning officials perceived this criterion as less important. The finding of higher importance given to markets by the affected people supports other studies indicating that markets as shopping places are vital for households (Mulliner & Algrnas, 2018). In this study, the high importance placed on markets could also be explained by many income earners involved in small selling business activities and casual jobs taking place in markets.

Scholars have found that middle and low-income classes prefer to live close to a bus stop to access public transport since their income status does not allow them to afford private transport (Ardeshiri et al., 2018). Further, it is argued that access to bus stops influences livelihood resilience and reconstruction of the displaced households (Correa et al., 2011; Sina et al., 2019a). However, our results indicate that in contrast to planning officials, affected people gave a less importance to proximity to a bus stop. Although not directly resulting from our study, social, economic characteristics, and planning context could have influenced people's preferences in this particular context of resettlement (Baert et al., 2020). There seems to be a strong dependency on motorcycles due to their flexibility and speed compared to public transport buses among the Kigali citizens (Zyl, Swanepoel, & Bari, 2014). The preferences of motorcycles might have led to less focus and low perceived importance of proximity to bus stops among the people. As expressed by Mulliner and Algrnas (2018), where there is a dependency on other means of transport, people tend to give a less importance to criteria such as proximity to a bus stop. Furthermore, the low importance of bus stop may also be related to the fact that many informal settlement dwellers prefer to live close and often walk to their employment areas (Hunter & Posel, 2012), what is also the case in Kigali according to Uwizeye, Irambeshya and Wiehler (2020).

This study results provide insights into mixed preferences regarding proximity to CBD and origin settlement. Proximity to the CBD and the original settlement was the most debated criteria and was perceived to some extent as less important by a considerable number of interviewed from both the affected people and the planning officials. Other researchers have previously theorised about the significance and preferences of proximity to city centers and the original settlement in the context of informal settlement dwellers. As argued, living close to the city center is advantageous in terms of employment opportunities, especially for informal urban dwellers (Qian, 2017). This is surely the case in Kigali as well, where the CBD is the place that supplies informal jobs and income opportunities to many residents of informal settlement dwellers in Kigali. Specifically, the livelihood of many households in the study area is intertwined with income opportunities found in the CBD and their neighbouring Nyabugogo commercial area (Nikuze et al., 2018). Similarly, it is argued that resettlement far from the original

settlement becomes an obstacle to maintaining prior employment and income among resettled urban dwellers (Patel, Sliuzas, & Mathur, 2015). Vlaeminck et al., (2016) found that distance to original settlement as a proxy for cultural, economic and social livelihood influence resettlement preferences among the affected households. Resettlement of informal settlement dwellers far from the CBD and the origin settlement is said to be associated with several adverse impacts on the displaced households (Nikuze et al., 2019, Patel et al., 2015). Unexpectedly, however, these two criteria appear less critical or in priority for many of the affected people, as is evident from our results. A possible explanation of low preferences for proximity to the CBD and original settlement could be the adopted city master plan and its implementation, which has resulted in the clearance of many old settlements near the city center. Due to such demolitions, affected people feel that resettlement close the CBD is currently not possible, even if it would be beneficial. Another possible explanation of low rate of proximity to the CBD, especially among the affected people could be the socio-economic characteristics such as age, old people would prefer to live away of the city center and the agriculture and livestock preferences among few households, which are not easy to practice in the inner-city areas.

Spatial multi-criteria is applied to produce residential land suitability maps and compare the spatial effects of the preferences (or opinions) of the planning officials and the residents in our study area. Our findings suggest that there are few residential areas with low suitability scores based on both affected people and the planning officials' opinions. This is not surprising since the suitability analysis was carried out on residential land uses defined in the city master plan. However, affected people's preferences resulted in spatial effects different from one of the planning officials, with low suitability scores in the former scenario compared in the latter. An investigation of the spatial patterns shows a mixture of minor and significant differences for the very high suitable areas clustered in the inner-city. Other locations with significant differences appear in the outskirts and eastern party of the city.

The attempt was to assess suitability based on social and economic factors involved in the site selection. Due to lack of digital data not all rated criteria were incorporated into the suitability model, while the

affected people perceived it as necessary. From the original list of the rated thirteen criteria, twelve were included in the suitability assessment model. Proximity to the workplace is not incorporated into the analysis. There was no spatial data available for this criterion considered by both stakeholders because informal dwellers often choose to live close to where they work or find a job. Our analysis did not also include criteria regarding access to water and electricity and proximity to green spaces or recreation areas, although the affected people insisted on these infrastructures and services during the interviews. Other scholars suggested that the lack of digital data could limit GIS and multi-criteria analysis (Strager and Rosenberger, 2006). To fully represent the actual stakeholder's perceptions and support resettlement sites' prioritization, one could further enhance our suitability model by including criteria such as proximity to workplace, green spaces and recreation areas, electricity and water availability. Nevertheless, the divergence between the affected people and the planning officials and the resulting spatial implications found in this study appears to support the claim of a relationship between conflicting interests, contestation behaviours and low acceptance of the proposed resettlement plans among the affected dwellers in our study area (Nikuze et al., 2020). However, the planning officials' opinions do not entirely misalign with the preferences of the affected people and this could be a starting point in the search for consensus if the views of both stakeholders are taken into account.

4.6 Conclusions

Increasing numbers of resettlement projects of urban informal settlement dwellers due to urban development and disaster risk reduction actions are among the most significant challenges to authorities in developing countries. Urban-induced displacement and resettlement projects negatively impact the affected households and communities' livelihoods. Failure to consider their preferences in the decision-making may be a barrier to the satisfaction, leading to conflicts and local social opposition or low acceptance of resettlement decisions proposed by the planning officials alone. The purpose of this study was twofold. First, the study used a case of one informal settlement area to investigate affected households' preferences for resettlement site selection in Kigali and compare these to the opinions

of planning officials to identify whether the views of both stakeholder groups are aligned. Second, the spatial implications of the preferences of both stakeholder groups were examined.

With respect to the first purpose, results reveal significant discrepancies as well as agreement between the affected people's and planning officials' views on what the households believe to be essential criteria. As notable strong divergences, the affected people prefer a high land price location, associating this criterion with fair compensation and tenure security, whereas the planning officials prioritise areas with low land price for affordability reasons. Affected people also expressed preferences for single houses, while the planning officials give priority to residential zones that allow high-rise residential buildings. The planning officials placed less importance on proximity to markets and high importance on proximity bus stops, whereas the affected people believed the opposite. These findings emphasise that such different opinions need to be negotiated to reach consensus if local opposition are to be addressed and misperceptions of each stakeholder group towards another are to be clarified.

The results suggest agreement between affected people and planning officials regarding the importance of education and health-related criteria. With the apparent increase of contestation in current resettlement projects, the convergent views indicate that local authorities may experience resistance while preferences and opinions of the planning officials and affected people do not entirely misalign, emphasizing the need for improved communication between the two groups during resettlement processes. Furthermore, the study revealed intra-groups diversity or heterogeneous preferences, with varying preferences among the affected people for criteria such as proximity to CBD and origin settlement, which also requires attention in resettlement processes.

Findings in this research extend the existing knowledge on resettlement and housing preferences, focusing on location attributes of the new settlement. To the best of our knowledge, this research is the first to investigate the preferences of the resettlement affected urban households in Kigali. Thus, from a practical perspective, the research findings can be valuable to the local decision-makers in resettlement processes, by enhancing their understanding of location attributes and the preferences of the targeted people. A list of thirteen

attributes/ criteria considered in this research might be insufficient considering that other criteria might exist and findings from one targeted informal settlement might not be generalised. Nevertheless, authorities should be sensitive to targeted people's needs, such as living close to workplaces, markets, health centers, schools in the ongoing induced resettlement projects to minimize impoverishment risks, dissatisfaction and mitigate contestations.

Concerning the second purpose, this research shows that differences in the preferences between the affected people and the planning officials resulted in substantial spatial implications in terms of different spatial suitability levels of the residential areas. Therefore, resettlement site selection should be based on both stakeholder groups' views to contribute to more effective and conflict-free resettlement processes. The planning authorities should seek opportunities to use spatial multi-criteria analysis and related maps to investigate where their suggestions align with affected people's preferences and perceptions. Future research or practical applications might want to focus specifically on exploring the use of such suitability maps or assessment tools in an interactive environment for stakeholder negotiations in the resettlement site selection process.

Affected Households' and Planning Officials' Preferences for resettlement site attributes

Chapter 5 - RESET- An interactive REsettlement Site Evaluation Tool to support stakeholders' collaboration

5.1 Introduction

Identifying a suitable resettlement site is a critical decision in resettlement projects. The location of a resettlement site shapes and influences the livelihood resilience of the resettled communities (Sina et al., 2019a; Sina, Chang-Richards, Wilkinson, & Potangaroa, 2019b). A poor choice of a resettlement site is one of the most cited causes of site rejection and abandonment, leading to a resettlement project's failure (Oliver-Smith, 1980). Moreover, most of the livelihood impacts and impoverishment risks usually faced by the displaced communities are related to the location of the resettlement site (Abebe & Hesselberg, 2015; Bartolome et al., 2000; Corsellis & Vitale, 2005; Ibrahim et al., 2015; Kinsey & Binswanger, 1993; Nikuze et al., 2019; Patel et al., 2015). In this regard, identifying a site with minimal disruption of the affected peoples' livelihoods is essential for successful outcomes in resettlement processes (Viratkapan & Perera, 2006).

Literature suggests that the affected people need to be effectively engaged in selecting their resettlement site (Cernea, 1995; Nikuze et al., 2019; Patel et al., 2015). This is because exclusion and lack of participation of affected people are always associated with dissatisfaction, perceived impoverishment risks, contestation and rejection of the proposed resettlement plans (Nikuze et al., 2020, 2019; Patel et al., 2015). Moreover, for the decision-makers, meaningful and effective participation of affected people can reduce inaccurate assumptions about the needs and preferences of the resettled communities. For instance, some studies have highlighted significant differences between planning officials' priorities and the affected people in terms of the criteria for resettlement site selection (Nikuze, Flacke, Sliuzas, & van Maarseveen, 2022). In such a context, collaborative or participatory approaches are increasingly recommended to enable decisions based on all key stakeholders' opinions and facilitate lively discussion of their differences in a mutual learning and consensus-building environment (Baert et al., 2020; Patel et al., 2015; Renn, 1999).

Collaborative processes that provide such mutual learning environment require appropriate methods and support tools to support both the analytical and the communicative sides. Planning Support Systems

(PSSs) (Geertman & Stillwell, 2009) literature has attempted to provide methods and tools that can support collaborative processes. PSSs refers to innovative methods and tools found to help facilitate stakeholders' involvement in planning and decision-making processes, enabling joint discussions and exchange of the different stakeholders' knowledge and enhancing the ability of the planning actors to create shared understanding (Champlin & te Brömmelstroet, 2019; Geertman & Stillwell, 2009; Pelzer, Geertman, & van der Heijden, 2016; Pelzer et al., 2014). Several examples of PSS have been developed and applied in various collaborative planning contexts, including renewable energy (Flacke & de Boer, 2017), land use (Arciniegas, Janssen, & Omtzigt, 2011), environmental impact assessment (Shrestha et al., 2018), regional adaptation strategies (Eikelboom & Janssen, 2013) and transport (Boulange, Pettit, Dubrelle, Giles-Corti, & Badland, 2018).

This chapter presents an interactive planning support (PSS) tool, RESET (REsettlement Site Evaluation Tool), to support a participatory process for ex-ante evaluation of potential resettlement sites. RESET is proposed following a recent call for planning support tools to assist interactive learning environments that may improve stakeholders' negotiations during resettlement sites selection (Nikuze et al., 2022). In experimental sessions, we evaluated the usability of RESET and sought to answer two questions: How could a GIS-based interactive PSS support a collaborative resettlement site identification process? What is the usability of the proposed RESET PSS?

The following section introduces the background concepts, including interactive PSS and their usability evaluation. In section 5.3, the conceptual design, the architecture, and the user interface of the tool are presented. Section 5.4 elaborates the testing and the methods used for usability evaluation of the tool in a PSS workshop. Section 5.5 reflects on the RESET PSS, the findings of usability evaluation and provides conclusions, including the limitations and potential improvements.

5.2 Background

5.2.1 Interactive PSS to support stakeholder collaboration

PSS are a set of geo-information-technology-based tools that consist of methods and tools dedicated to supporting those involved in handling the knowledge and information for their specific planning tasks (Geertman & Stillwell, 2009; Geertman, 2006). The contribution (added value) of such PSS in participatory processes has been summarised at three levels: individual, group, and outcome levels (Pelzer et al., 2014). At the individual level, PSS contributes to learning about the object of the planning and learning the perspective of other stakeholders in the planning process. PSS supports collaboration, communication, efficiency, social learning, knowledge co-production, and consensus (Pelzer, 2017; Pelzer et al., 2014). Stakeholders' collaboration which involves interacting, sharing views and revisiting arguments, leads to improved communication. It is argued that successful collaboration and communication enable social learning and co-production of both explicitly and tacit knowledge (Akbar, Flacke, Martinez, Aguilar, & van Maarseveen, 2020). Social learning occurs when people, through deliberation, share their perspectives and exchange knowledge to develop a shared understanding and basis for joint action (K. A. Johnson et al., 2012; Romina, 2014; Selin, Pierskalla, & Smaldone, 2007). PSS facilitates such learning and knowledge exchange among participants by providing support for a dynamic exploration of information and open dialogue, such as allowing questioning assumptions and exchange each other's perspectives (Bautista et al., 2017; Dana & Nelson, 2012; Flacke & de Boer, 2017; Flacke et al., 2020; Mcevoy et al., 2018; Shrestha et al., 2018; Shrestha et al., 2017). Shrestha et al. (2017) found that PSS tools can support building consensus or shared understanding among stakeholders.

PSS developed for touch tables, known as interactive PSS, were found to be particularly suited to support stakeholders' collaboration in participatory spatial planning processes (Aguilar, Flacke, & Pfeffer, 2020; Arciniegas & Janssen, 2012; Arciniegas et al., 2011; Flacke et al., 2020; Shrestha et al., 2017). Interactive PSS tools are typically hardware systems in the form of MapTables combined with geo-spatial

mapping, analytical and visualization tools useful to enhance interaction and facilitate knowledge exchange among stakeholders in a participatory process (Aguilar et al., 2020; Flacke & de Boer, 2017; Shrestha et al., 2018; Shrestha et al., 2017). Interactive PSSs enable stakeholders to share their perspectives and dynamically generate and visualize real-time outputs in group planning activities (Arciniegas & Janssen, 2012). Therefore, our hypothesis is that (RESET) can also help improve stakeholders' collaboration in a resettlement site identification process.

