Livelihood impacts of displacement and resettlement on informal households - A case study from Kigali, Rwanda

Alice Nikuze*, Richard Sliuzas, Johannes Flacke, Martin van Maarseveen

Faculty of Geo-Information Science and Earth Observation (ITC), University of Twente, PO Box 217, 7500 AE, Enschede, the Netherlands

ABSTRACT

Cities in Sub-Saharan Africa are undergoing massive socio-spatial transformations. Many old inner-city neighbourhoods are being demolished to give way to modern commercial and residential developments, and generally, to a more modern living environment. These ambitions often lead to manifold displacement and resettlement projects that affect the livelihoods of millions of people, including many from informal settlements. Given the novelty of urban space transformations in Sub-Saharan African countries, empirical research on the impacts on affected urban households is rare. Based on research conducted in Kigali, Rwanda, this paper discusses livelihood impacts, of urban redevelopment and disaster risk mitigation induced resettlement projects, on affected informal settlement households. This contribution draws on interviews and focus group discussions undertaken with both households to be displaced and resettled households, as well as interviews with key informants during fieldwork. The findings highlight that, irrespective of potential opportunities of resettlement projects to deliver improved housing to poor informal households, most displaced informal households in Kigali endure several adverse impacts on their physical, financial, social, and human livelihood assets. While previous studies narrowed displacement impacts to post-relocation impacts, this research shows that affected informal households also endure significant adverse livelihood impacts in the pre-relocation stage. Uncertainties during the pre-relocation phase are significant causes of impoverishment risks among the households likely to be displaced. Accurate and detailed information of the resettlement projects need to be communicated in the early stage of the process to avoid the unnecessary impoverishment risks of affected households. Clear transparent guidelines on entitlements and compensation for each displacement type need to be disclosed and discussed with affected communities. We conclude that an understanding of livelihood impacts in both the pre- and post-relocation stages offers a holistic conceptualisation, which is required to mitigate impoverishment risks and to protect and improve the livelihoods of affected households throughout the entire relocation process.

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 (Patel, D'Cruz, & Burra, 2002; Patel, Sliuzas, & Mathur, 2015; Viratkapan & Perera, 2006; Terminski, 2015; Koenig, 2011). 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 (Mitra et al., 2017; Meredith & Macdonald, 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 an 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 (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 (Noorloos & Kloosterboer, 2018; Strauch, Takano, & Hordijk, 2015; Wang & Aoki,

* Corresponding author.

E-mail addresses: a.nikuze@utwente.nl (A. Nikuze), r.sliuzas@utwente.nl (R. Sliuzas), j.flacke@utwente.nl (J. Flacke), m.f.a.m.vanmaarseveen@utwente.nl (M. van Maarseveen).

https://doi.org/10.1016/j.habitatint.2019.02.006

Received 7 September 2018; Received in revised form 4 February 2019; Accepted 15 February 2019
Informal settlements are often the most affected by urban renewal and redevelopment projects (Bogumil & Terminski, 2013). The households displaced by such urban development initiatives are either resettled on-site through land-sharing and site reconstruction (Davidson, Mirjam, Peltenburg, & Rodell, 1993; Viratkapan & Perera, 2006) or off-site, away from their original settlements, mostly in urban peripheries or rural areas (Davidson, Zaaljier, Peltenburg, & Rodell, 1993; Koenig, 2011).

Some informal settlements may also be established in hazardous areas that are prone to disaster risks (Un-Habitat, 2010; Kohli, Sliuzas, Kerle, & Stein, 2012; Lall & Deichmann, 2012). Disaster-induced displacement and preventive resettlement policy addresses populations in high-risk locations for whom resettlement may be the best possible option (Choi, 2016; Claudianos, 2014; Correa, Ramirez, & Sanahuja, 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, Doberstein, & Mortach, 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 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 (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 (Cornea, 1997; Patel et al., 2015).

