Who is in 'the Public'?
Infrastructure of Displacement and Urban Resettlement in Mozambique

KEI OTSUKI

This paper explores possibilities of inclusive urban development by examining the relationships between physical infrastructure, displacement and resettlement. It pays particular attention to the notions of 'development' and 'the public'. Infrastructure as public works often justifies the displacement of people for the sake of the wider population's 'development'. It can also serve to benefit the displaced people if it includes them in the 'public' that participates in the 'development', especially in the form of ensuring a sound resettlement experience. The question is: how can this inclusion be envisioned and practised? To answer this question, this paper examines recent experiences of development-induced displacement and resettlement in Mozambique by using two examples: the Maputo–KaTembe bridge and its resettlement programme, as debated at the recent National Conference on Resettlement and in published sources, and the resettlement programme of the Limpopo National Park, based on primary field research. The paper analyses these resettlement experiences through three major accounts of infrastructure centred on state-building and formalization, co-production and heterogeneity, and open source and sharing urbanism. The paper argues that recognizing the heterogeneity and sharing aspects of infrastructure development in the post-resettlement context is key to reconstituting the public and promoting inclusive urban development in the major infrastructure development that accompanies displacement and resettlement.

In a recent report, the World Bank reminds governments and private investors of the importance of developing physical infrastructure – such as roads, railways, bridges, water and sanitation, and energy systems – for sustainable development in Africa (World Bank, 2017*b*). Such an emphasis is in line with the United Nations' Sustainable Development Goal number 9, which highlights the need to mobilize financial flows and expert knowledge in order to build 'resilient infrastructure, promote inclusive industrialisation and foster innovation' by 2030 (United Nations, 2016). In addition, the New Urban Agenda, which came into effect in 2016, justifies new masterplans to build infrastructure corridors to realize sustainable urban development (UN-Habitat, 2016; Zoomers *et al.*, 2017).

At the same time, recent studies on 'urban land grabs' have shown that infrastructure development can become one of the major causes of dispossession of land and means of livelihood, especially for the urban poor (Steel *et al.*, 2017; Zoomers *et al.*, 2017). The urban poor are often found in densely populated informal settlements and, without formal ownership or entitlement to the land on which they reside, they are an easy target for eviction and thus displacement and involuntary resettlement (van Noorloos *et al.*, 2018). With the renewed international commitment to infrastructure development, so-called development-

induced displacement and resettlement (here-after, DIDR) caused by infrastructure projects is expected to be on the rise, exacerbating the problem of urban land grabbing (Cernea and Maldonado, 2018).[1]

While promoting infrastructure development, the World Bank is eager to address problems that DIDR might cause. It has recently proposed a new framework to safeguard displaced populations, reframing the earlier involuntary resettlement guidelines known as OP4.12 into the new Environmental and Social Framework and Environmental and Social Standard 5 (World Bank, 2017a).[2] They oblige all Bank-financed projects to hold public consultations and promote livelihood reconstruction in the post-resettlement context. Yet, as Koenig (2018) highlights, actual implementation still pays insufficient attention to non-land based compensation and urban livelihood restoration, or to systematically helping to rebuild resettled communities in the long run. It is also unclear how these international standards should be enforced in domestic and entirely private business-oriented infrastructure projects that cause displacement (De Wet, 2005).

This paper argues that addressing these problems requires the researcher to explore the underlying question of what infrastructure development actually means for displaced and resettled people and their livelihoods. The infrastructure in general is equated with *public* works, while displacement happens because some people are treated as being 'in the way of someone else's plans for development' (Oliver-Smith, 2010, p. 84) or are excluded from the public. At the same time, involuntary resettlement is officially 'conceived and executed as development programmes' (Koenig, 2001, p. 19), indicating that the infrastructure of resettlement can serve for the development of displaced people if appropriately framed and supported as a part of livelihood reconstruction and community rebuilding. In other words, the infrastructure of resettlement needs to reconstitute the public, including the displaced people, to be able to claim their own development plans. The question is: how can this inclusion – and reconstitution of the public – be envisioned and practised?

To answer this question, this paper examines two examples of DIDR in Mozambique. By using expert debates and interviews recorded at the National Conference on Resettlement held in November 2018 and in published sources, one example shows the infrastructure of displacement observed in the construction of the Maputo–KaTembe bridge. The other draws on field research conducted in 2015 and 2018 in the Massingir district of Gaza province, where the infrastructure of resettlement is rapidly urbanizing the district centre due to the resettlement programme of the Limpopo National Park. The paper pays particular attention to the concept of urban resettlement in Mozambique, which takes place as an outcome of displacement both within and outside cities, causing urban development. The paper then analyses the urban resettlement experiences through three major accounts of infrastructure centred on: state-building and formalization; co-production and heterogeneity; and open source and sharing urbanism. The paper suggests that recognizing the heterogeneity and sharing aspects of infrastructure development in the post-resettlement context is key to reconstituting the public and promoting inclusive urban development in major infrastructure development that accompanies displacement and resettlement.