5.2.2 PSS usability

Previous research has shown that the low usability of these computer-based tools is one of the major factors limiting their adoption in planning practice (Vonk, 2005). The usability may influence the perceived added value i.e., the positive improvement in the planning practice that a PSS can bring (te Brömmelstroet, 2017). Therefore, it is argued that increasing the usability, primarily through close involvement of the potential users in the PSS development, is essential for their usefulness and adoption (Russo, Lanzilotti, Costabile, & Pettit, 2018). However, the concept of usability of technology-based tools has been defined in diverse ways. Nielsen (1993) explained usability as how well users can use a provided functionality and suggested five usability dimensions: learnability, efficiency, memorability, satisfaction and errors. The international standard organisation provides a usability evaluation framework ISO 9241-210 consisting of efficiency, effectiveness, and satisfaction aspects. Most recently, Ballatore, McClintock, Goldberg, and Kuhn (2020) used five factors to evaluate the usability of a web GIS-based PSS, including user interface, spatial interface, learnability, effectiveness, and communication. Pelzer et al. (2016) defined the usability of a PSS as the extent to which users can satisfactorily use its information, communication and analysis capabilities. In line with this definition, various scholars have contributed to a long list of aspects that influence the usability of a PSS, such as their interactivity, communicative value, users' satisfaction, among others (Aguilar, Calisto, Flacke, Akbar, & Pfeffer, 2021; Champlin & te Brömmelstroet, 2019; Pelzer, 2017; Pelzer et al., 2016; te Brömmelstroet, 2017).

5.3 Building RESET

5.3.1 Analytical-deliberative process supported by RESET

Considering the necessity for participatory decision-making in resettlement planning, a framework for collaborative resettlement site identification using a Maptable-based planning support tool, RESET, is proposed.

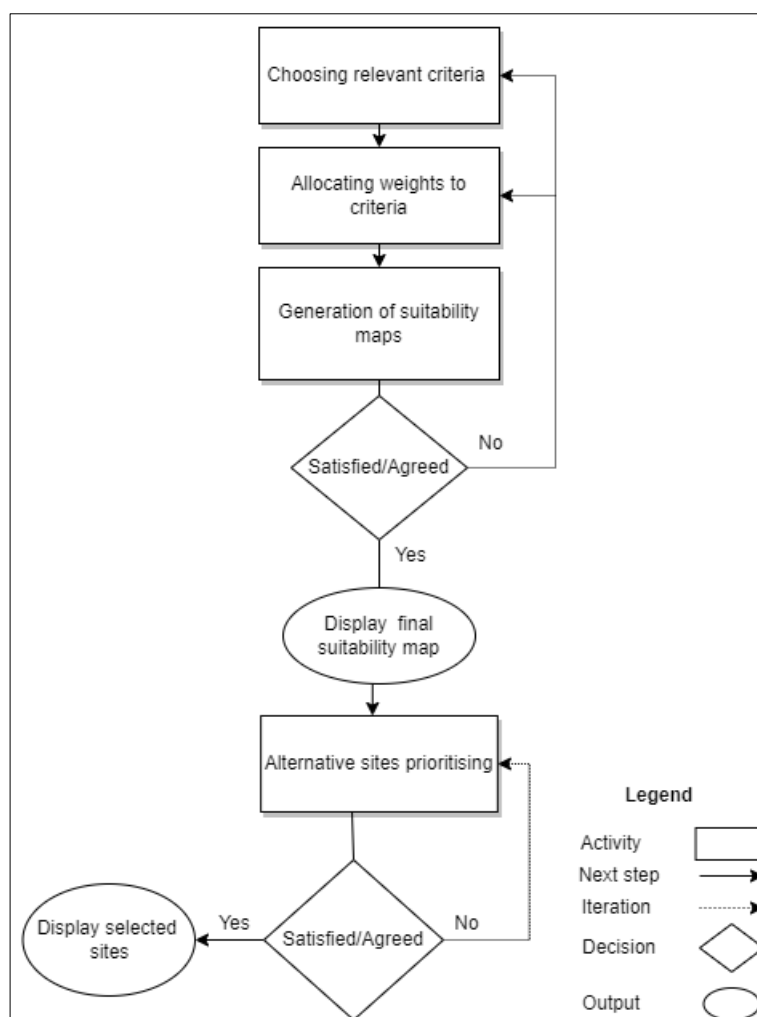


Figure 5.1: Analytical-deliberative process implemented in RESET. Inspired by the model for an analytic and deliberative process in Risk Management (Renn, 1999)

RESET system conceptualisation considers a multi-criteria evaluation approach that supports an analytical-deliberative process during resettlement suitability evaluation and site prioritisation (Figure 5.1). In face-to-face group settings, members of individual stakeholder groups or stakeholder groups together are supported to evaluate the suitability of the potential resettlement sites and prioritise their most preferred locations. In this respect, stakeholders, by conducting multi-criteria analysis, can at the first step negotiate and choose, out of set a of predefined evaluation criteria, the most preferred criteria to be used in the site suitability analysis. At the second step, stakeholders can assign the level of importance to the selected criteria. Such evaluation criteria and associated importance or weights constitute the inputs to the PSS. Each choice of criteria and their weights, suggested by the stakeholders, generates a composite output suitability map that presents a normative view of suitability levels (defined based on suitability scores) of the evaluated potential resettlement locations. In response to any change to the criteria and/ or their weights, the suitability scores are recalculated and a new suitability map is displayed. This dynamic suitability evaluation process allows the exploration of the implications of an individual as well as a set of the selected weighted criteria on the suitability levels of potential resettlement areas. Finally, stakeholders can deliberate on their differences and jointly decide on a final decision in the form of a final suitability map that is used to prioritize a few candidate resettlement sites. In this respect, a sketching component is provided to support stakeholders prioritizing a few alternative sites through drawing while assessing the effects of the choice made on a set of predefined outcome indicators.

RESET is conceptualised as a mactable-based PSS tool. The mactable, a horizontal touch screen table works as an interface between the users and planning support tools. A mactable constitutes a communicative support of the PSS (Pelzer et al., 2014). It provides a platform for discussion while a shared map interface facilitates interaction among users. Stakeholders grouped around a mactable are triggered to exchange perspectives, question the suitability of underlying assumptions, think systematically and learn from each other. Therefore, it is hypothesized that RESET can support improved communication, collaboration, and social learning and building consensus.

5.3.2 Design and implementation

Figure 5.2 presents the abstracted architecture of RESET. A system prototype was designed and implemented in CommunityViz (City Explained Inc., 2020), a PSS for use on the ArcGIS platform. CommunityViz was chosen because it is a customizable PSS that supports suitability analysis by quickly handling changing inputs criteria and their weights, automatically recalculating and displaying the outputs transparently. Other scholars found CommunityViz beneficial when developing spatial decision support tools for site selection (Lieske & Hamerlinck, 2015).

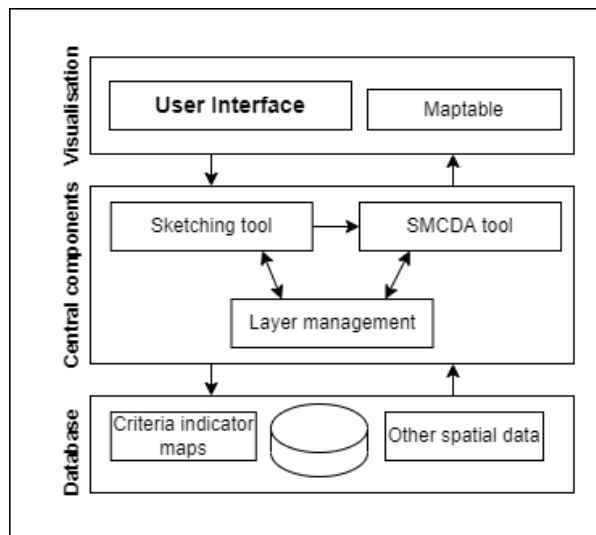


Figure 5.2: Components of RESET

Furthermore, CommunityViz has a solid people-support component. Users' values and knowledge concerning the criteria and their importance are easily incorporated in a decision process and made explicit using the changeable assumption technology, an easy-to-use slider bar. On its interface, the results of the modified inputs are displayed immediately.

Central components

The central components to RESET include a layer management, a SMCDA tool and a sketching tool. The layer management handles all the data included in the system database. The SMCDA tool contains an

auditable spatial multi-criteria model implemented by creating an assumption for each criteria indicator, based on the capabilities that CommunityViz provides. The assumptions give the flexibility to specify the criteria to be included in the site suitability evaluation and their corresponding weights on a scale from 0 to 10. Therefore, the weight of an excluded criteria can be set to zero. The sketching tool consists of a painting feature linked to a dynamic fishnet layer, of a dimension of 10*10 m², with two attributes: the size of the selected site (in Hectare) and estimated number of dwelling units. Once a chosen location is painted, these two attributes are calculated automatically and displayed in two charts. The estimated number of dwelling units indicator was calculated based on the land requirement for single-family houses in the current Kigali city master plan. The current RESET version supports drawing three prioritised sites.

Dataset

Data in RESET include indicators maps prepared for site suitability evaluation. The current version of RESET, built based on Kigali city as a case, incorporates eleven spatial criteria such as proximity to the city center, schools and health facilities, suggested by the stakeholders in the study area.

Table 5.1: *Some of the spatial data used in RESET*

Data	Description
Administrative boundaries	District's boundaries
Primary schools	Infrastructure and services
Secondary schools	
Health centres	
Hospitals	
Trade centres	
Commercial centres	
Markets	
City centre	
Bus stops	
Roads	

The evaluated potential resettlement sites in RESET consist of all residential land use in the city. For more details about data for site suitability evaluation, including all the eleven criteria, their corresponding spatial data and the preparation of related indicator maps see (Nikuze et al., 2022). The data in the tool include other spatial data (see Table 5.1) such as district boundaries, locations of markets, schools, health facilities to be used to generate spatial information for informing the context. These spatial data were obtained as secondary data from the city of Kigali.

User interface and visualisation

RESET's has a custom-designed interface that features interactive functions, dynamic visualisation and layer management (Figure 5.3). A customised toolbar (B) provides access to these interactive functions and contains other navigation functions such as zoom in/ out, pan, select, to allow users to navigate the tool interactively.

One of the main functions is an assumption setting bar (C), a pop-up window that allows initiating sites suitability evaluation. Using this assumption tool, users can perform suitability evaluation following three steps: select the criteria from a list of offered criteria, allocate weights to the preferred criteria using slide bars and run the analysis. For any change of criteria or their weights, the suitability scores of the potential sites can be recalculated and dynamically updated. The outcome of the suitability evaluation is displayed dynamically in real-time and spatially in the form of a 2D suitability map (D). This dynamic layer of suitability evaluation is central to RESET and consists of a transparent dynamic map overlaid on a satellite image of the study area. It displays five normative levels of suitability: very high (dark green), high (green), medium (yellow), low (orange), very low (red) defined based on equal interval classification of suitability scores ranging from 0 to 100 of the evaluated potential locations in the study area.

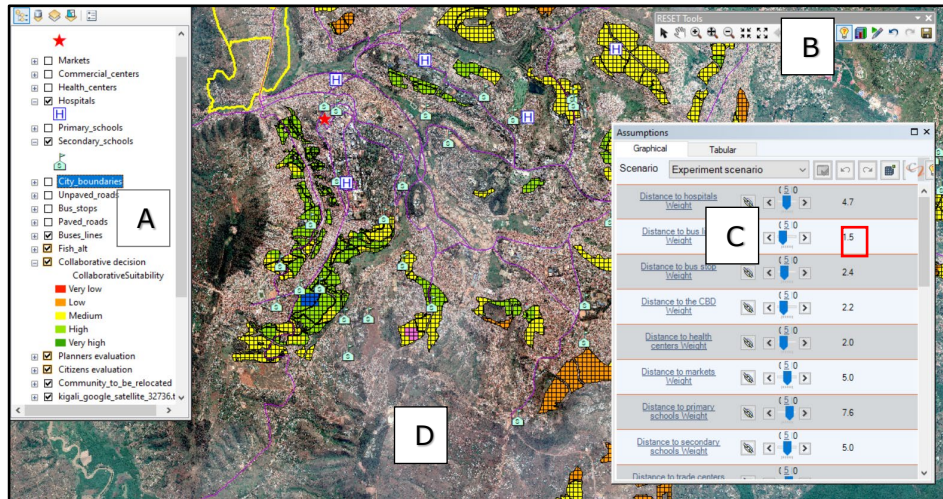


Figure 5.3: REST user interface: A-layer management, B-navigation tools, C-interactive tool for suitability evaluation, D-dynamic visualisation of maps

In layer management (A), users or stakeholders have access to several spatial data layers, such as the city's administrative boundary, schools, health centres, commercial centers, etc., that they can display to understand the local context, i.e., the distribution of existing infrastructure. With an interactive sketching function (E), users can touch on the site choice palette to choose among three priorities with different colours and paint the preferred sites. Once stakeholders specify a preferred location through painting, the size of the selected area (in Ha) and the estimated number of possible houses are automatically calculated and visualised in charts Figure 5.4 (F), which can be displayed on a second screen attached to the maptable. All RESET functions can be accessed and manipulated via the touch of the maptable.

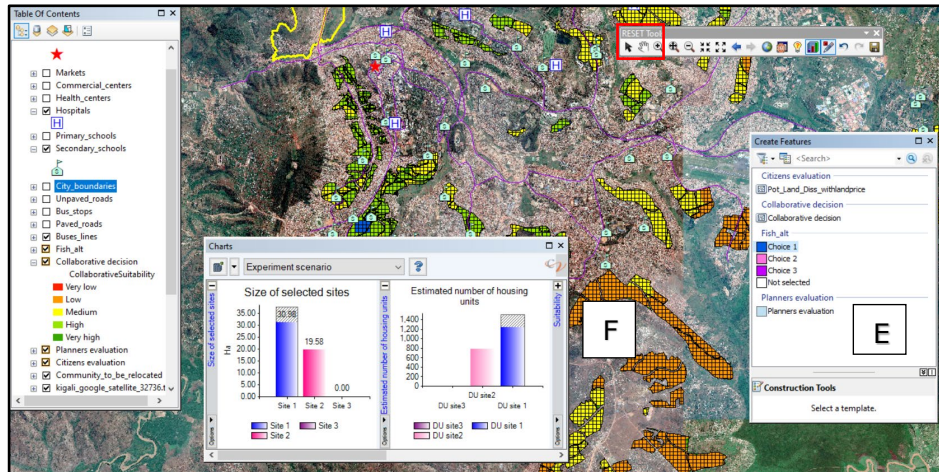


Figure 5.4: Sketching tool and the linked charts

5.4 Testing and usability evaluation

5.4.1 Methods

The RESET testing and usability evaluation was conducted in two experimental sessions (Figure 5.5), which involved eight master's students and one PhD candidate recruited from the Faculty of Geo-information Science and Earth Observation of the University of Twente. Seven out of the nine participants were Rwandese. Rwandese students were targeted as ideal representatives of the targeted user groups because they had local knowledge and thus could play the role of the local stakeholders. The experiments took place on 19 August 2021 and each session took 2 to 2.5 hours. In each session, two groups of two to three participants in each were formed. In each session, one group played the role of the planners and the other represented the perspective of the affected people. The three research team members played the role of facilitators. The sessions began with an introduction of the sessions' objectives, followed by a description of the tasks. The participants were informed that they would perform a typical resettlement site identification activity using a planning support tool. Also, a brief explanation of the PSS was provided and a demonstration of how to use it and hands-on experience for the participants.