In African cities, the displacement and resettlement projects of the poor are often framed as unavoidable (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” (Noorloos & Kloosterboer, 2018; Dwivedi, 2002). 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 paper as the pre-displacement period) (Terminski, 2015; Patel et al., 2015; Koirala, Hill, & Morgan, 2017). 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; Quetulino-Nava, 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. 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 paper 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 description of the study area, the selected research sites, and introduce the research methodology. Section three discusses the identified displacement and resettlement livelihood impacts on affected informal settlement dwellers in Kigali. In section four, we present our conclusions and discuss the implications of the research findings and recommendations for future research directions.

2. Methodology

2.1. Study area background

Kigali city is the economic and political capital of Rwanda. It is a large city, covering an area of 730 km², divided into three administrative districts: Nyarugenge, Kicukiro, and Gasabo (Fig. 1). For administration, the districts are further composed of three lower administrative levels: sectors, cells, and villages. Kigali’s landscape is characterised by a series of mountains, which are separated by wetlands (rivers, streams, and marshes). Some slopes incline by up to 40%, while slopes in the valleys and wetland areas are less than 2% (REMA, 2013). Due to this topography, some parts of the city experience landslides and massive runoffs during heavy rains (MININFRA, 2013). Kigali is among the fastest urbanising cities in East Africa. Its population increased from around 6000 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. Research sites

This research was conducted in six research sites, including three informal settlements to be displaced and three resettlement sites in Kigali City. 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 1).

The Mpazi site (Fig. 2) 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 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 (Photo 1).

The Kangondo II site (Fig. 3), 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 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, approximatively 15 km away from Bannyahe (see Fig. 4, for impression of apartments to be constructed).

The Kimisagara site (Fig. 5) 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.

---

1 Part of the area is located in the wetlands, and hence, not developable.
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. 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 1 provides an overview of the characteristics of these research sites.

### 2.3. Data collection and analysis

The research used primary data collected using household interviews (185) (see Table 2), 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 and those already resettled, 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. Focus group discussions (FGDs) were also organised in the Mpazi and Ndera 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 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 (Rakodi & Lloyd-Jones, 2002; Moser, 1998), 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.

3. Livelihood impacts of informal households’ displacement and resettlement in Kigali

This section discusses and compares the livelihood impacts experienced by informal households during two stages of their resettlement processes: the pre-relocation stage (3.1) and the post-relocation stage.
Focus group discussion at Mpazi site. Also perceived insecurity of tenure as result of the ambiguity of whether land was to be acquired by the private investors for further investments, engineer at the time of our fieldwork.

According to van Gelder (2007), involuntary relocation can lead to a perceived insecurity of tenure 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, the households cited uncertainty due to the risk of living in deteriorated structures with inadequate sanitation for basic needs. Second, the affected households 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.\(^2\)

### 3.1. Livelihood impacts in the pre-relocation stage

#### 3.1.1. 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, 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 the households located at high risk new that they don't have any right to compensation until the city authority recently decided that all the houses will at least be given land at a safe location.\(^2\) Second, the households who knew they would be compensated, for example, in Mpazi and Kangondo II, where the land was to be acquired by the private investors for further investments, also perceived insecurity of tenure as result of the ambiguity of whether their displacement was caused due to disaster mitigation or

\(^2\)The decision was made after our fieldwork as informed by the Kigali City engineer at the time of our fieldwork.

#### 3.1.2. Living in deteriorated structures and lack of toilets before relocation

The informal households to be displaced often had to endure the living in deteriorated structures with inadequate sanitation for their basic needs. The informal households to be displaced often had to endure the living in deteriorated structures with inadequate sanitation for their basic needs. 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.\(^3\)

\(^3\)Focus group discussion at Mpazi site.