Before exploring Mozambican experiences, however, the paper needs to establish the relationships between infrastructure, development and the public in order to specify what the focus on infrastructure specifically seeks to address in the context of DIDR and urban land grabbing debates.

Infrastructure, Development and the Definition of the Public

Infrastructure is 'the basic physical and organizational structures and facilities (e.g. buildings, roads, power supplies) needed for the

operation of a society or enterprise' (Oxford Living Dictionaries, 2018). It is often synonymous with public works and, in the post-independent African context, it is directly related to the making of a new national society and the national public. The World Bank and regional development banks have financed infrastructure for state-building that continues to be underpinned by the 'modernization ideal' (Graham and Marvin, 2001, p. 21).

Historically, when post-independent modernization began in the 1960s, 'development' was clearly for the powerful in African cities (Rakodi, 2006). The large-scale infrastructure projects for development were 'planned in the belief that benefits would 'trickle down'' from the targeted public to the less powerful who had originally been excluded from the public (Koenig, 2001, p. 19). In other words, infrastructure for development was an exclusionary construction.

During the 1970s, anthropologists started to note that such infrastructure projects not only excluded but also negatively affected a large number of indigenous populations, primarily by displacing them without any protection. They began to advocate the outlining of clear international guidelines to safeguard displaced people and help restore their livelihoods in involuntary resettlements (Colson, 1989). In 1980, 'the World Bank first adopted its policy on involuntary resettlement' (World Bank, 2004). The policy became the widely-adopted Operational Directive for Involuntary Resettlement (known as OP4.12), which preceded the latest Environment and Social Framework and ESS5. These guidelines established DIDR as a concept (see Oliver-Smith, 2009 for a comprehensive overview of the anthropological conceptualization of DIDR). Infrastructure development projects which displace communities should now include resettlement programmes that duly consider potential risks and support mechanisms for the reconstruction of the displaced communities (Cernea, 2000; De Wet, 2005).

Infrastructure development currently in-

volves the participation of private businesses or takes the form of co-production underpinned by public–private partnerships (e.g. Otsuki and van Helvoirt, 2017). Various actors can participate in the co-production, including landed citizens, non-governmental organizations and private businesses, as well as governments at different levels acting in both formal and informal spheres (Mitlin, 2008; Watson, 2014). The market-driven provision of 'public good' has long been justified (Bear and Mathur, 2015). Reflecting this trend, the international DIDR guidelines are also recommended for non-Bank related infrastructure projects that induce displacement and resettlement. In addition, the infrastructure of resettlement – for example housing and basic utilities such as water and energy – became an important way to include displaced people in development plans. As recently observed in China, 'Resettlement with Development' has been envisioned in development policies of many countries (Padovani, 2016).

In this process, various publics are produced and experience different patterns of exclusion and inclusion (Warner, 2002). This is because when infrastructure that resettles displaced people needs to be developed, who defines the public is often elusive. This is particularly problematic in urban resettlement. As Koenig (2018) points out, the reconstruction of livelihoods in the post-resettlement situation still focuses on land-based strategies (e.g. Lassaily-Jacob, 1996), drawing heavily on earlier experiences of resettlement practised in state-led dam construction or mining operations, which mostly affected farmers (Downing, 2002). As recent infrastructure development can produce publics with various vocations and circumstances, involving urbanization, the reconstruction of livelihoods requires contextual, processual and flexible material as well as psychological support for people with different needs (Downing and Garcia-Downing, 2009).

Consequently, the infrastructure of development for resettled people should be more than the housing and basic utilities that are

usually covered in the initial compensation package. As resettlement involves 'adaptation to new land and new communities', as well as new job opportunities or a lack thereof, the progressive development of infrastructure for the adaptation is imperative (Abutte, 2000, p. 413). This means that we need to pay attention to the ongoing struggles of the resettlers, who are often forced to obtain their own infrastructure, become a public and claim their own inclusive development. In other words, the infrastructure of resettlement needs to be framed as the infrastructure that allows the displaced (i.e. excluded) citizens to pursue political equality on their new land.

In order to explore the possibility of such a reframing of infrastructure of development, this paper now considers resettlement experiences in Mozambique.

Background and Methodology

In 1975, Mozambique became independent from Portugal. The new capital of Maputo then became a centre of African socialism. The president, Samora Machel, envisioned the country's nation-state building through infrastructure development while nationalizing its territory. In 1989, the World Bank endorsed government plans 'for an improved transportation network as part of Maputo's urbanization policy' (Daniel, 2018). However, Mozambique's civil war prevented the execution of the plans. When the war finally ended in 1992, Mozambique was one of the poorest countries in the world. In order to accelerate the reconstruction and development, the government turned to international aid and structural adjustment. During the mid-2000s, the country became one of the 'fastest growing frontier markets' and attracted foreign business investments (The Economist, 2014). The expansion of frontier markets has accompanied infrastructure development both in rural and urban contexts and has led to the displacement of communities (Kirshner and Power, 2015).