The usability testing was done using two tasks. During the first task, a group of participants playing the role of planners and another playing the role of affected people was working on two separate MapTable devices simultaneously. They were invited first to use the dynamic suitability model to explore the effect on the suitability level of the locations as a result of excluding or including some criteria and changes of the weights of the considered criteria. The participants were encouraged to articulate their perspectives within their group and use the tool to explore their implications.

The second task involved a collaborative suitability analysis and the use of the sketching tool to choose three sites. After articulating their perspectives, the participants were called to integrate their views and come up with one shared final suitability map. In a similar format as in task one, the participants from both groups together did a suitability evaluation to decide on the one agreed final suitability map. The task further requires the participants to prioritise and select three locations based on their final suitability map. In addition, the participants could use available indicator charts before their final decision.

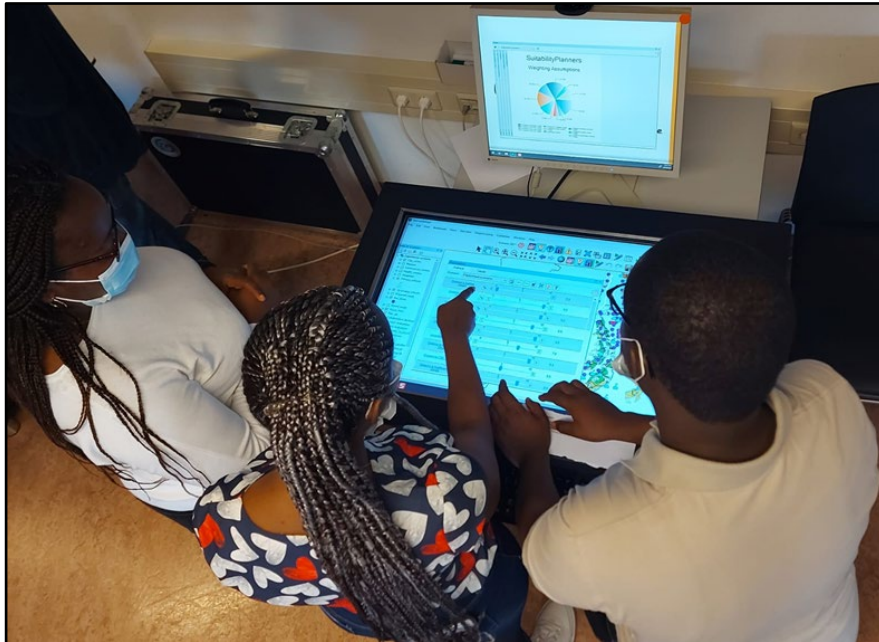


Figure 5.5: RESET testing activity

To evaluate the tool's usability, data were collected from two sources: questionnaires (appendix 10) administered directly after the session, recording and screen capture of the interactive MapTable. The questionnaire was the primary data collection instrument and included questions about the PSS usability and the participants' background characteristics. The background questions concerned the educational background and experience with using a PSS. The usability was measured using 14 statements referring to eight variables based on (Champlin & te Brömmelstroet, 2019; Pelzer, 2017; Pelzer et al., 2016; te Brömmelstroet, 2017). The formulated questions mainly consisted of Likert items from one to five scales (1= strongly agree and 5 = strongly disagree). For triangulation purposes, screen capturing and session recording were used to gain more insights into the experiment and the usability of the tool.

5.4.2 Results

Figure 5.6 below depicts the perceptions of usability as measured by the post-workshop evaluation questionnaire. It shows that the overwhelming majority of the participants were satisfied with RESET and found it to be a reliable tool and its tools to be transparent and user-friendly.

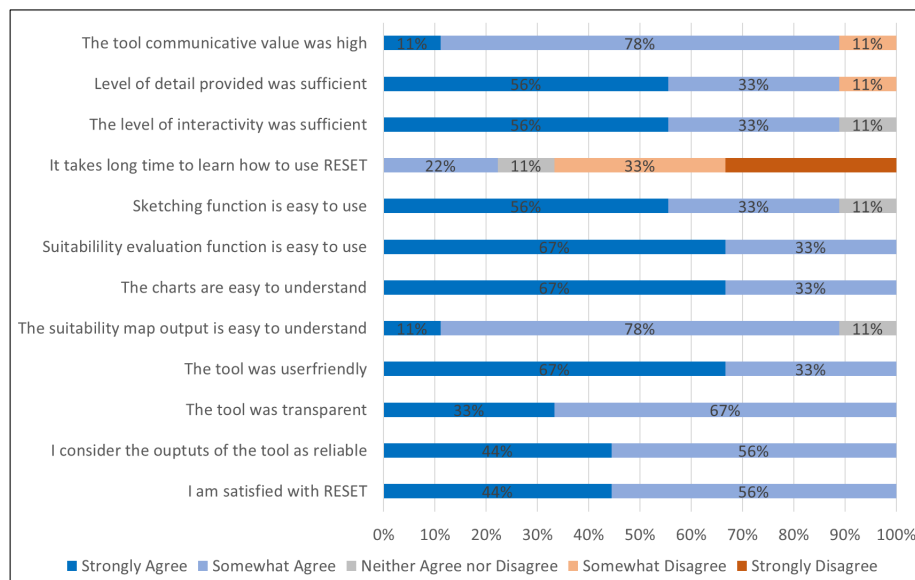


Figure 5.6: Responses of participants regarding the usability of RESET

Some participants, however, seem to question RESET level of interactivity, level of details and its communicative value. This finding is not surprising since, during the workshop session, it became apparent that the waiting time for the outputs of the suitability analysis was experienced as relatively long. Nevertheless, the tool's interactivity scores from the survey are still high because it appeared that the long response time was due to a large satellite image used as a base map, not the tool itself.

5.5 Conclusions

Resettlement site selection is a complex process. It requires considering multiple criteria and addressing various needs and interests efficiently and systematically. This can only be achieved if planners and decision-makers are equipped with planning support tools. Moreover, there is tremendous pressure on the decision-makers and implementers to ensure the participation of the affected people in the decision-making. In this context, interactive planning support tools provide a substantial enhancement to support participatory decision-making processes. This chapter presents an interactive planning support tool, named RESET, designed to support participatory resettlement site identification. The PSS integrates two analytical components, an auditable spatial multi-criteria evaluation model and a sketching tool, to support interactive and iterative sites suitability evaluation and prioritisation of the most acceptable sites. Both tools provide ways to elicit and help stakeholders articulate and communicate their preferences and point of view regarding their preferred and relevant resettlement site attributes. In this way, RESET hides the analytical complexities behind easy-to-use user interfaces to provide interactive tools to collect the stakeholders' opinions and increase transparency in the process.

RESET was tested in an experiment with students. Overall, the participants reacted positively toward it. For most of the evaluated usability measures, RESET generally received positive scores. Even participants who had never used a PSS reported quickly learning how to use it, understood its central tools, and found its tools transparent and user-friendly. Participants found RESET a promising tool for stakeholders' collaboration and communication during resettlement

site selection, particularly helpful in learning about the complexity of resettlement site selection and the various criteria that need to be considered.

Nevertheless, the tool needs continued refinement. Some participants questioned RESET's level of details, indicating a lack of important criteria, like proximity to employment places and the criteria related to the different permissible housing categories in the city master plan. Although this was due to lack of data, developing a future version of RESET would seek to address these concerns. Moreover, the current version does not allow different stakeholders groups to visualise their convergences and divergences automatically. As another required development, the upgraded version of RESET will include such negotiation support functionality.

RESET is an advancement in induced displacement and resettlement research. However, research is required into its acceptance by those involved in selecting resettlement sites as well as the affected people. For instance, scholars have shown that besides usability-related concerns, political issues, particularly accountability-related concerns, may play a role in adopting similar tools that mainly support more open and transparent decision-making processes (Carver, Evans, Kingston, & Turton, 2001; Higgs, 2006). While users' involvement in the design of PSS is recommended to increase usability and acceptability (Russo et al., 2018; Vonk, 2005), due to Covid19 and time constraints, it was impossible to gather the user requirements beyond involving the local stakeholders in selecting the decision criteria included in the tool. Therefore, future works could involve the intended users in evaluating and improving the current user interface.

The case of Kigali city was chosen for the implementation of RESET. This is an interesting and timely case of study, given the apparent contentious character of informal settlement resettlement processes; increase of studies that urge collaborative planning support tools for stakeholders' collaboration and the recently announced commitment of the local authorities to improve public participation, particularly by involving the affected people in their resettlement sites identification. Assuming that such commitment is not just rhetoric, one clear avenue for further research is testing the usability and evaluating the added value of RESET in actual resettlement process. Insights from such real

applications will help improve the proposed conceptual framework and architecture and realise the actual benefits and potentialities of RESET.

Chapter 6 - Synthesis

6.1 Introduction

Urban induced displacement due to urbanization processes and the associated city-image making activities in developing countries has recently become a hot research topic. The growing attention on urban displacement derives from the rapidly increasing number of urban dwellers displaced from their communities by urban (re)development projects and urban disaster risk mitigation measures. While induced displacement and the resulting resettlement processes are widely studied, most previous studies have focused on rural contexts. Induced displacement and resettlement in urban areas, particularly informal settlement dwellers, are still understudied. Using the example of Kigali City in Rwanda this research has provided a better understanding of the displacement and resettlement processes of informal settlement dwellers. In particular, attention was given to the livelihood impacts of resettlement processes on the affected households, stakeholders' participation in the decision-making, the responses of the affected households and the drivers of contestation. Ultimately, this study investigated how planning support systems could help strengthen stakeholder participation in resettlement processes. This main objective has been divided into four sub-objectives, namely:

- To analyse the impacts of both the urban (re)development and disaster risks induced displacement and resettlement processes on the livelihood of affected informal settlement dwellers
- To understand the governance practices in the resettlement of informal settlement dwellers and how it influences participation and local affected people's responses
- To analyse and integrate key stakeholders' preferences in evaluating the suitability of potential resettlement locations
- To develop, implement and test a planning support tool that could support collaborative resettlement site identification

Section 6.2 summarizes the main findings and conclusions for each sub-objectives to inform an overarching synthesis. Section 6.3 offers reflections on the contributions of the research. The limitations and

future research directions are provided in sections 6.4 and 6.5, respectively.

6.2 Summary of main findings

This section presents the research summary, including the main findings and conclusions, per research objective.

6.2.1 To analyse the impacts of urban induced displacement and resettlement processes on the livelihood of affected informal settlement dwellers

Like in many other cities in the Global South, urbanisation and city-image making in Kigali City are the main causes of displacement and resettlement of urban dwellers, especially those living in informal settlements. These city's image-making processes include redevelopment and upgrading existing urban areas and clearing all settlements that were developed on land considered to be at high risk of disaster. Chapter 2 explored the impacts of these urban-induced displacements and resettlement processes on the livelihoods of the affected urban dwellers. It focused on urban redevelopment and disaster mitigation projects and used inputs collected through interviews and focus group discussions undertaken with communities to be displaced in three study areas and the already resettled households in three resettlement sites as well as interviews with key informants.

In essence, the results suggest that urban induced displacement negatively impacts the livelihood of affected households before and after relocation to a new living environment, leading to their impoverishment. Before actual resettlement, informal settlement dwellers to be displaced face several interlinked impoverishments, including perceived land tenure insecurity, living in deteriorated housing structures, financial instability, food insecurity and health risks. Living in uncertainty, which was attributed to lack of participation and inadequate access to accurate and detailed information, was identified as the most significant cause of those pre-relocation impoverishment risks. The findings also revealed several adverse post-relocation impacts on the livelihood of the already resettled households in the study areas. Those impacts include loss of employment and income, the increased distance to basic infrastructure and services,

loss of living space and living in overcrowding, lack of privacy, loss of social network and the feeling of being marginalised, food insecurity and stress problems. In most of the cases, the location of resettlement sites played a role in the majority of the post-relocation impoverishment risks, where distant relocation led to a loss of access to previous livelihood resources. The results highlight that both the pre-and post-displacement impoverishment risks should be part of population displacement theories and they require attention in practice if the livelihoods of affected households, especially informal households, are to be effectively protected and improved through resettlement processes. Furthermore, attention should be paid to early consultation and enhancing the participation of the affected people, including their involvement in the decision-making regarding fair compensation and the selection of a suitable resettlement site. These findings laid the foundation for the in-depth investigation of how the resettlement processes are implemented including the participation of the affected people and their responses.

6.2.2 To examine the governance practices in the resettlement of informal settlement dwellers and how it influences participation and local affected people's responses

Chapter 3 discussed the implementation of and practices in urban redevelopment-induced land acquisition and resettlement of informal settlement dwellers within the study area. Specifically, it aimed to understand how the affected people responded to resettlement and to identify the main factors influencing their reactions and the contestation between the affected dwellers and the local authorities. Based on insights from two study areas, Kangondo and Mpazi, the findings suggest four aspects that lead to contestations: 1) deviations from the expropriation law and other existing relevant guidelines, 2) lack of participation, 3) lack of transparency in property valuation and 4) compensation packages perceived as being unfair.

The national expropriation law and the informal settlement upgrading strategy are the currently available statutes that regulate redevelopment-induced land acquisitions and the associated resettlement processes of the informal settlement dwellers. First, the expropriation law grants landowners affected by land acquisition the right to early participation, including negotiating compensation

packages with the expropriator. However, this study shows that such early involvement and negotiations of the compensation packages with the affected people were deliberately ignored, as evident in Kangondo. The city authorities, investors, and the affected people are the three key actors in the land acquisition for urban redevelopment and the resulting resettlement process. However, the level of participation of affected people is low, as it is limited to informing them why and when the land acquisition will occur, while the proposed compensation packages are usually decided behind closed doors.