### Table 4

| Livelihood capital | Actual pre-relocation impacts | Anticipated post-relocation impacts | Actual Post-relocation impacts |
|--------------------|-------------------------------|-----------------------------------|-------------------------------|
| Physical           | (-) Deteriorated structure of the houses Sanitation (-) Lack of toilets | (+) New shelter (-) Loss of a shelter, loss of houses for rent, rooms for home-based shops, operational space for other home-based businesses, live in overcrowding. (-) Increased distance to city centre, loss of access to education, healthcare, markets services. (-) Loss of access to water, electricity and public transport service | (+) New shelter (-) Lack of privacy (-) Lack of space for households' waste dumping (-) Increased distance to city centre, education and fair markets; lack of public transport, lack of water, lack of electricity |
| Financial          | (-) Decrease and potential loss of income from renting house; loss of many months' rentals (-) Loss of capital for investment; stop investments (-) Loss of access to credit from community groups | (+) Maintain access to wage-based income (-) Loss of income from renting houses, from home-based business, from wage employment, potential burden of bank loan: indebtedness. (-) Loss of business (-) Loss of savings | (-) Loss of income from wage employment, loss of income from self-employment (-) Loss of savings |
| Social             | Loss of social cohesion among the affected households (-) Community-based saving groups disrupted | (+) Maintain existing community-based mutual help and support. (-) Loss of existing community-based mutual help and support. (-) Loss of customer-seller networks (-) Loss of community-based saving groups | (-) Loss of existing community-based mutual help and support networks (-) Conflict/lack of cohesion among resettlers, loss of customer-seller networks and community-based saving groups |
| Human              | (-) Instability; uncertainty; stress and fear of the future (-) Food insecurity, reduced food consumption; change in family diet | (+) Maintain access to fresh and cheap food products (-) Loss of access to fresh and cheap food products; (-) Food insecurity; (-) Reduced food consumption; change in family diet. (-) Inability to use previously used skills in the new location (due to loss of job opportunities) | (+) Decreased stress related to shelter (-) Increased stress related to income, food and other basic need (-) Loss of access to fresh and cheap food products; food insecurity, reduced food consumption; change in family diet. (-) Inability to use previously used skills in the new location; loss of job opportunities |
| Natural            | (-) Perceived insecurity of tenure | (+) Live in safe and low risk location; improved living environment (-) Loss of land | (+) Live in safe and low risk location; improved living environment |

Note: (+) potential positive impact, (−) negative impact.

(3.2). Table 4 gives a summary of the identified impacts of displacement and resettlement on the livelihood of affected informal households.

### 3.1.3. 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 their basic needs. The informal households to be displaced often had to endure the living in deteriorated structures with inadequate sanitation for their basic needs. 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.\(^3\)
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?

3.1.3. 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 uncertainties 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 savings groups, due to their failure to make contributions.

3.1.4. 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 (Cernaia, 1997; 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.

3.1.5. 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 others 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.

3.2. Livelihood impacts in the post-relocation stage

3.2.1. 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 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 serious concern as it was among the factors that exacerbated conflicts (social disarticulation) among the settlers.

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.

3.2.2. 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 got 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.

3.2.3. 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 a 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 min 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.

3.2.4. Loss of employment and income after relocation

The majority of resettled heads of households lost their jobs, which led to a loss of income. As shown in Table 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 anticipate also 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.

3.2.5. 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 inexpensive products they buy in the informal businesses mostly available in inner cities, 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.

3.2.6. 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 depend 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 destruct 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 a high transportation costs while their income has decreased. It was also found that 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 to completely lose their existing social networks, including community-based savings groups and customer-seller networks.

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
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 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 address the root causes of the negative impacts of increasing urban population displacement.

Acknowledgements

The authors wish to thank all the individuals who participated in this study for their time and collaboration. Specifically, we would like to thank the staff in the City of Kigali who allowed us the opportunity to interview them and the community members in the study areas for their hospitality. We are also very grateful to the anonymous reviewers for their valuable and constructive comments for this paper.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.habitatint.2019.02.006.

References

Abebe, G., & Hesselberg, J. (2015). Community participation and inner-city slum renewal: relocated people’s perspectives on slum clearance and resettlement in Addis Ababa. Development in Practice, 25(4), 551–562. https://doi.org/10.1080/09614524.2015.1026878.

Burdge, R. J. (1987). The social impact assessment model and the planning process. Environmental Impact Assessment Review, 7(2), 141–150. https://doi.org/10.1016/0960-3189(87)90033-5.

Cernea, M. (1997). The risks and reconstruction model for resettled populations. World Development, 25(10), 1569–1587. https://doi.org/10.1016/S0305-750X(97)00054-5.