Following the end of the civil war, Mozambique developed relatively progressive land laws, such as the Land Act (1997) and the Land Regulation (1998), which obliged the state to ensure that private investors conduct community consultation and comply with the principle of free, prior and informed consent (Art. 13, Land Act 19/97). In 2012, revised legislation governing the 'process of resettlement caused by economic activities', which is to be complied with by business investors (Decree No.31/2012), came into force. Under the legislation, the Ministry of Land, Environment and Rural Development (MITADER) is fully responsible for approving resettlement plans, which the investing parties need to present based on *public* consultations with the potentially affected people.

Thus, Mozambique is making an effort to include displaced people in the public and to allow them to plan their own development, thereby attracting scholars interested in improving DIDR experiences in Africa (e.g. van der Ploeg, 2018). In 2016, the MITADER held its first biennial National Resettlement Conference to discuss this potential reconstitution of the public through DIDR. In November 2018, the latest resettlement report was discussed at the second conference, in Chibuto in Gaza Province.[3] According to this report, fifty resettlement projects have been executed across the country since 2010, and 20,000 families have been displaced (Wetela, 2018).[4] While the majority of the projects are at mineral extraction and agribusiness sites, transportation infrastructure, tourism and new masterplans for sustainable urbanization have been leading to new resettlement projects in major cities like Nampula, Beira and Maputo (e.g. Shannon *et al.*, 2018). These cities have become hubs of the so-called growth corridors and, within these cities, special economic zones are designated, involving international donors, investors and governments at different levels in the resettlement projects. Public–private partnerships are the usual mode of current infrastructure development.

The Maputo–KaTembe bridge is one of the resettlement projects that was discussed at the conference. The bridge, which was opened in November 2018 (a week after the conference), and the extended highway displaced 900 households that had been 'in the way'. Below, based on discussions and expert interviews recorded at the conference, we show how the infrastructure of displacement is typically framed while little attention is paid to the infrastructure of resettlement. The discussion on the bridge is followed by one on a resettlement programme carried out by the National Conservation Agency in Massingir district, where the field research was conducted in 2015 and 2018. Here, the resettlement of people from the Limpopo National Park has been shaping an urban resettlement of fifty-two households, called Macavene-Tihovene. The researcher followed the process of infrastructure development through participant observation and the interviewing twenty-five household representatives. The following describes practices of building and connecting basic and social infrastructure and problematizes how little systemic attention is paid to this spontaneous process.

Infrastructure of Displacement: The Maputo–KaTembe Bridge

In 2011, China announced it would fund the construction of the Maputo–KaTembe bridge as part of Maputo Bridge and Link Roads project, which made Maputo part of the southern African growth corridor. A year later, the China Export-Import Bank loaned the Mozambican government US$750 million to construct the 'largest suspension bridge' in Africa, whose overall cost was estimated to be US$1,040 million, making it the biggest infrastructure investment in Mozambique (Club of Mozambique, 2016). The Ministry of Public Works and Maputo Sul Development Corporation oversaw the construction by the Chinese Road and Bridge Corporation and ultimately the management of the bridge,

which finally opened in November 2018 after several delays. The public targeted by the bridge comprises commuters and tourists who need to cross the channel between Maputo and KaTembe, the gateway city to coastal tourist destinations in South Africa. The business model builds on a toll of US$2.60 to cross the 2.5 km bridge, with an estimated 5,000 vehicles using the bridge each day, to repay the loan in 20 years (China Lusophone Brief, 2018).

At the Resettlement Conference, the representative of Maputo Sul Corporation said that the delayed opening of the bridge was a result of the need to resettle around 900 households (Magaia, 2018). The resettlement plan had been proposed by the corporation and approved by the MITADER, but some households had resisted resettlement due to a dispute over compensation and the failure to guarantee the same business opportunities in the new settlement. As the land entitlement is not clear in some of the informal settlements that are targeted for displacement, the resettlers also complained that the compensation was too little.[5]

Although the corporation claimed that the resettlers' resistance was the major problem, one report says that Maputo Sul lacked funds, and that its plan to raise funds by developing the surrounding real estate, or granting land licenses to public companies that would operate in areas developed by the bridge and roads, had not progressed (China Lusophone Brief, 2018). As a result, households that would lose their business opportunities by being relocated from the city centre to the outskirts of Maputo were understandably worried about not receiving enough compensation to guarantee their post-resettlement livelihoods' reconstruction.