The findings suggest a decide-announce-defend governance style is found in these informal settlement resettlement processes. The affected people are excluded from negotiations and they are not involved in the design and decision-making regarding new houses or identifying their resettlement sites. Moreover, the affected people perceive the property valuation process as non-transparent and the proposed compensation packages unsatisfactory compared to their affected properties. The consequences of these practices include increased distrust, perceptions of unfairness and livelihood impoverishment risks that fuel contestations and resistance among affected informal settlement dwellers.

In essence, the study shows a need to adhere to clear and transparent guidelines, including those related to the participation of affected people in critical decision-making such as site selection and houses design for the resettlement processes to become less adversarial. The results suggest that fewer social conflicts are to be expected in the context of on-site relocation compared to off-site relocation. This is because the location of a resettlement site is fundamental for livelihoods and general wellbeing, especially for informal settlement dwellers, many of whom have strongly location-based income. Therefore, in addition to involving the affected people in designing their new houses, particular attention needs to be paid to their participation and to including the needs and interests of the affected people in resettlement site selection decision-making.

6.2.3 To analyse key stakeholders' preferences and their spatial implications on the suitability of potential resettlement locations

Evidence suggests that the interests and preferences of all involved stakeholders need to be considered in resettlement planning to minimize their associated impoverishment risks and social conflicts. And this has raised the question about the preferences of the key stakeholders in resettlement processes in our study area. In this vein, Chapter 4 analysed, through a survey, the preferences of the affected informal settlement dwellers and the planning officials for resettlement sites attributes and how these affect the suitability of potential resettlement locations in the study area. The findings reveal both similar as well as different preference patterns, including diverse or heterogeneous preferences for criteria such as proximity to the CBD, origin settlement, bus stop, hospitals and roads in both stakeholders' perspectives. Although ranked differently, the comparison of the opinions of both groups shows that both strongly agree on the high importance of the criteria proximity to education and health facilities. Regarding their differences, the results suggest that the affected people prefer land or resettlement sites with a high monetary value. According to the affected people, the high-value sites define fair compensation and ensure tenure security. By contrast, the planning officials prioritise areas with low land prices for affordability reasons. Moreover, the results suggested that affected people also expressed preferences for single houses, while the planning officials prioritize residential zones that allow high-rise residential buildings.

The examination of the potential spatial implications of the preferences revealed that the different priorities between the affected people and the planning officials resulted in significantly different spatial suitability levels of the residential areas in the city. These results highlight that achieving a conflict-free resettlement process will require a collaborative approach to resettlement site selection that seeks to incorporate both stakeholder groups' opinions. Such participatory approaches would support improved communication and collaboration between both stakeholder groups and allow them to appreciate, if not understand, each other's perspectives, discuss their convergence and negotiate their differences.

6.2.4 To develop and test a planning support tool for collaborative resettlement site identification

Chapter 5 departed from the idea that a planning support system could facilitate participation and collaborative resettlement site selection. Such a collaborative approach for resettlement site identification is argued to be a complex spatial problem requiring considering various criteria and sometimes conflicting stakeholders' perspectives. Therefore, building on the preferences and criteria established in Chapter 4, an interactive GIS-based PSS, RESET, is proposed to support collaborative resettlement site identification. In the CommunityViz planning support system, we adapted a multicriteria suitability analysis model into an editable model and integrated this model with a sketching tool such that both components would hide the analytical complexities behind easy-to-use interfaces.

When used on a Maptable, RESET supports stakeholders' discussions over the most relevant criteria and their relative importance as they think together, interactively explore and evaluate alternatives related to their preferences and eventually negotiate a common ground. Notwithstanding that the results of initial usability testing suggest that RESET is a user-friendly tool for stakeholders' collaboration and communication during resettlement site selection, further testing in a field setting with real stakeholders in an actual resettlement project is required.

6.3 Implications of the findings

6.3.1 Contributions to scientific research

This research is among the first studies to study the impacts and social risks in the resettlement of urban dwellers and propose how these could be minimised through enhanced participatory planning and decision-making. In this respect, four important contributions in this research advance the existing knowledge. First, this research advances the knowledge base on the livelihood impacts and impoverishment risks of affected households in urban induced displacement and resettlement processes by providing an integrated framework that categorises the livelihood impacts and potential impoverishment risks into two temporal dimensions: the pre-relocation phase and the post-

relocation phase. Previous academic perspectives on the livelihood impacts have generally focused on the post-relocation impoverishment risks (Cernea, 1997b; Patel et al., 2015; Terminski, 2013; Vanclay, 2017). While existing studies provide valuable insights into the livelihood impacts of displacement and resettlement, the focus on post-resettlement impacts gives a limited perspective. By extending the literature on the adverse impacts, new evidence on pre-relocation impacts of induced displacement and resettlement on impoverishment risks of affected households is generated. In particular, the pre-relocation impacts call for a closer look at the potential adverse impacts of the broader visions of master planning and city image-making on poor urban dwellers.

Second, this research adds to the discourse of factors of discontent and contestation in urban resettlement processes. Previous studies offered insights mainly from a macro-level perspective of claiming the right to remain in the city to shed light on the need to minimize the exclusion of the urban poor within the contemporary city's image-making processes and master planning (Esmail & Corburn, 2019). This study decomposes the experiences and underlying factors of contestation at the resettlement project level through an in-depth analysis. Thus, it highlights micro-level factors, including deviations from existing laws, lack of transparency and participation, and unfair compensation as drivers of discontent and resistance. Bringing to light the deviations from existing laws is important because, in recent years, policies, guidelines and legal frameworks to recognize the rights of people affected by resettlement were promoted and adopted in many countries to ensure positive outcomes, including fair compensation in resettlement practices (Tagliarino, 2017). However, the findings in chapter 3 confirm that even when appropriate laws and guidelines exist, these might not be recognized or be satisfactorily applied (Galgani, Toorop, & Verstappen, 2016). Therefore, there is a need to gain a deeper understanding of how the displacement and resettlement processes evolve across different contexts and how these affect or are affected by the implementation of the available policies and legal frameworks.

The third contribution constitutes the investigated preferences of the informal settlement dwellers and the planning officials regarding resettlement site attributes in our study area. Despite the apparent resistance and dissatisfaction of resettled households in Kigali, the insights gained into the convergent opinions between the two stakeholders show that an assumption that affected people and decision-makers have always only different views on resettlement can be problematic. With such an assumption, we may lose sight of the potential convergence that could provide a foundation for collaboration, negotiations, and trust-building. Though it should be emphasised that the analysis of context-specific preferences as investigated in this research is essential to formulate appropriate strategies. This research, therefore, advocates for approaches that will enable the stakeholders involved in resettlement planning to share, contrast and integrate their opinions and interests; to exchange their knowledge in seeking common ground.

Last, this research contributes specifically to the growing body of literature on planning support tools, the proposed interactive PSS tool for participatory resettlement site identification (RESET). Insufficient consideration of contextual variables such as the planning issue at hand, user needs, and the specific policy context; lack of involvement of the end-users in the development of the tools; lack of user-friendliness and other usability attributes such as transparency, ease of use and interactivity are some of the reasons that potentially explain the limited use of PSS in many spatial planning processes (Jiang et al., 2020; te Brömmelstroet, 2012; te Brömmelstroet, 2017; te Brömmelstroet et al., 2014; Vonk, 2005). Through the survey of the stakeholders' preferences, we have indirectly involved the intended key users in the conceptualisation of a tool tailored to resettlement site selection of informal settlement dwellers, taking into account their interests and preferences. Regarding the common usability shortcomings that challenge the use of PSS in practices, the results of usability testing suggest RESET to be a simple, transparent and user-friendly PSS. It is worthwhile to acknowledge that the participants in the testing experiment were highly educated and skilled in the use of Geo-information techniques. Nevertheless, they perceived RESET as a tool that could potentially support communication and collaboration, enabling the users to articulate and exchange opinions and knowledge. Such stakeholder knowledge exchange is known to facilitate social

learning, where the stakeholders learn about each other's aspirations and interests (Akbar et al., 2020). As found in this thesis, the preferences of the planners and the affected people for some criteria diverge. In this context, RESET supports social learning, which is one factor that can contribute to finding common ground and consensus-building. To our knowledge, RESET is the first interactive PSS in a resettlement planning context. Its suitability component, together with a simple user interface, can help the stakeholders to easily identify the criteria that they wish to consider and explore their effect on the alternative decision outcomes. It is worthwhile to mention that RESET was tested with highly educated and Information technology skilled people, some of who had experience with using geo-based PSS. Nevertheless, RESET was perceived as an easy to learn interactive tool, even for those without prior experience with PSS. Therefore, contrary to printed maps that do not allow users to combine several criteria simultaneously, RESET can contribute to overcoming discrepancies in education level, knowledge and abilities between the planning officials and the affected people.

6.3.2 Contributions to resettlement policy and practice

This research is beneficial to planners and policymakers in Kigali, and elsewhere, who are called to take into account the potential micro-level adverse impacts of resettlement processes when formulating and implementing macro-level policies interventions for economic development, such as promoting city-making practices or for the protection of people from disaster risks. The research findings confirmed that the impoverishment risks associated with resettlement are multifactorial and addressing them requires a holistic approach. Currently, in Kigali, urban resettlement is carried out as a strategy to mitigate the proliferation of informal settlements in the city. Nevertheless, these resettlements should not be conceived merely as a housing provision program for low income people. Other socio-economic aspects such as access to jobs and income generation activities and social cohesion are also important and require attention in resettlement planning. Several other scholars have discussed the impacts, and the factors of success and failure of informal settlement dwellers resettlement or low income houses provision in the context of both disaster and urban development (Patel et al., 2015; Viratkapan & Perera, 2006; Perera, 2012; Reshma, 2019). Our findings confirm

these earlier works regarding the negative influence of the lack of participation of the affected people in the decision making. Therefore, critical to long-term sustainability of the resettlement projects in Kigali is the participation of the affected people in all the project planning phases including participation in these critical decisions. Experiences from other contexts suggest that the participation of the affected communities such as in selecting a suitable site (Viratkapan & Perera, 2006) and deciding the houses types (Reshma, 2019) are among the factors that attributed to the success of the relocation projects.

Overall, chapter 2 and chapter 3 inform the need to reorient resettlement planning and implementation policies towards more meaningful participatory processes that engage the affected informal settlement dwellers in Kigali city. In this regard, some gaps need to be filled. First, the expropriation law is the statutory tool currently guiding resettlement. Besides the article in that expropriation law that requires consultation and negotiations with the affected people of the affected urban households, establishing clear and practical guidelines and mechanisms for meaningful inclusive participation of the affected households in resettlement planning should be among the priorities in Kigali City. Moreover, because this research revealed that deviations from the expropriation law contribute to contestation and distrust, adherence to such established guidelines in resettlement should be a strategy to mitigate social conflicts and become a good practice that is standard practice for resettlement projects in Kigali.

The findings regarding the factors that influence contestation are also timely and relevant for the local authorities and decision-makers in Kigali. The outcomes in terms of dissatisfaction, contestation and resistance of affected people, including rejection of the resettlement proposals and compensation packages, is a phenomenon that has long characterized both development and disaster-driven displacements of informal settlement dwellers in Kigali. While researchers have mentioned and criticized such outcomes (Esmail & Corburn, 2019; Uwayezu & de Vries, 2019) there had not yet been a detailed examination of the underlying factors that propagate such contestation. Therefore, our research findings and recommendations outlined in chapter 4 could inform the best practices in future resettlement projects.

Chapter 4 outlines the preferences of resettlement attributes of two key stakeholders, namely the planning officials and affected people and applies multicriteria analysis to examine spatial implications of the stated preferences. The findings regarding the preferences of resettlement sites too, could be of interest to the decision-makers in Kigali. Results show that planning officials highly emphasize some criteria, such as proximity to bus stops, while the affected people consider the same criteria less critical. Such discrepancy suggests possible inaccurate assumptions among the officials of the priorities and needs of the affected people. These findings could be of interest to the decision-makers in Kigali. Proximity to public transport facilities such as bus stops and Bus Rapid Transit (BRT) corridors is, in general, claimed to be an essential criterion to ensure accessibility to services and workplaces within cities. However, relocating the urban poor close to BRT stops does not always contribute to equitable accessibility because they might not be able to afford the bus tickets (Brussel, Zuidgeest, Bosch, & Munshi, 2019). In their study in Ahmedabad, India, Brussel et al. (2019) argued that to achieve equity in accessibility for the urban poor, it is rather essential to consider other transport modes such as cycling. Also in Kigali city, where job opportunities are concentrated in the inner-city areas, proximity to bus stops might become less critical for the urban poor, who even apparently prefer to live close and walk to their employment locations (Uwizeye et al., 2020).

Because residential location matters for many informal settlement dwellers regarding access to jobs, income and other basic livelihood resources, the collaboration of affected communities with the planners and other decision-makers in resettlement site identification is urgently needed. Stakeholders' collaboration in spatial planning problems and decision-making requires suitable methods and support tools (Flacke & de Boer, 2017; Pert et al., 2013; Sharifi et al., 2009; Shrestha et al., 2018; van Haaren & Fthenakis, 2011). Therefore, RESET, the planning support tool proposed in this research, may be helpful to support collaborative resettlement site identification by facilitating discussions, knowledge exchange, and negotiations among the officials and the affected households. More particularly, the tool can be used during the first investigation stage of potentially suitable sites and, therefore, useful in the consultation stage with the affected people.

Although the involvement of the intended users' stated preferences in developing the tool lays the foundation for its adoption, the bottom line for adopting RESET and for its successful role in resettlement planning practice is a shift to communicative planning. Therefore, the current practice of making decisions behind closed doors should be changed. Moreover, the recently announced commitment of local authorities in Kigali to improve stakeholder participation practice, with a particular focus on involving the affected people in the selection of their resettlement sites, is timely⁶. However, local decision-makers must be willing to be transparent and give more voice and power to the affected people in decision-making. Moreover, RESET requires a substantial set of spatial data representing the important criteria for site suitability assessment. Therefore, a lack of spatial data might be a barrier to its use and potential usefulness.

6.4 Limitations of this work

This research is the first to present a multi-stakeholder perspective on the social risks in urban displacement and resettlement processes and propose an innovative tool to support improved participatory resettlement planning. However, it is essential to note some limitations.

First, this research used mainly qualitative methods to understand the impoverishment risks and the factors that influence contestation and other social risks. The study aimed to set the scene by understanding the practices surrounding induced displacement and resettlement of informal settlement dwellers in the ongoing cities making in developing African countries. However, combining this qualitative analysis with a quantitative approach would have been valuable and could help to statistically determine the relative significance of the identified impoverishment risks and the main causes of contestation.