Choi, N. (2015). Impacts of displacement on urban livelihoods: a railway project in Metro Manila. Development in Practice, 25(3), 643–654. https://doi.org/10.1080/09614524.2015.1051948.

Choi, N. (2016). Metro Manila through the gentrification lens: Disparities in urban planning and displacement risks. Urban Studies, 53(3), 577–592. https://doi.org/10.1177/0042098015603322.

Clausdanos, P. (2014). Out of Harm’s Way: Preventive Resettlement of at Risk Informal Settlers in Highly Disaster Prone Areas. Procedia Economics and Finance, 18, 312–319. https://doi.org/10.1016/S2212-5671(14)00945-9.

Correa, E., Ramirez, F., & Sanabria, H. (2011). Populations at Risk of Disaster A Resettlement Guide. Washington DC: The World Bank and Global Facility for Disaster Reduction and Recovery.

Cronin, V., & Guthrie, P. (2011). Community-led resettlement: From a flood-affected slum to a new society in Pune, India. Environmental Hazards, 10(3), 310–326. https://doi.org/10.1080/17477891.2011.594495.

Davidson, F., Zaalij, M., Peltzsenburg, M., & Rodell, M. (1993). Resettlement and Resettlement manual: A guide to managing and planning resettlement. Rotterdam: Institute for housing and urban development Studies.

DFID (2001). Sustainable livelihoods guidance sheets. London: The Department for international development (DFID).

Dwivedi, R. (2002). Models and Methods in Development-Induced Displacement.
van Gelder, J. L. (2007). Feeling and thinking: Quantifying the relationship between perceived tenure security and housing improvement in an informal neighbourhood in Buenos Aires. *Habitat International*, 31(2), 219–231. https://doi.org/10.1016/j.habitatint.2007.02.002.

Goldman, M. (2011). Speculative Urbanism and the Making of the Next World City. *International Journal of Urban and Regional Research*, 35(May), 555–581. https://doi.org/10.1111/j.1468-2427.2010.01001.x.

Kigali city (2013). *Kigali city Master Plan*.

Kita, S. M. (2017). Urban vulnerability, disaster risk reduction and resettlement in Mzuzu city, Malawi. *International Journal of Disaster Risk Reduction*, 127, 15–74. https://doi.org/10.1016/j.ijdrr.2017.03.010.

Koenig, D. (2011). Multiple actors and contested terrains: Strategies of pro-poor action in contemporary urban restructuring. *Journal of Developing Societies*, 27(3–4), 327–353. https://doi.org/10.1017/S0169796X11027040.5.

Kohli, D., Sliuzas, R., Kerle, N., & Stein, A. (2012). Computers, Environment and Urban Systems: An ontology of slums for image-based classification. *Computers, Environment and Urban Systems*, 36(2), 154–163. https://doi.org/10.1016/j.compenvurbsys.2011.11.001.

Koirala, S., Hill, D., & Morgan, R. (2017). Impacts of the delay in construction of a large scale hydropower project on potential displacees potential displacees. *Impact Assessment and Project Appraisal*, 35(17), 1–11. https://doi.org/10.1080/14615517.2016.1271540.

Lall, S., & Deichmann, U. (2012). Density and disasters: Economics of Urban Hazard Risk Reduction, 22, 158–166. https://doi.org/10.1016/j.jldr.2012.03.010.

Li, S., & Song, Y. (2009). Redevelopment, displacement, housing conditions, and residential satisfaction: a study of Shanghai. *Environment & Planning A*, 41(1), 1090–1109. https://doi.org/10.1068/a4168.

Mantrarakia, V. (2014). Promoting inclusive approaches to address urbanisation challenges in Kigali. *African Review of Economics and Finance*, 6(1), 161–189.

Meredith, T., & Macdonald, M. (2017). Community-supported slum-upgrading: Innovations from Kibera. *Habitat International*, 60, 1–9. https://doi.org/10.1016/j.habitatint.2016.12.003.

MININFRA (2016). *National Informal Urban Settlement Upgrading Strategy*.