Despite the contentions, the Maputo Sul representative explained that the resettlement process had been successfully completed in urban areas. The MITADER confirmed that the urban resettlements had been successful. However, those who had to be relocated to rural areas still lacked the basic infra-

structure, and the compensation package was fiercely contested (Wetela, 2018). In order to restore livelihoods far away from where many had their market stalls in the centre of Maputo, the resettlers would have to reorganise themselves to engage in farming in their rural resettlement or in expanding urban activities around it. This livelihood reconstruction would require new resettlement infrastructure, which needed to be closely monitored and, when necessary, supported. As Maputo Sul lacks the funds and expertise, it was unclear how much the company would be able to support such infrastructure.

The bridge thus currently looks like a typical example of infrastructure that justifies the displacement of citizens for someone else's development (figure 1). The infrastructure of resettlement could emerge with both urban and rural characteristics, and how this develops can be observed in older resettlement programmes, for example that in Massingir, Gaza Province.

Infrastructure of Resettlement:
New Settlements in Massingir District

The Massingir district of Gaza Province is considered to be one of the largest DIDR frontiers in Mozambique. In 2001, it surrendered 60 per cent of its territory to the Limpopo National Park, which decided to relocate 1,500 households on the list of the National Conservation Agency, which oversees the park and its resettlement programme. The district agreed to resettle the households displaced from the park in its reduced territory in the expectation that it would get revenues from tourism to compensate for its 'poor agroecological conditions' (Ministry of State District, 2005, p. 4). While the park is not strictly an infrastructure project, its large resettlement scheme illustrates new experiences of infrastructure development. By 2018, three communities had been resettled; five more communities are to be resettled in 2019.

While all the resettlements are treated as rural resettlements (and thus the land-based strategy should be applied), one of the earlier ones – Macavene-Tihovene – chose to be an urban resettlement. This legally means that they would receive less land for farming or grazing cattle, but gain proximity to the city. Living without any improved basic facilities within the park, the community members were easily convinced when the resettlement officers offered each community member a concrete (and thus modern and good) house

Figure 1. Samora Machel overlooking Maputo-KaTembe Bridge.

and access to tap water and electricity as compensation for their residence, farm and grazing land. The community leader of Macavene-Tihovene insisted on ensuring the provision of the basic infrastructure by resettling close to the urban centre and convinced the park to look for land near the city centre of Massingir for the fifty-two families that had decided to follow him, contrary to the initial plan proposed by the park.

After resettlement was completed, the resettlers of Macavene-Tihovene soon found that the infrastructure included in the compensation package was of insufficient quality: the houses were too small, a communal water tap soon malfunctioned and electricity was never connected. Struggling to create liveable conditions, the community leader and his two wives became house builders, adding houses to the originally provided houses in their community. The leader also mobilized the resettlement committee, gathering community leaders of all the resettlements on the park's list, in order to negotiate for the water and electricity connection. This mobilization strengthened the resettlers' positions as publics who demand their fair share of development.

At the same time, the resettlers learned that being connected to the networked official infrastructure meant that they had to earn money to pay for the services provided. In the urban resettlement with reduced opportunities for farming, men mostly set off to do seasonal work on plantations in South Africa; women worked on other people's farms nearly 10 km away for a few dollars a day or engaged in the petty business trade. In addition, there is currently a construction boom in Massingir, for upcoming resettlements. A Portuguese construction company employs workers in the city to build houses and extend basic networked infrastructures to new resettlements. Urbanization proceeds in this process, and even when the land-based strategy is envisioned for farmers displaced from the park who wish to resettle in rural areas, land for farming is becoming scarce. The livelihood reconstruction thus currently

depends on construction work, outmigration or charcoal making, which is based on deforestation and leads to the depletion of natural resources.

Meanwhile, the infrastructure of resettlement continues to be improvised and negotiated by the resettlers themselves. They have learned to install better water taps (figure 2), beyond the initial compensation package. The electricity connection depends on the individual's capacity to top up the pre-paid meter, and most resettlers installed the equipment. But they need infrastructure of resettlement that ensures livelihood reconstruction without depending on the temporary works and the natural resource depletion.

Discussion: Towards Resettlement Induced Inclusive Urban Development?

The slogan of the 2018 National Resettlement Conference was 'For a Process of Resettlement That is Inclusive, Secure, Resilient and Sustainable', echoing the Sustainable Development Goals. However, as the examples of the bridge and resettlements from the National Park have shown, very little was discussed about post-resettlement strategies, especially with regards to using the infrastructure of resettlement for the reconstruction and development of resettled people's livelihoods on their new land. In addition, urban resettlement often requires a non-land-based strategy of livelihood reconstruction (Koenig, 2001; 2018). The jobs and entrepreneurial opportunities become vital, not only for livelihood reconstruction but also for paying for connection to basic, formal infrastructure in urban areas. Being unable to pay, resettlers can improvise and obtain their own infrastructure, and this needs to be understood and supported.