Second, this study conceptualised RESET as a tool that can strengthen participation by enabling improved communication, collaboration, and social learning and building consensus. Though a PSS workshop with real stakeholders was foreseen to evaluate its usability and potential

⁶ (see <https://www.newtimes.co.rw/news/govt-issues-new-guidelines-reduce-informal-settlements>).

usefulness in a resettlement project, this became impossible due to the COVID-19 pandemic. The usability of RESET was therefore evaluated using role-playing stakeholders, most of whom had a background in using technology, especially GIS-based technology. As this will almost certainly have influenced the perceived usability of RESET presented in our research, further testing needs to be done with real users. Similarly, the potential benefits of RESET still need to be evaluated in a real resettlement project.

Last but not least, while there are other important stakeholders such as the private property investors in the ongoing urban redevelopment induced resettlements of informal settlement dwellers in Kigali, the tool (RESET) proposed was conceptualised by considering the preferences of only two stakeholder groups: the planning officials in Kigali city and the affected informal settlement dwellers in only one community.

6.5 Recommendations for future research

This research focuses on Kigali city, Rwanda. Therefore, the findings might not be generalisable to fully represent the situation in other fast-developing cities in Africa or other world regions. Further comparative studies need to be carried out to investigate cases from different countries for a broader understanding of how resettlement unfolds in different settings and practices, the potential social risks and stakeholders' preferences in different contexts.

Future work is also needed to test the usability with real stakeholders and evaluate the usefulness of RESET in actual resettlement processes. Moreover, future research might also explore whether and how RESET would fit in a resettlement project, the factors that would prevent its use, including fit for purpose criteria of reliability, affordability, attainability, participation and how it can hold up when adopted in resettlement practices. This exploration of the possibility for the use of the tool would result in how it can be further refined and more adapted to the needs of the key stakeholders.

This study proposed RESET as an innovative tool to support stakeholder participation in one critical decision-making process, namely identifying a resettlement site. However, from our findings, it is evident that the design of houses is another critical decision that requires collaborative planning involving those who are to be resettled

in the related decision-making process. A planning support tool to help the stakeholders negotiate and express their housing preferences is also needed. Future research could conceptualise such a planning support tool for house design and explore its added value in a real resettlement context. Moreover, an attempt for an integrated planning support system that combines a tool for resettlement site suitability assessment with a tool for defining housing preferences would be worthwhile.

Last, it is expected that the conceptualisation of the information and the planning support system undertaken in this research would generate interest in further research in Kigali on the potential of participatory resettlement for equitable and sustainable development.

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Appendix

Appendix 1

Interview with households to be displaced

Introduction

My name is Alice Nikuze, I am conducting a research on Urban Residential Displacements and Resettlements as part of my PhD research at University of Twente. Thank you for accepting to participate in this interview. Please be insured that I acknowledge and respect your privacy. All the information provided in this questionnaire shall be used only for this research purpose and treated with utmost confidentiality. Thus, be open in your responses. You are not obliged to answer any question that you don't want to answer.

The objective of this interview is to understand the livelihood of informal settlement dwellers affected by resettlement i.e the strategies that they employ to make a living and their perceptions on possible impacts of the process of displacement and resettlement on these assets.

Name of the interviewed person:

Current address:

Households characteristics

Household members	Sex	Age Years	Marital Status	Highest education level	Vocation skills
HoH	Male		Married	Illiterate,	Moto drivers
Spouse	Female		Single	Semi-	Car drivers
Children			Divorced	literate,	Masonry
Other			Widowed	Completed	/Carpentry
				Primary	Mechanic/Electrical/
				School,	Electronic
				Attending	Couture
				Primary	Others:
				School,	
				Completed	
				secondary	
				School,	
				Attending	
				secondary	
				school,	
				Graduate	
				level	
				(University),	
				Attending	
				university,	
				Others.	

Interviewed
person
(.....)

Main source of income

1. How many income earners are in this household?
2. What job do the main income earners in the house do?
3. Is the job temporary or permanent?
4. How far is the work place from home?
5. What mode of transport do they use to go to their work place?
6. How much do they pay for transport to work place every day/ month?

Income earner	Jobs	Place/ Location	Type of job:	Distance to the work place:	Transport mode:	Cost of transport
HoH	Laborers, Artisans, Merchants,		Temporary	At home	Foot	
Spouse	Small business		Permanent	Less than 1 Km,	Bus	
Child	owners, others			1-3 Km,	Car	
Other				3-5km,	Motorcycle	
				More than 5Km	Other	

Other source of income and savings

1. Apart from jobs, do you have any other source of income? If yes which?
 1. Hair salon
 2. Couture
 3. Welding
 4. Add other:
2. Do you have any home-based income activity? Which one?
 1. Cooking for restaurant
 2. Livestock
 3. Add other:
3. Do you own any house for residential or business purpose for renting?
 1. Yes
 2. No
 - If yes, how many?
 1. One
 2. Two
 3. Three
 4. More
4. How much money on average you make from it per month?
5. Do you have any personal savings? If yes, how much per month
 1. Yes
 2. No

6. Does your household participate in any saving group in the settlement?
1. Yes 2. No
7. What is that saving group?
1. Bank 2. Micro credit 3. Community saving groups
8. What is your household average monthly income?
1. Below 10,000 2. 10,000-30,000 3. 30,000-50,000 4. 50,000-100,000
5. 100,000-200,000
6. 200,000-500,000 7. More than 500,000 Rwandan francs

Land and house ownership

1. What is your house status?
1. Owner 2. Tenant 3. Other
2. For how many years have you been living in this house?
3. What is the type of the dwelling unit?
1. Detached 2. Multifamily house 3. Several separate buildings
4. Several connected buildings
4. How many sleeping rooms in your home?
1. One room 2. Two rooms 3. Three rooms 4. More than three
5. Extent of the land on which the house is located/plot size (m²)
6. What motivated you to come to live in this area?

Access (Accessibility, availability, affordability, Accommodation, Acceptability) to physical infrastructure

Water, sewerage, electricity, road, transport and other amenities

1. What is the source of power/light?
1. Electricity 2. Generator 3. Solar energy
4. Candle 5. Others:
2. What is the main source of water for your household uses?
1. Home tap 2. Public tap 3. Spring/Well 4. Any other
3. If not home tap, how far is located the water source from your house?
1. Less than 1 Km 2. 1-3 Km, 3. 3-5km 4. More than 5Km
4. Do you pay water per day?
1. Yes 2. No
5. If yes, how much a jerrican on average
6. How do you dispose of your liquid waste?
1. Pit latrine 2. Open air 3. Septic tank 4. Others:
7. How do you dispose of your solid waste?

1. Municipal collection 2. Burn 3. Dump in the drainage 4. Others (specify)
8. How far is it from your house to the nearest bus stop
 1. Less than 1 km, 2. 1-3 km, 3. 3-5km, 4. More than 5km
9. How far is it from your place to the city centre?
 1. Less than 1 km, 2. 1-3 km, 3. 3-5km, 4. More than 5km
10. Mode of transport to city center
 1. Foot, 2. Bus, 3. Car, 4. Motorcycle 5. Other

Market places

1. What are the markets do you use for buying needed items and n items mostly looking for?
If many, state them by order of the first and then
2. What do you think of the distance to these markets?
1. Very near 2. Near 3. Far 4. Very far
3. If 3 or 4, why do you prefer to visit them
4. What is the travel time to the available markets?
1. 5-10min 2. 10-15min 3. 15-20min 4. 20-30min
5. How far is the most visited (preferred) market from your home place?
1. Less than 1 Km, 2. 1-3 Km, 3. 3-5km, 4. More than 5Km
6. What mode of transport do you use to go to the market ?
1. Foot, 2. Bus (Public transport), 3. Private Car, 4. Motorcycle (Public transport) 5. Other
7. Do you incur any transport costs to go to the market?
1. Yes 2. No
If yes how much per travel?
If Bus (Public transport), how is it easily available?
If Moto (Public transport), how is it easily? available
8. What do you think of the ability (trust) of the available market to provide your needed items?
1. Very good 2. Good 3. Bad 4. Very bad Explain
9. Do the market opening days and hours fit you household need?
1. Yes 2. No
if no, explain
10. Which factors are important for you to get access to markets? (available items, quality of product travel time, distance, cost of products...)
Please rank you preference from the first to the last
 -
 -

Schools

1. What are the schools do your household members attend? Locations/names
2. What do you think of the distance to available schools?
1. Very near 2. Near 3. Far 4. Very far
If 3 & 4, why do you prefer it?
3. What is the travel time to the available primary schools?
5-10min 10-15min 15-20min 20-30min
4. How far are the schools from your home place?
1. Less than 1 Km, 2. 1-3 Km, 3. 3-5km, 4. More than 5Km
5. What mode of transport do you use to go to the school ?
1. Foot, 2. Bus (Public transport), 3. Private Car, 4. Motorcycle (Public transport) 5. Other
6. Do you incur any transport costs to go to school?
1. Yes 2. No
If **yes** how much per travel to?
If **Bus (Public transport)**, how is it easily available? Short distance to bus stop, supply hours, frequency, etc.
If **Moto (Public transport)**, how is it easily? available
7. What do you think of the ability (trust) of the available school to provide a good quality of education?
1. Very good 2. Good 3. Bad 4. Very bad Explain
8. Which factors are important for you to get access to school?
(quality, private, public, travel time, distance, cost,...)
Please rank you preference from the first to the last

Health facilities

1. Which health facilities do your household visit for primary health care?
1. Hospitals 2. Heath centers 3. Clinics 4. Traditional 5. Others:
If many, state them by order of the first and then
2. What is the type of the facilities?
1. Public 2. Private
3. What do you think of the distance to available health facilities?
1. Very near 2. Near 3. Far 4. Very far
If 3&4 , why?
4. What is the travel time to the available facilities
5-10min 10-15min 15-20min 20-30min
5. How far is the health center from your home place?
1. Less than 1 Km, 2. 1-3 Km, 3. 3-5km, 4. More than 5Km
6. How far is the hospital from your home place?
1. Less than 1 Km, 2. 1-3 Km, 3. 3-5km, 4. More than 5Km

7. What mode of transport do you use to go to the health center facility ?
 1. Foot, 2. Bus (Public transport), 3. Private Car, 4. Motorcycle (Public transport) 5. Other
8. Do you incur any transport costs to go to the health facility?
 1. Yes 2. No
 If yes how much per travel?
 If Bus (Public transport), how is it easily available?
 If Moto (Public transport), how is it easily? available
9. What mode of transport do you use to go to the hospital facility ?
 1. Foot, 2. Bus (Public transport), 3. Private Car, 4. Motorcycle (Public transport) 5. Other
10. Do you incur any transport costs to go to the health facility?
 1. Yes 2. No
 If yes how much per travel?
 If Bus (Public transport), how is it easily available?
 If Moto (Public transport), how is it easily? available
11. What do you think of the medical ability (trust) of the available health facilities to you?
 1. Very good 2. Good 3. Bad 4. Very bad
12. Which factors are important for you to get access to a better healthcare?
 (quality of service, travel time, distance, cost,...)
 Please rank you preference from the first to the last
 -
 -

Social capital of the interviewed household

1. Do you live with your best friends or any relative in this settlement ?
2. How important is to live close to your friends and relatives?
 1. Very important 2. important 3. Less important If 1 and 2, why?.....
3. Do your household members participate in any other association/ community group which is not a saving group?
 1. Yes 2. No
4. If yes, in relation to which activity is that association?
 1. Micro saving 2. Health 3. Education 4. Other (specify)
5. For how long are they member? Years
6. How important is to participate in a community group or association?
 1. Very important 2. Important 3. Less important
 If 1 and 2, why?.....

Perceptions of affected (to be displaced) households on possible impacts of displacement and resettlement project

1. Have you been informed about the displacement/resettlement project
1. Yes 2. No
2. When were you informed about the displacement/resettlement project?
3. How were you informed?
1. Media 2. Individual consultation 3. Meeting 4. Other (specify)
4. What did they tell you exactly?
5. Were the project details made clearly available to you?
1. Yes 2. No
6. If not what are the information you would like to have?
7. Can you explain how the lack of these information affect your current living?
8. What is your income category?
1. First category 2. Second category 3. Third category 4. Fourth category
9. Do you often use to discuss about the displacement project with your family members or friends?
1. Yes 2. No
10. What positive changes do you expect after your displacement?
11. What do you think you will lose because of displacement?
1. Loss of job 2. Loss social and economic networks 3. Loss of other income sources 4. Other
12. Do you ever think that your displacement will affect your land/house ownership? How?
13. Could you explain how you think will displacement affect your income generating activities?
14. Could you explain how you think will displacement affect your social economic networks?
1. Separation of relative and friends 2. Loss of association and community groups 3. Add more
15. What challenges do you expect that may affect access to education of your family members? Explain why
16. What are challenges do you expect that may affect your access to healthcare? Explain why
17. What challenges do you expect that may affect your savings?
18. Can you make a distinction between material and non-material losses?
19. Can you rank three importance losses that will affect your general well-being?

Appendix 2

Interview with resettled households

Thank you for accepting to participate in this interview which objective is all about academic. My name is Alice Nikuze, I am conducting a research on Urban Residential Displacements and Resettlements as part of my PhD research at University of Twente. Please be insured that I acknowledge and respect your privacy. All the information provided in this questionnaire shall be used only for this research purpose and treated with utmost confidentiality. Thus, be open in your responses. You are not obliged to answer any question that you don't want to answer.

The objective of this questionnaire is to assess the planning process of population displacement/resettlement in Kigali and understand how livelihood capitals of the displaced/resettled changed because of that process

General information

1. Name of the interviewed person:
2. Previous address (cell, village):
3. Current address (cell, village):
4. How long have you been living here:
5. Religion:

General characteristics of household members

Household members	Sex	Age Years	Marital Status	Highest education level	Vocation skills
HoH	Male		Married	Illiterate,	Moto drivers
Spouse	Female		Single	Semi-	Car drivers
Children			Divorced	literate,	Masonry
Other			Widowed	Completed	/Carpentry
				Primary	Mechanic/Electrical/
				School,	Electronic
				Attending	Couture
				Primary	Others:
				School,	
				Completed	
				secondary	
				School,	
				Attending	
				secondary	
				school,	

	Graduate level (University), Attending university, Others.
Interviewed person (.....)	

Impacts of displacement/resettlement

1. Which of among the aspects of livelihood below were changed because of displacement/ resettlement in case of your household?
 1. Education of household members
 2. Health condition
 3. Household income
 4. Access to infrastructure
 5. Add more

Impact on education

1. Do you have members who dropped out the studies?
 1. Yes
 2. No
 If yes, what are the reasons?
2. What do you think are other changes in education of your household members after displacement /resettlement?