Mitra, S., Mulligan, J., Schilling, J., Harper, J., Vivekananda, J., & Krause, L. (2017). *MININFRA (2016).*

MININFRA (2013). *Urbanization and rural settlement sector: strategic plan 201213. 17/18.*

MININFRA (2014). *Fourth Rwanda Population and Housing Census.*

Mukhiguzi, S., & Song, Y. (2009). Redevelopment, displacement, housing improvement in an informal neighbourhood in Buenos Aires. *Habitat International*, 31(2), 219–231. https://doi.org/10.1016/j.habitatint.2007.02.002.

Patel, S., D'Cruz, C., & Burra, S. (2002). Beyond evictions in a global city: people-managed resettlement in Mumbai. *Environment and Urbanization*, 14(1), 159–172. https://doi.org/10.1177/09562478020140013.

Patel, S., Sliuzas, R., & Mathur, N. (2015). The risk of impoverishment in urban development-induced displacement and resettlement in Ahmedabad. *Environment and Urbanization*, 27(1), 231–256. https://doi.org/10.1017/S0956247815669128.

Quirinilino-Navarra, M., Niehof, A., Van der Horst, H., & van der Vaart, W. (2014). Short-term risk experience of involuntary resettled households in the Philippines and Indonesia. *Habitat International*, 41, 165–175. https://doi.org/10.1016/j.habitatint.2013.07.013.

Rakodi, C., & Lloyd-Jones, T. (2002). Urban livelihoods: A people-centred approach to reducing poverty. London: Earthscan publications Ltd.

REMA (2013). Kigali state of environment and outlook.

RHA (2013). Profiling and providing indication of the status quo and trends in informal settlement and propose mechanisms for their upgrading in Kigali city. (Kigali).

Robinson, C. (2003). *Risks and Rights: The Causes, Consequences, and Challenges of Development-Induced Displacement*. Washington DC: The Brookings Institution – SAIS Project on Internal Displacement,

Scudder, T. (1981). What It Means to be Dammed: the anthropology of large-scale development projects in the tropics and subtropics. *Engineering and Science*, 44(4), 9–15.

Stadler, L., Takano, G., & Hordijk, M. (2015). Mixed-use spaces and mixed social responses: Popular resistance to a megaproject in Central Lima, Peru. *Habitat International*, 45(3), 177–184. https://doi.org/10.1016/j.habitatint.2014.04.005.

Tadgell, A., Doberstein, B., & Mortsch, L. (2018). Principles for climate-related resettlement of informal settlements in less developed nations: a review of resettlement literature and institutional guidelines. *Climate & Development*, 10(2), 102–115. https://doi.org/10.1080/17565559.2017.1291401.

Terminski, B. (2013). Development-Induced Displacement and Resettlement: Theoretical Frameworks and Current Challenges. *Development, (May).*

Terminski, B. (2015). Development-induced displacement and resettlement: causes, consequences, and socio-legal context. Stuttgart: ibidem-Verlag.

Un-Habitat (2010). *The State of African Cities 2010: Governance, Inequality and Urban Land Markets*. Nairobi: UNON/Publishing Services Section.

Vickery, J. (2017). Urban Resettlement in Colombo from a Wellbeing Perspective: Does Development-Forced Resettlement Lead to Improved Wellbeing? *Journal of Refugee Studies*, 30(4), 554–579. https://doi.org/10.1342/03048816WR08.

Viratkapan, V., & Perera, R. (2006). *Slum relocation projects in Bangkok: what has contributed to their success or failure? Habitat International*, 30(1), 157–174. https://doi.org/10.1016/j.habitatint.2004.09.002.

Wang, X., & Ausi, N. (2018). *Paradox between neoliberal urban redevelopment, heritage conservation, and community needs: Case study of a historic neighbourhood in Tianjin, China. Cities*. (July), 0–1 https://doi.org/10.1016/j.cities.2018.09.004.

Watson, V. (2014). African urban fantasies: Dreams or nightmares? *Environment and Urbanization*, 26(1), 215–231. https://doi.org/10.1177/0956247813513905.

Wu, F. (2004). Residential relocation under market-oriented redevelopment: The process and outcomes in urban China. *Geoforum*, 35(4), 453–470. https://doi.org/10.1016/j.geoforum.2003.10.001.