Theoretically, this means that it is important to frame the infrastructure of displacement and urban resettlement in relation to the definition of the public and their entitlement to infrastructure and development. A review of three major accounts of infrastructure can help us to locate the Mozambican experiences

Figure 2. Resettlement leader showing off new water tap.

in theoretical perspectives: (1) centralization and formalization; (2) co-production and hetero-geneity; and (3) open and sharing urbanism.

1. Centralization and Formalization

As Samora Machel envisioned developing newly independent Mozambique through transportation infrastructure and urbanisation policy, the physical infrastructure was primarily meant to ensure the smooth operation of a new and modern nation-state society (cf. World Bank, 2018). This has led to the infrastructure of displacement, but also resettlement. In the 1980s, for example, Mozambique's socialist government advanced its collective villagization programme, based on the idea that clustering scattered households would help enhance the

'social power' of the public – in particular the poor – as it facilitates the construction and the connection of the settlements to the networked infrastructure (Freedman, 1980). Today's urban resettlement still reflects the idea that neighbourhoods and communities need to be clustered and reorganized to develop a nation-state (Arce, 2003), and infra-structure is used for this development.

In other words, infrastructure is primarily intended to justify the 'bureaucratic institu-tionalization' of producing 'public goods' among the new citizen communities (Dore, 1981, p. 18). In this process, the 'quality of networked infrastructures and the degree of social and geographical access to them has a huge impact on distributional justice' (Monstadt, 2009, p. 1934). The citizens who

can access good quality networked infra-structures constitute the public that deserves public goods, while those who are not entitled to access the public infrastructures are placed under the 'policy of benign neglect' (Arimah, 2010, p. 145). Less powerful indigenous populations and groups are prone to displacement or resettlement in poor conditions.

When neoliberal structural adjustment policies were introduced in the late 1980s, the neglected populations in cities became informal citizens who should be formalized in order to contribute to national and global economic growth (De Soto, 2000; Casson *et al.*, 2010). Displacement was justified because informal settlers did not have property rights and resettlement would enable them to have formal access to land and networked infrastructure. In practice, as Roy (2005) points out in the context of India, informality is arbitrarily used in pursuing the state's and donors' development plans. It is sometimes used to evict people who are in the way of the development plans, while formalization can also be seen as the inclusion of the neglected populations in the public.

This means that infrastructure works to visualize a division between the public that receives official infrastructural benefits and citizens who are expected to endure negative impacts such as eviction. Meanwhile, the structural adjustment and attraction of business investments – such as foreign investors and the constructors of infrastructure – diversify the actors involved in 'wealth redistribution' when the government plans and implements the infrastructure (Ostrom *et al.*, 1993, p. 17). In this context, the concept of co-production has been popularized.

2. Co-Production and Heterogeneity

Co-production originally referred to a process through which various governmental institutions and their experts collaborate, with a view to decentralizing the management of networked infrastructure and shaping polycentric institutional arrangements (Ostrom,

1996). Currently, however, co-production largely refers to 'the joint production of public services between citizen and state, with any one or more elements of the production process being shared' (Mitlin, 2008, p. 340). The citizens' involvement in producing infra-structure is considered to be a pragmatic solution to the persistent deficiency of the centralized and formal infrastructure that should primarily be provided by the central government. For example, the United Nations argues that participatory programmes are 'the only viable' and realistic way to improve the living conditions of people who live outside the official grids of public service provisions in cities (UN-HABITAT, 2003, p. 5).

Such a participatory co-production can work in two ways in the case of DIDR. First, the infrastructure of displacement, such as the bridge, can be framed as the construct of public–private partnership (PPP). The promotion of PPP has changed the 'modes of governing' the infrastructure, giving more power to private actors involved in public infrastructure projects (Howell, 2015). In the case of the bridge, the public is the government and the state company (Maputo Sul), while the Chinese company built the actual infrastructure under contract. The roles of the displaced citizens in this partnership are not considered.

Second, when the displaced people are included in the PPP, they tend to be conflated with the private sector, including non-governmental advocacy organizations that work with or often represent resettlers in public consultations. They are thus expected to privately acquire and manage their infra-structure of resettlement based on what they have been provided with by the state or the company whose resettlement plan has been approved. In this process, they turn themselves into a public in order to fully participate in the infrastructure production.

The emergence of the public from the resettlement experiences leads to a complex situation where urban scholars encounter the 'heterogeneity' of infrastructure development

and new 'configurations' (Lawhon *et al*., 2018). The heterogeneity is a result of both centralization and co-production (Jaglin, 2014). The resettlers obtain what is needed in the absence of centralized infrastructure while learning to demand that the government and businesses provide the infrastructure. We therefore need to study the types of power relations and risks associated with various constellations of centralized and co-produced infrastructure (Howe *et al*., 2016; Lawhon *et al*., 2018). In other words, resettlers as co-producers can be conceptually recognized as local agents who are capable of claiming, producing and governing infrastructure in their new settlement. However, co-production also means that the central government assigns the responsibility for the quality service provision to various actors in the partnership, including the resettlers themselves. This makes it difficult for the resettlers as publics to ensure the accountability for their own development.