Impact on health conditions

1. HoH 2. Husband/ wife 3. Child (3a,3b,3c,...) 4. Other		If any change, how this change affect your life?	What do you do to adapt to it?
Current situation	Previous situation		
What is the status of the health condition of your household members			
1. Much better 2. Somewhat better 3. Somewhat worse 4. Very much worse			
HoH			
.....			

Impact on ability to use previously used skills

1. HoH 2. Husband/ wife 3. Child (3a,3b,3c,...) 4. Other		If any change, how this change affect your life?	What do you do to adapt to it?
Current situation	Previous situation		
What are the vocation skills your household members use to generate income? 1. Moto drivers 2. Car drivers 3. Masonry /Carpentry 4. Mechanic/Electrical/Electronic 5. Couture 6. Add others:			
HoH			
.....			

Impact on main source of income activities

Current situation	Previous situation	If any change, how this change affect your life?	What do you do to adapt to it?
1. Who are the income earners in your household? 1. HoH 2. Husband/ wife 3. Child 4. Other			
2. What jobs opportunities do the main income earners can/could find in your settlement area? 0. None 1. Laborers 2. Artisans 3. Merchants, 4. Small business owners, 5. Others			
3. What jobs do the main income earners of the house do for income earning 1. Laborers 2. Artisans 3. Merchants 4. Small business owners, 5. others			
4. Type of job 1. Temporary 2. Permanent			
5. Place/ Location			
6. Distance to the work place: 1. At home 2. Less than 1 Km, 3. 1-3 Km, 4. 3-5km, 5. More than 5Km			
7. Transport mode to work place: 1. Foot, 2. Bus, 3. Car, 4. Motorcycle 5. Other Cost of transport			
8. Was the main income earner of this household able to maintain his/her main job after displacement 1. Yes 2. No If no what are the reasons?			

Impact on other sources of income and savings

	Current situation	Previous situation	If any change, how this change do to affect your life? it?	What do you
1.	What was/ is your household monthly average income? 1. < 50000Frw 2. 50000-100000Frw 3. 100000-300000Frw 4. 300000-500000Frw			
2.	What is your current household monthly expenditure compared to one before displacement/resettlement? 1. Very high 2. High 3. Same 4. Less Very less			
3.	Apart from jobs, do / did you have any other source of income 1. Yes 2. No If yes which? 1. Hair salon 2. Couture 3. Welding 4. others			
4.	Do /did you have any home-based income activity? 1. Yes 2. No If yes, which one? 1. Cooking for restaurant 2. Livestock 3. Others			
5.	Do/did you own any house for residential or business purpose for renting? 1. Yes 2. No If yes, how many? 1. One 2. Two 3. Three 4. More			
6.	Do / did you have any personal savings? 1. Yes 2. Yes but less amount 3. No			
7.	Is / was your household participating in any saving group in the settlement? 1. Yes 2. No If yes What is that saving group? 1. Bank 2. Micro credit 3. Community saving groups			

Impact on share of expenditures

Items	% of income Current situation	% of income Previous situation	If any change, what are the reasons behind this change?	If any change, how this change affect your life?
Food				
Clothing				
Transport cost				

Water
Electricity
Health
Education

Impact on land and house ownership

Current situation	Before resettlement	If change, how this change affect your life?	If negative changes, what do you do to adapt to it?
1. House ownership 1. Owner 2. Tenant 3. Other			
2. What documents that support your ownership?			
3. What is /was the type of the dwelling unit? 1. Detached 2. Multifamily house 3. Several separate buildings 4. Several connected buildings			
4. How many sleeping rooms per house? 1. One room 2. Two rooms 3. Three rooms 4. More than three			
5. Extent of your land (m ²)?			

Impact on access (accessibility, availability, affordability, accommodation, acceptability) to physical infrastructure

Water, sewerage, electricity, road, transport and other amenities

Current situation	Before resettlement	If any change, how this change affect your life?	If negative changes, what do you do to adapt to it?
1. What is/was the source of power/light? 1. Electricity 2. Generator 3. Solar energy 4. Candle 5. Others:			
2. Access to source of power 1. Good 2 Fair 3. Bad			
3. What is /was the main source of water for your household uses? 1. Home tap 2. Public tap 3. Spring/Well 4. Any other			
4. If not home tap, how far is /was located the water source from your house?			

Appendix

-
1. Less than 1 Km 2. 1-3 Km 3. 3-5km 4. More than 5Km
-
5. Do /did you incur any water cost?
1. Yes 2. No If yes, how much a jerrican on average
-
6. What other issues related to access to water do/ did you experienced?
e.g. Daily availability, quality, etc.
-
7. How do /did you dispose of your liquid waste?
1. Pit latrine 2. Open air disposal 3. Septic tank
4. Others:
-
8. How do/ did you dispose of your solid waste?
1. Municipal collection 2. Burn 3. Dump in the
drainage 4. Others (specify)
-
9. How far is /was it from your house to the nearest bus stop
1. Less than 1 km 2. 1-3 km 3. 3-5km 4. More than 5km
-
10. How far was/ is it from your place to your church
1. Less than 1 km 2. 1-3 km 3. 3-5km 4. More than 5km
-
11. How far was/is it from your place to the city centre?
1. Less than 1 km 2. 1-3 km 3. 3-5km 4. More than 5km
-
12. Mode of transport to city center
1. Foot 2. Bus 3. Car, 4. Motorcycle 5. Other
-

Market places

- | Current situation | Before resettlement | If negative change, how this change affect your life? | What do you do to adapt to it? |
|--------------------------|----------------------------|--|---------------------------------------|
|--------------------------|----------------------------|--|---------------------------------------|
-
1. What are the markets do you use for buying needed items?
Multiple answers are possible, state them by order from the most looking for.
Locations/ names:
-
2. Items mostly looking for:
1. Clothes 2. Foods 3. Household items 4. Add more:
-
3. Are the markets visited by your household the nearest?
1. Yes all the time 2. Yes sometimes 3.No at all
If **2&3**, why don't you go to the nearest?
-
4. How far is the most visited (preferred) market from your home place?
1. Less than 1 Km 2. 1-3 Km 3. 3-5km 4. More than 5Km
-
5. What do you think of the distance to markets available to you?
1. Very near 2. Near 3. Far 4.Very far
-
6. What do you think of the travel time to the markets available to you?
1. Very short 2. Short 3. Long 4. Very long
-

-
7. What mode of transport do you use to go to those markets ?
1. Foot, 2. Bus (Public transport), 3. Private Car, 4. Motorcycle (Public transport) 5. Other

 8. Do you incur any transport costs to go to the market?
1. Yes 2. No
If **yes** how much per travel?
If **Bus (Public transport)**, how is it easily available?
If **Moto (Public transport)**, how is it easily available?

 9. What do you think of the ability (trust) of the available market to provide your needed items?
1. Very good 2. Good 3. Bad 4. Very bad

 10. What do you think of the price of your needed items in the markets close to you?
1. Very expensive 2. Expensive 3. Cheap 4. Very cheap

 11. Do the market opening days fit your household need?
1. Yes 2. No

 12. Which factors are important for you to get access to markets?
(available items, travel time, distance, cost,...)
Please rank your preference from the first to the last
•
-

Schools

- | | Current situation | Before resettlement | If negative change, how this change affect your life? | What do you do to adapt to it? |
|----|---|----------------------------|--|---------------------------------------|
| 1. | What are the schools do your household members attend?
Locations/names: | | | |
| 2. | What do you think of the distance to schools available to you?
1. Very near 2. Near 3. Far 4. Very far | | | |
| 3. | What do you think of the travel time to schools available to you?
1. Very short 2. Short 3. Long 4. Very long | | | |
| 4. | Are the schools visited by your household the nearest?
1. Yes 2. No
If no, why don't you go to the nearest? | | | |
| 5. | How far are the schools from your home place?
1. Less than 1 Km 2. 1-3 Km 3. 3-5km 4. More than 5Km | | | |
-

-
6. What mode of transport do you use to go to the market ?
1. Foot, 2. Bus (Public transport), 3. Private Car, 4. Motorcycle (Public transport) 5. Other

 7. Do you incur any transport costs to go to school?
1. Yes 2. No
If **yes** how much per travel to?
If **Bus (Public transport)**, how is it easily available? Short distance to bus stop, supply hours, frequency
If **Moto (Public transport)**, how is it easily? available

 8. What do you think of the ability (trust) of the available school to provide a good quality of education?
1. Excellent 2. Very good 3. Good 4. Fair 5. Poor

 9. Which factors are important for you to get access to school?
(quality, private, public, travel time, distance, cost,...)
Please rank you preference from the first to the last
•
-

Health facilities

	Current situation	Before resettlement	If negative change, how this change affect your life?	What do you do to adapt to it?
1.	Which health facilities do your household visit for primary health care? Possible multiple answers, state them by order from the most visited. 1. Hospitals 2. Heath centers 3. Clinics 4. Traditional 5. Others: Locations/ names:			
2.	What is the type of the facilities? 1. Public 2. Private			
3.	What do you think of the distance to available health facilities? 1. Very near 2. Near 3. Far 4. Very far			
4.	What do you think of the travel time to the available facilities 1. very short 2. Short 3. Long 4. Very long			
5.	Are the facilities visited by your household the nearest? 1. Yes 2. No If no, why don't you go to the nearest?			
6.	How far is the health center from your home place? 1. Less than 1 Km, 2. 1-3 Km, 3. 3-5km, 4. More than 5Km			
7.	How far is the hospital from your home place? 1. Less than 1 Km, 2. 1-3 Km, 3. 3-5km, 4. More than 5Km			

8. What mode of transport do you use to go to the health center facility ?
 1. Foot, 2. Bus (Public transport), 3. Private Car, 4. Motorcycle (Public transport) 5. Other

9. Do you incur any transport costs to go to the health facility?
 1. Yes 2. No
 If **yes** how much per travel?
 If **Bus (Public transport)**, how is it easily available?
 If **Moto (Public transport)**, how is it easily? available

10. What mode of transport do you use to go to the hospital facility ?
 1. Foot, 2. Bus (Public transport), 3. Private Car, 4. Motorcycle (Public transport) 5. Other

11. Do you incur any transport costs to go to the health facility?
 1. Yes 2. No
 If **yes** how much per travel?
 If **Bus (Public transport)**, how is it easily available?
 If **Moto (Public transport)**, how is it easily? available

12. What do you think of the medical ability (trust) of the available health care to you?
 1. Very good 2. Good 3. Bad 4. Very bad

13. Which factors are important for you to get access to a better healthcare?
 (quality, travel time, distance, cost,...)
 Please rank you preference from the first to the last
 •

Impact on social networks

1. How important do you think is to live close to your friends and relatives?
 1. Very important 2. important 3. Less important
 If 1 and 2, why?
2. How important do you think is to participate in community groups/association
 1. Very important 2. Important 3. Less important
 If 1 and 2, why?

	Current situation	Before resettlement	If change, how this change affect your life?	What do you do to adapt to it?
3.	Where did/ do most of your relatives and friends live?			
	1. In the same settlement as you 2. Other place in Kigali city			

3. Other places (district)

4. Did/Do your household members participate in any association/community group?

1. Yes 2. No

5. If yes, in relation to which activity is that association?

1. Micro saving 2. Health 3. Education 4. Other (specify)

6. Have you been able to maintain your previous social networks (friend, relative and other community groups)?

1. Yes 2. No

If no, what are the reasons?

About the resettlement process

Access to information

1. When did you hear about your displacement/resettlement project for the first time
 1. Less than a year before start
 2. one year before start
 3. Two years before start
 4. Add more
2. How did you get to know about your displacement /resettlement project? *Multiple answers are possible*
 1. Television
 2. Radio
 3. Newspapers
 4. Internet
 5. Notice board
 6. Public announcement
 8. Add more
3. Were you satisfied with information provided ? If not why?

Openness of the process

1. Were you informed about the laws governing displacement/resettlement?
 1. Yes
 2. No
2. If Yes, was the explanation of the laws comprehensive?
 1. Very comprehensive to contribute to the process
 2. Just enough to know what is going on
 3. A few part of it
 4. Not at all
3. Was the process of displacement / resettlement explained to you?
 1. Yes
 2. No
4. If Yes, was the explanation of the process clear?
 1. Very clear to contribute to the process
 2. Just enough to know what is going on
 3. A few part of it
 4. Not at all

5. How much did you know about:

	Very much to contribute to the process	Just enough to know what is going on	A few part of it	Didn't know
Compensation Assessment				
Payment schedule				
Displacement/ Resettlement plans				
Timetable of the process				

Involvement of stakeholders

1. How were you involved in the process?
 1. Very much to contribute to the process
 2. Just enough to know what is going on
 3. A few part of it
 4. Not at all
2. Did you have any representative in the process?
 1. yes
 2. No
3. If yes, how were your representatives selected?
 1. Election
 2. Leaders already in place
 3. Other
4. How often did you meet your representatives?
 1. Monthly
 2. When there is information to give us
 3. Other

Decision making process

1. Have you ever wished to present a claim in relation with the resettlement project?
 1. Yes
 2. No
2. If yes, were you able to lodge your claims?
 1. Yes
 2. No
3. If yes, what were the claims about?
4. Did you ever oppose any plans within the displacement/ resettlement process? Please explain
 1. Yes
 2. No
5. Were you involved in the choice of resettlement site?
 1. Yes
 2. No
6. If yes, were your views taken into consideration and implemented?
7. Were you involved in the design of houses?
 1. Yes
 2. No

8. If yes, were your views taken into consideration and implemented?
 1. Yes
 2. No
9. What are other decisions would you wish to decide on in planning process of displacement/resettlement?
10. Which aspects of a population displacement/ resettlement process would you like to be improved/ changed for future to mitigate displacement/ resettlement related negative impacts?

Appendix 3

Focus Group Discussion with households to be displaced

Date:

Location:

Introduction

Welcome and thank you for accepting to be part of the focus group discussion. My name is Nikuze Alice, am a PhD candidate at university of Twente. I am doing a research on the topic of population displacement and resettlement.

Purpose

The reason we invited you to this focus group discussion is to understand how you feel about your resettlement, your opinions over the planning and decision-making of your resettlement and perceptions about the impacts. We need your input and want you to share your honest and open thoughts with us.

Rules :

- We would like everyone to participate.
- Every person's experiences and opinions are important. There is no right or wrong answers.
- Speak up whether you agree or disagree.
- We want to hear a wide range of opinions.
- You will remain anonymous. We don't identify anyone by name in our research publications.

Consent: We would like to capture everything you have to say. Do you allows to record this FGD?

General knowledge and feeling about resettlement

1. What are you feelings about your displacement/resettlement process?

2. Do you know that you may be displaced as a mean of disaster risks reduction/because of development project?
3. Which are your general feelings about being displaced/having to leave your location?, are you worried/afraid/happy?
4. Do you see anything good in it (advantages of being relocated) or bad?
5. What are the most important things for you to consider while and when being relocated?

Decision-making process

I would like to discuss with you what you know about the process of your displacement/resettlement.

1. Tell me what you know about the process of your displacement/resettlement?
2. Have you been informed about your displacement/resettlement project?
3. Do you know when and where you will be displaced/resettled?
4. How did you know about displacement/resettlement?
5. What information did you receive exactly?
6. What other kind of information would you like to know in relation to your displacement/resettlement?
7. If you were involved in the planning process of displacement/resettlement what contribution could you make to that planning process?
8. Do you wish to be involved in the planning process of your displacement and resettlement project?
9. How do you wish the process should be carried out?

Identification of potential impacts

I would now like to ask questions more specifically on the impacts that you might face because of displacement/resettlement.

1. What do you think will be the changes on your life because displacement/resettlement and their impacts?
2. What do you think are the benefits and opportunities?
3. What do you think are the negatives changes? And why these happen?
4. Can you make a distinction between material and non-material changes?
5. Which changes will affect the most your everyday life conditions? (From the most affecting to the least).

Appendix 4

Focus group discussion with resettled households

Date:

Location:

Introduction

Welcome and thank you for accepting to be part of this focus group discussion. We appreciate your willingness to participate. My name is Nikuze Alice, am a PhD candidate at university of Twente. I am doing a research on the topic of population displacement and resettlement.

Purpose

The reason we are having this focus group discussion is to understand your experience from your displacement/resettlement process. We need your input and want you to share your honest and open thoughts with us.

Rules

- We would like everyone to participate.
- Every person's experiences and opinions are important. There is no right or wrong answers.
- Speak up whether you agree or disagree.
- We want to hear a wide range of opinions.
- You will remain anonymous. We don't identify anyone by name in our research publications.

Consent: We want to capture everything you have to say. Do you allows to tape recording the group?

General knowledge and feeling about resettlement programs and about being displaced/relocated

1. What was your expectation about advantages and disadvantages of being displaced/relocated?

Decision-making process

I would like to discuss with you what you know about the process of your displacement/resettlement.

1. How satisfied are you with your displacement/resettlement planning process?
2. Did the process of displacement/resettlement go smoothly? What was good? What was not?

3. What constitute a good resettlement site?
4. If you were involved in the planning process of displacement/resettlement what contribution did you make to that planning process?
5. How do you think could the process be improved?

Identification of potential impacts

I would now like to ask questions more specifically on the changes that your life might have experienced because of displacement/resettlement.

1. How do you think your life have changed because of displacement/resettlement?
2. What do you think are the benefits and opportunities?
3. What do you think are the negatives changes? And why these happened?
4. Can you make a distinction between material and non-material changes?
5. Which changes affect the most your everyday life conditions? (From the most affecting to the least).

Appendix 5

Interview guide with key informants

Date:.....

Thank you for accepting to participate in this interview. My name is Alice Nikuze, I am conducting a research on Urban Residential Displacements and Resettlements as part of my PhD research at University of Twente. I requested your participation in this interview because your participation (by giving clear and accurate answer) is very important for the realization of this study. Please be sure we acknowledge and respect your privacy. All the information provided in this questionnaire shall be used for the research purpose only and treated with utmost confidentiality. Thus, be open in your responses. You are not obliged to answer any question that you don't want to answer. The interview will take between 40-50 minutes. The objective of this questionnaire is to understand the planning process and the perceived impoverishment risks in both development induced and disaster induced displacements and resettlements projects in Kigali city.

General information

Interviewee:
Organization:
Department:
Position, for how long:

1. Where you involved in any displacement/resettlement process ?
2. In which project were you involved in ?
3. Please specify where the project took place, the reason and the number of affected households
4. Where can the report about that project be found?
5. What was your role/responsibilities in resettlement programs in Kigali?
6. How were communities to be displaced/resettled identified?

Laws, rules, guidelines and how they are applied

1. What are basic frameworks, rules and guidelines applied in displacement/resettlement processes.
2. What laws/chapter, articles in Rwanda are applied in displacement/resettlement process?

3. What claims of those laws, guidelines that contribute to the processes of displacement and resettlement ?
4. Are there any differences between the planning process of development induced displacements and disaster induced displacements?

Planning process and decision making problems

1. What are the main steps involved in the process of planning urban population displacement /resettlement ?
2. What are the most critical decisions problems (issues) that are addressed by the stakeholders during the steps of the planning process?
3. Is there any idea to change the way the process is carried out? If yes Why?
4. Have you ever participated of in-situ resettlement? If yes, how did you plan for the transition period

Stakeholders

1. Who are the key stakeholders in displacement /resettlement programs in Kigali?
2. Among those stakeholders, who can make what is intended in the planning process more effective through their participation or less effective by their non-participation?

Stakeholders participation and their roles

1. Are all stakeholders involved in the planning and decision making processes? If yes, Who is involved at what stages and what is his role?
2. Are the affected communities also involved? If yes, how and at what stages?
3. How are people views on displacement/resettlement taken?
4. Can affected people views induce changes in the planning process?
5. How are households to be resettled are sectioned?
6. How the compensation values are determined?
7. What are the provisions in handling complaints of the affected households?
8. What are the factors considered during resettlement site selection?
9. What are the factors considered when designing houses?
10. How is the allocation of houses in the resettlement site done?
11. Are the affected households involved in the site planning and the design of the houses?

Impoverishment risks variables and indicators

1. Below are problems that might be experienced by displaced/resettled people. Please specify which ones you already were aware of.
 1. Landlessness
 2. Joblessness
 3. Homelessness
 4. Food insecurity
 5. Loss of access to common property
 6. Health problems
 7. Increased morbidity and mortality
 9. Social disarticulation
 10. Marginalization
 11. Uncertainty
 12. Add
2. What are the key characteristics that should be measured to identify and characterize the above problems in the context of urban population displacement / resettlement?

Variables	e.g definition/indicators	Please specify in the case of Kigali and add more if needed
Landlessness	Loss land and property on it Increased distance to opportunities, amenities, etc.	
Joblessness	Loss of income Loss of job opportunities Increased distance and cost to work place	
Homelessness	Loss of shelter Loss of place of living opportunities	
Food insecurity and Health problems	Loss of access to fair and cheap price markets Decreased access to good quality services of health care Unusual sickness ratio	
Loss of access to common property	Decreased access to education and health services School dropout ratio and loss of school attendance days Increased distance travel cost and monthly cost for education vis-à-vis income	
Increased morbidity and mortality	Deteriorated food consumption habit	
Social disarticulation	Increase distance to friend and relatives Loss of social networks (sellers and customers)	
Marginalization	Loss of economic power	

Uncertainty	Limited knowledge about the displacement / resettlement project Stop productive activities	
-------------	---	--

3. Were the above problems considered during the planning process in Kigali? If yes what strategy did you used to minimize it in each case?

Variables	Strategy to minimize it
Landlessness	
Joblessness	
Homelessness	
Food insecurity and Health problems	
Loss of access to common property	
Increased morbidity and mortality	
Social disarticulation	
Marginalization	
Uncertainty	

4. Which problems among the potential problems do you think were experienced by the displaced/ resettled people in Kigali? Can you rank them by order to show how important are they as considered in the displacement and resettlement programs in Kigali?

Case of urban development projects	Case of disaster risks reduction projects

5. Do you find any difference between problems caused by development- induced and disaster (high risk area) induced displacement and resettlement processes?

Please specify any uniqueness observed in each case and what do you think is the reason.

Case of urban development projects	Case of disaster risks reduction projects

6. What are the most important reasons for unsatisfactory outcomes of resettlement in each of the two cases (development projects and high risk areas case)?

Case of urban development projects	Case of disaster risks reduction projects

7. Which aspects of a population displacement/ resettlement process would you like to be improved/ changed for future to mitigate displacement/ resettlement related negative impacts?

Appendix 6

Questionnaire for Kangondo and Mpazi displaced households (Second field work)

Location:

1. Age
2. Family size
3. What decisions were made by the decision-makers without consulting you while you think they should have consulted you?
4. Are you in the category of landowners who will receive a new house?
If yes, have you accepted the proposed compensation (the proposed new house)? 1. Yes 2.No
5. Could you tell us the reasons (at least three) why you accepted or decided to refuse the offered compensation?
6. Besides the size of the proposed new houses, what other concerns you wished to be considered in the decision-making?
7. What do you think should be done for the resettled (on-site or off-site) informal settlement to be satisfied and accept the compensated houses?

Did you like your resettlement site in Busanza. (Question 8,10 &11 are only for Kangondo study area)
1. Yes 2. No Please explain
8. If you had an opportunity to choose another site, which other locations in Kigali could you have chosen? Explain
9. What do you think were the positive aspects in the planning and decision-making of your relocation?
10. What do you think were the negative aspects in the planning and decision-making of your relocation?
11. Do you think you could have accepted the resettlement plan with satisfaction if you had participated in the resettlement site identification and the choice of the houses?

Appendix 7

Questionnaire: affected households' preferences

Study are.....Date:.....

Introduction

Greetings. My name is Alice Nikuze– a PhD candidate from the University of Twente in the Netherlands. I am conducting a research on resettlement of informal settlement dwellers. I am developing methods and tools which can support the participation of stakeholders in the planning and the implementation of those resettlement processes. For the purpose of data collection I selected you to participate in this survey. The objective of this questionnaire is to collect your perspective on the factors that can influence the selection of a resettlement site of informal settlement dwellers, in Kigali, i.e. the issues that need to be taken into consideration. The collected information will be kept anonymous and will be used solely for academic purposes.

Consent to use data in Research: Yes/ No

Details of the respondent

Location: _____

Gender:

Male	Female

Age range:

<30	31 - 40	41 - 50	>50

Occupation: _____

Place of work (for the main income earner): _____

Household size: _____

How many children are going at school: _____

How long have you been living in:

Kigali	This settlement

Criteria/indicators for selection a resettlement site

When selecting a resettlement site, there are criteria such as proximity to schools, markets, etc that can be considered. For this study we have identified some of those criteria.

1. Please indicate, by ticking the appropriate box below, the extent to which the criteria are important for you, when you have to choose a new settlement.

Criteria/ Indicators	Highly important	Somewhat important	Neutral	Somewhat unimportant	Highly unimportant
Living close to the city centre	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Live close to a trade centres (Udusant eri tw'ubucur uzi)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Live close to a commercial centre	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Appendix

Live close to a market	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Live close to primary school	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Live close to secondary school	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Live close to a health centre	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Live close to a hospital	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Live close to a bus stop	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Live close to a major road	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Live close to the current settlement	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Live close to my place of work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Price of land	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2. Are there any other criteria that are relevant for you? If so, please list up to three.

3. Do you have some preferred locations in Kigali where you would prefer to be relocated to? If so, please mention up to three preferred locations (sector, district).
4. Please explain why do you prefer those locations?
5. Do you know the different residential zoning types in the master plan? If yes, tell us which zoning you know
6. Any final remarks?

Appendix 8

Questionnaire: planning officials' preferences

Date:.....

Introduction

Greetings. My name is Alice Nikuze- a PhD candidate from the University of Twente in the Netherlands. I am conducting a research on resettlement of informal settlement dwellers. I am developing methods and tools which can support the participation of stakeholders in the planning and the implementation of those resettlement processes. For the purpose of data collection I selected you to participate in this survey. The objective of this questionnaire is to collect your perspective on the factors that can influence the selection of a resettlement site of informal settlement dwellers, in Kigali, i.e. the issues that need to be taken into consideration. The collected information will be kept anonymous and will be used solely for academic purposes.

Consent to use data in Research: Yes/ No

Details of the respondent

Name: _____

Organization: _____

Department: _____

Role: _____

Criteria/indicators for selection a resettlement site

1. Does your work in the past or at present relate to relocation processes (or expropriation) of urban dwellers in Kigali? Yes/No. If yes, explain what was your role
2. Have you ever participated in a process of site selection for the resettlement of informal settlement dwellers in Kigali? Yes/No. If yes, explain what was your role in this process.
3. If question no 2 is Yes, on the basis of what criteria did you select that resettlement site? Explain order (one is more important, e.g.)

When selecting a resettlement site, there are criteria such as proximity to schools, markets, etc. that might be considered. For this study we have identified some of those criteria.

4. Please indicate by ticking the appropriate box bellow, the extent to which you think the criteria is relevant when identifying a resettlement site for affected informal settlement dwellers in Kigali.

Criteria/ Indicators	Highly important	Somewhat important	Neutral	Somewhat unimportant	Highly unimportant
Living close to the city centre	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Live close to a trade centres	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

(Udusanteri tw'ubucuruzi)					
Live close to a commercial centre	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Live close to a market	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Live close to primary school	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Live close to secondary school	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Live close to a health centre	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Live close to a hospital	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Live close a to a bus stop	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Live close to a major road	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Live close to the current settlement	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Live close to my place of work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Price of land	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

5. Are there other issues that you think need to be considered when selecting a resettlement site for informal settlement dwellers in Kigali? If yes, please suggest up to three?

6. What role does the Master Plan and its land use zoning play in the process of resettlement site selection?
7. Which residential zones are in your opinion suitable for informal settlement dwellers to be resettled to?
8. Any final remarks?

Appendix 9

Overview of spatial data used in suitability analysis

Spatial data		Sources
Facilities and services locations	Primary schools	City of Kigali
	Secondary schools	
	Health centres	
	Hospitals	
	Trade centres	
	Commercial centres	
	Markets	
	City centre	
	Previous settlement	
Bus stops		
Local land price (village average cost of 1m2 between 2015-2017)		Institute of Real property valuers in Rwanda (IRPV)
Digital elevation model 10x10 m		City of Kigali
Rivers		City of Kigali
Kigali roads network		City of Kigali

Appendix 10

Questionnaire: RESET testing

This survey is part of an experiment of testing a Planning Support System (PSS) for resettlement site evaluation. Your participation will be a great help to us. Your responses will remain anonymous and used to gain a better understanding of your perceptions of the tool's usability (the extent to which users can make satisfactory use of its support capabilities or functionalities). In addition, summarized data will be used in a scientific article and a PhD thesis in relation with this research.

For clarity, the meaning of important concepts used in the questionnaire are provided in Table 1. Please refer to these when needed.