3. *Open Source and Sharing Urbanism*

The difficulty of ensuring the accountability of actors involved in the co-production stems from the historically inherent political inequality between citizens and more powerful actors (e.g. Watson, 2014). As those displaced by infrastructure projects are usually less powerful groups of citizens, to pursue political equality in infrastructure development requires an understanding of who actually leads the process of developing infrastructure and 'enhances the autonomy' of the emerging publics (Bulkeley *et al*., 2018).

Drawing on experiences of open technology, by which citizens 'wire the landscape of their communities with the devices, networks, or architectures' (Corsín Jiménez, 2014, p. 342), recent discussions on open source urbanism suggest considering infrastructure development as neither what generates benefits *for* the public (as seen in the centralization) nor what takes place *with* the public as seen in co-production. They argue that it should

be pursued *by* the various publics, including those who envision a shaping of a new society, such as resettlers.

Open source urbanism becomes possible when the process of infrastructure development is made public so that anyone can observe, intervene in or imitate production. This is contrary to infrastructure that does not usually expose the process of construction, standardization and utilization to the public, since it involves different types of experts who put the process into a 'black box' (e.g. Leigh Star, 1999). Calling for the 'white-boxing' of the process, open source infrastructure is an idea that admits its 'own fragility and precariousness' and retains the status of being a 'prototype' (Corsín Jiménez, 2014, p. 349). Here, the publics are also those who finance, develop their expertise, produce and create the prototype according to their own preference and the expressed community interest. They continually interact with the infrastructure and form the vanguard of auto-constructionism.

In the context of resettlement, the process of open source urbanism is widely observed, even though resettlers are largely forced to experiment with their own infrastructure development in the absence of the state or the responsible business. The community leader of Macavene-Tihovene, for example, deliberately publicized the auto-construction of houses in addition to the officially provided houses so that others could see and imitate such construction. The open source urbanism also provides resettlers with opportunities to consult with each other in order to share responsibility for the construction and infrastructure management.

By observing how resettlers design and rebuild their lives and infrastructure after resettlement, we can understand more comprehensively what kind of infrastructure is needed for their livelihood reconstruction and reduction of risks of impoverishment (cf. Cernea, 2000). In this sense, open source urbanism pays attention to the ways in which individuals and various social groups deal

with the physical spatial change and available materials, reflect on the meaning of their own involvement in infrastructure development and share their experiences with others.

The sharing of reflections on the experiences of building and governing infrastructure strengthens a community in which knowledge is distributed and new actions taken (cf. Freire, 2003 [1930]). And sharing as a paradigm is reshaping 'the public realm', which has been privatized (McLaren and Agyeman, 2015, p. 4). The infrastructure development in resettlement has this aspect of the sharing and rebuilding of the community. This ultimately transcends formality and informality or public and private.

At this point, the question is whether governments and private business actors can become fully responsible for supporting the infrastructure development emerging from the resettlers as new publics. This is especially a pertinent question when we pay particular attention to urban resettlement.

The Infrastructure of Urban Resettlement

Urban resettlement can lead to urbanization by resettlers as new publics. The urban land grabbing debate has not paid sufficient attention to the possibility of repossession *after* dispossession has taken place. This is presumably because pursuing political equality has never been a part of city planning or infrastructure development, and thus scholars tend only to highlight its exclusionary nature. As Lake (2017) emphasizes, city planning that induces infrastructure development, and often displacement, is a universalized, project-delimited and largely expert-driven process. The experts evaluate experiences of co-production and public participation after they are implemented, but they seldom use these experiences as the starting point when outlining new development plans.

In addition, even rural projects such as the establishment of conservation areas or national parks, as seen in the Limpopo National Park, can lead to urbanization when the displaced

people opt for urban resettlement. Their experiences of open and sharing urbanism can be used for new resettlements that can expand peri-urban conditions. This is because infrastructure development is based on Cartesian thinking: first, experts or politicians plan for development and implement their plan, and then they evaluate the results of the implementation. Although public participation in the form of consultation and co-production is encouraged in this process, the planning process itself does not change. The spontaneous coping and autonomous seeking for infrastructure development are not taken seriously even though they are the primary source of local agency and conditions for survival in the absence of state funds or political will (Abutte, 2000).

In principle, resettlers as ordinary citizens and autonomous publics 'do not and cannot know everything that is going on', but they 'continue to do what they can about what they care about most in circumstances not of their making or choosing' (Archer, 2007, pp. 17–19). This means that they first experience the lack of quality infrastructure *anyhow*, continue evaluating the situation, take further action and reflect upon the action experience. The justice-seeking strategy will emerge from this process, by articulating new demands for political commitment. In this sense, infrastructure development, or the displacement and resettlement induced by it, is highly contextual and processual, as well as essentially political (e.g. Amin, 2014; Simone and Pieterse, 2017).

In this vein, anthropologists are now debating whether infrastructure is a political subject (e.g. Venkatesan *et al.*, 2018). In the context of resettlement, infrastructure enables everyday 'mundane' communications by which political equality is envisioned and the public reconstituted (Lemonnier, 2012). Following Benett (2010, p. 100), who cites John Dewey, 'a public … [is] … a confederation of bodies, bodies pulled together not so much by choice … [but] … by a shared experience of harm that, over time, coalesces into a "problem"'.

Resettlers as a public are 'not under the control of any rational plan or deliberate intention' but keep taking conjoint actions with others in response to emerging problems and the materiality of circumstances (Benett, 2010, p. 100). Urban resettlement is a place where such a political process happens vividly through infrastructure.

Once a public is produced through urban resettlement, it becomes a part of the mixture of the human and non-human collective that 'binds us to the world in movement and keeps the world particularly bound to itself' (Berlant, 2016, p. 394). As de Boeck (2012) writes of the city of Kinshasa:

[what constitutes the city is] not one public realm … but a diversity of publics and public spaces, things (material infrastructures), words (verbal architectures), and bodily functions. Together, all of these elements make up the social machine of the public realm as the sum of different collective experiences in which individual survival is made possible or, by contrast, is constantly made impossible.

The city of Maputo – or Massingir, or any other area where resettlement projects are implemented – thus contains various publics, things, words and bodily functions. The role of the government, businesses and donors is to accompany and keep on planning alongside this continually emerging and rearticulating public realm. For this, the capacity of municipality and district government in Mozambique is of particular importance, as it defines the direction of potentially and genuinely inclusive and sustainable urban development, induced by displacement and resettlement.

Conclusion

This paper explored the relationship between infrastructure, displacement and resettlement in order to clarify the causes and consequences of urban land grabbing and to frame inclusive urban development. The objective was to establish a clear linkage between infrastructure, development and the public.

It drew on resettlement experiences in Mozambique where infrastructure development continues to displace urban citizens while resettlement programmes lead to new infrastructure development that requires more attention and political commitment.

The paper argued that the infrastructure of displacement shows that it is built *for* the public, although this excludes those who happen to be in the way of the actual infrastructure construction. Such an exclusionary infrastructure is increasingly co-produced through public–private partnerships. The co-production ideal, however, has led to the involvement of citizens, and thus the infrastructure is constructed *with* the public. Here, the infrastructure of resettlement can be envisioned as that which includes the displaced as the public, although this inclusion remains elusive. Thus, the paper further examined the potential of open and sharing urbanism in which infrastructure is developed *by* the public. In this framing, the resettlers constitute new publics in urban resettlements.

If we imagine a city as a sum of various collective experiences, it presents a heterogeneous urban and infrastructure landscape. In this landscape, open source infrastructure enables publics to experiment with materiality and become reflexive so that they survive their exclusion in creative ways through the constant sharing of their deliberations. Thus, this paper concludes that we need to pay more serious attention to heterogeneity and open source urbanism in order to address distributive justice and inclusivity of urban development.

In practice, displacement experiences and actual resettlement projects provide an opportunity to observe the ways in which different definitions of 'the public' are used and contested. The resettlers need conceptually to become autonomous citizens and to constitute publics as they cope with the absence of the state and struggle with acquiring the materials required to reconstruct their infrastructure and livelihoods. More systemic research should be carried out to clarify the

workings of the infrastructure of displacement and resettlement in relation to a variety of land acquisition practices and investment patterns. The urban resettlement is of particular interest, as African urbanization is rapidly accelerating (Parnell and Pieterse, 2014), providing the possibility to both exclude and include various publics.

NOTES

1. There are different ways to express 'development' as economic activities induces or forces displacement and resettlement. For example, in the most recent publication on development and resettlement caused by development projects, Cernea and Maldonado (2018) use the term 'development-caused forced displacement and resettlement' (DFDR, see also Oliver-Smith, 2009). Here, I use DIDR to follow the dominant usage of the term in academic and policy literature (e.g. De Wet, 2005; Satiroglu and Choi, 2015).

2. This is based on the Performance Standard 5 (Land Acquisition and Involuntary Resettlement 2012) of the International Finance Corporation within the World Bank Group.

3. Chibuto hosts a new Chinese-owned heavy sand mine and a resettlement programme of 480 households is under way.

4. The numbers of resettlement projects and resettled people are increasing at the time of writing.

5. As Mozambique had nationalized its land during the socialist regime, people are officially all on 'public' land without private ownership (but with user rights). Here, the concept of 'informality' is used as a political language to justify displacement.