Meaning of usability indicators

Variables	Description
Transparency	The extent to which the underlying models and variables of the PSS are visible to users
User-friendliness/ ease of use	The extent to which participants are able to use the tool independently
Interactivity	The extent to which the tool directly responds to the users' questions and inputs
Ease of understanding	The extent to which the outputs are readily understood
Level of detail	The extent to which the level of detail of the displayed data matches the perspective of participants
Communicative value	The extent to which the visual output is useful for the participants
Reliability/credibility of the output	The extent to which the outputs of the tool are considered reliable
Satisfaction	The extent to which users are satisfied with using the tool

Part 1. The tool

1. To what degree do you agree or disagree with the following statements?

	Strongly Agree	Somewhat Agree	Neither Agree nor Disagree	Somewhat Disagree	Strongly Disagree
The tool is transparent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The tool is user-friendly/ easy to use	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The suitability analysis functionality is easy to use	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The choice making functionality was easy to use	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
It took (me) long to learn how to use the tool	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The interactivity of the tool is sufficient	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The suitability maps are easy to understand	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The output charts were easy to understand	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The level of detail of the displayed information is sufficient	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The final output suitability map is	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

useful to identify
potential sites

The final output
charts do help to
make the final
decision
regarding the
selected sites

The
communicative
value of the
outputs was high

The tool is reliable

I am satisfied
with the process

2. What do you consider to be the most important value of the tool (select one)

- better communication better collaboration more efficient work more informed result none
- Other, namely

3. Please provide any general comments about the PSS tool

4. Please provide any general comments about the workshop

5. What, if anything, could be improved in a future experiment?

Part 2. About yourself

1. Gender: Female Male Prefer not to say
2. Age group: <18 years 18–30 years 31–50 years 51–65 years

3. Select your highest education level: Bachelor Master's
 PhD
4. Please specify your education background:

5. Have you ever participated in a participatory spatial planning workshop before this experiment? Please explain
6. Do you have any experience with using CommunityViz PSS?. Please explain

I have seen a demo	
I have worked with an existing PSS	
I have designed and used own tool	

7. Do you have experience with touch tables? Please explain
8. Do you have experience with using any other PSS? Explain

Appendix 11

Ethical considerations

This research involved working with data about humans, including key informants, mostly government officials and resettlement affected communities, locally considered urban poor. Several steps were taken to protect the interests of the respondents. During data collection, we first requested the authorisation from the local authorities (Kigali City) to conduct our research. And we always presented the authorisation from City Hall to the concerned lower-level local authorities i.e. at the sector, cell, and village levels to get their approval to collect data. Second, before interviews and focus groups discussions, we always sought the consent of our participants by informing them of the purpose and the study focus, explaining them their rights, including the right to withdraw at any point during the interview, not responding to a question if they do not wish and most importantly that we would protect their privacy during the research and in our academic reporting. This statement on privacy protection came with our responsibility to ensure that the data were safely stored on the UT network storage during the research and we pseudonymized the collected data since we had collected personal data such as the name, age and income. Only the pseudonymized data have been published with restricted access in a repository (DOI:10.17026/dans-zvv-xtb6; DOI: 10.17026/dans-xae-2xdw; DOI:10.17026/dans-xx3-xjfn). Some respondents presumed that the main researcher had ties to local authorities or resettlement project implementation teams, or that I was a government official. Therefore, the researcher informed them that she was only doing academic research, and that the findings and recommendations might be used to inform future decision-making processes.

Further ethical considerations relate to questions of interpretation and representation, not only during data collection but also in the analysis and discussion on results. Since all our interviews were not recorded, we were aware that information can be lost when writing the responses. The fact that semi-structured interviews were triangulated with focus groups strengthens the quality of the collected data and minimized the risk of misinterpretation. Having multiple sources of data was useful to establish the validity of the findings and our conclusions. It also contributes to the generation of new ideas and studies toward more equitable displacement and resettlement processes.

Summary

Fast-urbanising cities in Africa are undergoing massive socio-spatial transformations. Old inner-city neighbourhoods are being replaced by new developments, leading to the displacement and resettlement of many citizens. Moreover, the resettlement of households from hazardous areas is often applied as a risk mitigation strategy. Resettlement entails the physical displacement of the population and it disrupts their social, economic and cultural relations, increasing impoverishment. Resettlement is, therefore, often contested. To mitigate resettlement's adverse impacts, collaborative planning approaches are required. This research aimed **to develop planning support tools to facilitate collaborative decision-making in resettlement processes**, drawing upon case studies from, Kigali City, Rwanda. Four specific objectives were addressed.

First, **to analyse the impacts of urban induced displacement and resettlement processes on the livelihoods of affected informal settlement dwellers**, the research drew upon information from resettled households and households to be displaced, and key informants. Despite receiving improved housing, most displaced households endured multiple impacts on their physical, financial, social, and human livelihood assets. Moreover, the affected households also endured significant adverse livelihood impacts in the pre-relocation stage due to high levels of uncertainty they were confronted with. Accurate and detailed information about the resettlement projects should be communicated early in the process to reduce impoverishment risks for affected households.

The second objective **examined the governance practices in the resettlement of informal settlement dwellers, focusing on participation and the responses of affected people**, from the Kangondo community, one of Kigali's oldest informal settlements. Our research showed that the displaced dwellers voiced their concerns over deviations from the Expropriation Law, secretive compensation decision-making, lack of transparency in property valuation, and compensation packages that they perceived to be unfair. The consequences were strong feelings of unfairness, exclusion, marginalisation, distrust and increased perceptions of impoverishment

risks, which fuelled contestation and resistance. Such contestations constitute claimed spaces and interactions in which affected landowners lay claim to fair processes fighting the “exceptionality” and “decide-defend” decision-making through which the local authorities assert their power.

Kigali City prefers to provide new homes in resettlement sites for the affected informal households as a strategy to improve living standards and avoid the creation of new informal settlements. Therefore, selecting a resettlement site is a fundamental concern for all parties. Hence, the third objective was **to analyse and compare key stakeholders' preferences for resettlement attributes and their spatial implications on the suitability of potential resettlement locations in Kigali City**. The findings revealed similarities and significant differences between the two stakeholder groups' preferences, giving rise to different suitability maps for new sites. Given the substantial spatial implications of their divergent views, methods to seek common ground are needed to reduce conflict.

The final objective was **to develop and test a geo-information-based planning support tool (RESET) to aid decision-making during a participatory resettlement site identification exercise**. RESET guides resettlement site selection based on relevant criteria and indicators by applying a multicriteria analysis evaluation of the suitability of potential sites. It allows participation and deliberation to occur through a user-friendly interface that facilitates stakeholder discussions by conveying the required information to define suitable sites. In this way, RESET can support stakeholders' negotiations in resettlement processes.

In **conclusion**, the current displacement and resettlement processes of urban poor in African cities have many adverse livelihood impacts and impoverishment risks. This research broadens the knowledge on the governance of the displacement and resettlement of informal settlements and the pre- and post-relocation livelihood impacts. Furthermore, the research informs policymakers of the preferences regarding resettlement site attributes and proposes RESET as a novel planning support tool to strengthen the participation of critical stakeholders in crucial resettlement decision-making processes.

Samenvatting

In Afrikaanse steden die in rap tempo verder verstedelijken vinden grootschalige sociaal-ruimtelijke transformaties plaats. Oude wijken in de stad worden vervangen door nieuwe ontwikkelingsprojecten, waardoor veel inwoners moeten verhuizen en zich elders opnieuw moeten vestigen. Ook wordt hervestiging van gezinnen vanuit risicovolle gebieden vaak gebruikt als een risicobeperkende strategie. Het hervestigen van mensen houdt in dat zij fysiek verhuizen, wat hun sociale, economische en culturele relaties verstoort en zorgt voor verarming. Er wordt daarom vaak bezwaar gemaakt tegen hervestiging. Om de negatieve effecten van hervestiging te verkleinen is een aanpak op basis van gezamenlijke planning vereist. Dit onderzoek richt zich op **het ontwikkelen van planningsondersteunende hulpmiddelen om gezamenlijke besluitvorming in hervestigingsprocessen mogelijk te maken**, met behulp van casestudy's uit Kigali City in Rwanda. Er zijn vier specifieke doelstellingen onderzocht.

Ten eerste hebben we, **om de effecten van door de stad opgelegde verhuizingen en hervestigingen op het leven van de betrokken stadsbewoners van informele nederzettingen te onderzoeken**, onderzoek gedaan op basis van informatie over gezinnen die zijn verhuisd of dit gaan doen en informatie afkomstig van belangrijke informanten. Ondanks betere woonomstandigheden bleken de meeste gezinnen die zijn verhuisd verschillende effecten te hebben ervaren op hun fysieke, financiële en sociale welzijn en op het voorzien in hun levensonderhoud. Ook bleken de betreffende gezinnen aanzienlijke negatieve effecten te ervaren op het voorzien in hun levensonderhoud tijdens de fase voorafgaand aan de verhuizing, als gevolg van de hoge mate van onzekerheid waarin zij verkeerden. Er zou al vroeg in het proces juiste en gedetailleerde informatie over het hervestigingsproject moeten worden gedeeld om de risico's op verarming voor de betrokken gezinnen te verkleinen.

De tweede doelstelling was gericht op **het onderzoeken van de governancepraktijken die worden gehanteerd bij de hervestiging van bewoners van informele nederzettingen, waarbij we ons hebben gericht op de inspraak en de reacties**

van mensen die worden getroffen, in dit geval van de Kangondogemeenschap, een van de oudste informele nederzettingen van Kigali. Uit ons onderzoek bleek dat de verplaatste stadsbewoners hun zorgen kenbaar hebben gemaakt over schendingen van de Expropriation Law, de geheimzinnige besluitvorming over de compensatie, het gebrek aan transparantie met betrekking tot de waardering van het vastgoed, en over compensatiepakketten die volgens de betrokken bewoners onredelijk waren. De gevolgen hiervan waren een sterk gevoel van onrecht, uitsluiting, marginalisatie, wantrouwen en het gevoel een hoger risico op verarming te lopen, waardoor het aantal bezwaarstellingen en de weerstand toenamen. Onder bezwaarstelling wordt verstaan het claimen van bepaalde ruimtes, en interacties waarbij getroffen landeigenaren eerlijke processen eisen, om besluitvormingsprocessen tegen te gaan op basis van principes zoals 'uitzonderlijke situaties' en 'beter achteraf vergiffenis vragen dan vooraf toestemming'. Deze manier van besluitvorming wordt door de lokale autoriteiten ingezet om hun macht te doen gelden.

Kigali City biedt nieuwe huizen op hervestigingslocaties aan de geraakte informele gezinnen aan als een strategie om de levensstandaard van deze mensen te verbeteren en om te voorkomen dat er nieuwe informele nederzettingen ontstaan. Het selecteren van een hervestigingslocatie is dan ook een essentiële zaak voor alle partijen. De derde doelstelling was daarom **om de voorkeuren van de belangrijkste betrokken partijen met betrekking tot de kenmerken van de hervestigingslocaties en de ruimtelijke implicaties hiervan te analyseren en te vergelijken met de geschiktheid van mogelijke hervestigingslocaties in Kigali City**. Uit de bevindingen komen zowel overeenkomsten als significante verschillen naar voren tussen de voorkeuren van de twee betrokken groepen, waardoor verschillende geschiktheidsoverzichten voor nieuwe locaties zijn ontstaan. De aanzienlijke ruimtelijke gevolgen van deze uiteenlopende visies vragen om methodes om te zoeken naar gedeelde belangen om het conflict te verkleinen.

De laatste doelstelling was **om een planningsondersteunend hulpmiddel op basis van geo-informatie (RESET) te ontwikkelen en te testen, om de besluitvorming te ondersteunen bij het met inspraak vaststellen van een hervestigingslocatie**. RESET biedt ondersteuning bij het selecteren van hervestigingslocaties op basis van

relevante criteria en indicatoren, door een analyse te maken op basis van meerdere criteria voor de geschiktheid van potentiële locaties. Dankzij de gebruiksvriendelijke interface kan RESET worden gebruikt voor inspraak en overleg, doordat gesprekken tussen de betrokken partijen worden gefaciliteerd door de benodigde informatie beschikbaar te maken, om zo tot een geschikte locatie te komen. Hiermee kan RESET tijdens het hervestigingsproces bijdragen aan de onderhandelingen tussen betrokken partijen.

De **conclusie** is dat het huidige proces voor het verplaatsen en hervestigen van arme stadsbewoners in Afrikaanse steden gepaard gaat met een groot aantal ongunstige effecten op het leven van deze mensen en met het risico op verarming. Met dit onderzoek wordt de kennis over de governance bij het verplaatsen en hervestigen van informele nederzettingen en de impact op levens van mensen voor en na de verhuizing verder vergroot. Daarnaast levert het onderzoek beleidsmakers informatie op over de voorkeuren wat betreft de kenmerken van een hervestigingslocatie, en wordt RESET gepresenteerd als een nieuw planningsondersteunend hulpmiddel om de inspraak van belangrijke betrokken partijen tijdens de essentiële besluitvorming over hervestiging te verbeteren.

Author's Biography



Alice Nikuze was born in 1985, in Rwanda. In high school, she studied Mathematics and Physics. In 2012, she graduated from the former Université National du Rwanda (UNR), now University of Rwanda, where she obtained a bachelor's degree with distinction in Civil Engineering. She worked as a tutorial assistant in the Department of Civil Engineering at the Institute of Applied Science INES-Ruhengeli until 2014 when she went to pursue her Master studies at the Faculty of Geo-information and Earth Observation, University of Twente in the Netherlands. In 2016, she graduated with a Master of Science degree (Cum Laude) in Geo-information Science and Earth Observation, specialisation in Urban Planning and Management. She was awarded a scholarship to pursue her doctoral research at the Faculty of Geo-information and Earth Observation, University of Twente. Her research outputs resulted in this thesis, and they were presented in international and regional conferences and published in scientific journals.

Scientific publications

- Nikuze, A.,** Sliuzas, R., & Flacke, J. (2018). Towards Equitable Urban Residential Resettlement in Kigali, Rwanda. In J. Flacke, J. Martinez, & M. van Maarseveen (Eds.), *GIS in Sustainable Urban Planning and Management A Global Perspective* (pp. 325–344). Taylor & Francis Group.
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- Nikuze, A.,** Flacke, J., Sliuzas, R., & van Maarseveen, M. (2022). Urban induced-displacement of informal settlement dwellers: A comparison of affected households ' and planning officials' preferences for resettlement site attributes in Kigali, Rwanda. *Habitat International*, 119, 102489.

Research Data

All the data used in research has been published in Data Archiving and Networked Services (DANS Easy) repository, the Dutch national centre of expertise and repository for research data, as:

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