REFERENCES

Abutte, W.-S. (2000) Social re-articulation after resettlement: observing the Belles Valley scheme in Ethiopia, in Cernea, M. and McDowell, C. (eds.) *Risks and Reconstruction: Experiences of Resettlers and Refugees*. Washington DC: World Bank, pp. 412–430.

Amin, A. (2014) Lively infrastructure. *Theory, Culture & Society*, **31**(7/8), pp. 137–161.

Arce, A. (2003) Value contestations in development interventions: community and sustainable livelihoods approaches. *Community Development Journal*, **38**(3), pp. 199–212.

Archer, M.S. (2007) *Making Our Way through the World: Human Reflexivity and Social Mobility*. Cambridge: Cambridge University Press.

Arimah, B.C. (2010) The face of urban poverty: explaining the prevalence of slums in developing countries, Beall, J., Guha-Khasnobis, B. and Kanbur, R. (eds.) *Urbanization and Development: Multidisciplinary Perspectives*. Oxford: Oxford University Press, pp. 143–164.

Bear, L. and Mathur, N. (2015) Remaking the public good: a new anthropology of bureaucracy. *The Cambridge Journal of Anthropology*, **33**(1), pp. 18–34.

Bennet, J. (2010) *Vibrant Matter: A Political Ecology of Things*. Durham, NC: Duke University Press.

Berlant, L. (2016) The commons: infrastructures for troubling times. *Environment and Planning D*, **34**(3), pp. 393–419.

Bulkeley, H., Luque-Ayala, A., McFarlane, C. and MacLeod, G. (2018) Enhancing urban autonomy: towards a new political project for cities. *Urban Studies*, **55**, pp.702–719.

Casson, M.C., Giusta, M.D. and Kambhampati, U.S. (2010) Formal and informal institutions and development. *World Development*, **38**(2), pp. 137–141.

Cernea, M. (2000) Risks, safeguards, and reconstruction: a model for population displacement and resettlement, in Cernea, M. and McDowell, C. (eds.) *Risks and Reconstruction: Experiences of Resettlers and Refugees*, Washington DC: World Bank, pp. 11–55.

Cernea, M. and Maldonado, J. (eds.) (2018) *Challenging the Prevailing Paradigm of Displacement and Resettlement: Risks, Impoverishment, Legacies, Solutions.* London: Routledge.

China Lusophone Brief (2018) Further delays for the Maputo-Catembe Bridge. 4 July. Available at: https://clbrief.com/further-delays-for-the-maputo-catembe-bridge/.

Club of Mozambique (2016) Maputo-Catembe Bridge: a project that inspires. 16 May. Available at: https://clubofmozambique.com/news/maputo-katembe-bridge-a-project-that-inspires-not.

Colson, E. (1989) Overview. *Annual Review of Anthropology*, **18**, pp. 1–17.

Corsín Jiménez, A. (2014) The right to infrastructure: a prototype for open source urbanism. *Environment and Planning D*, **32**, pp. 342–362.

Daniel, L. (2018) https://www.thesouthafrican.com/

maputo-catembe-bridge-africa-china-kwazulu-natal/.

De Boeck, F. (2012) Infrastructure: commentary from Filip De Boeck. Curated Collections. *Cultural Anthropology*, 26 November. Available at: https://culanth.org/curated_collections/11-infrastructure/discussions/7-infrastructure-commentary-from-filip-de-boeck.

De Soto, H. (2000) *The Mystery of Capital: Why Capitalism Triumphs in the West and Fails Everywhere Else.* New York: Basic Books.

De Wet, C. (ed.) (2005) *Development-Induced Displacement: Problems, Policies, and People*. New York: Berghahn Books.

Dore, R. (1981) Introduction, in Dore, R. and Mars, Z. (eds.) *Community Development*. Paris: UNESCO, pp. 13–46.

Downing, T. (2002) *Avoiding New Poverty: Mining-Induced Displacement and Resettlement*. London: IIED.

Downing, T. and Garcia-Downing, C. (2009) Routine and dissonant cultures: a theory about the psycho-socio-cultural disruptions of involuntary displacement and ways to mitigate them without inflicting even more damage, in Oliver-Smith A (ed.) *Development & Dispossession: The Crisis of Forced Displacement and Resettlement*. Santa Fe: The School for Advanced Research Press, pp. 225–253.

Freedman, J. (1980) The territorial approach to rural development in the People's Republic of Mozambique: six discussion papers. *International Journal of Urban and Regional Research*, **4**, pp. 97–115.

Freire, P. (2003 [1930]) *Pedagogy of the Oppressed*. 30th Anniversary Edition. New York: Continuum International.

Graham, S. and Marvin, S. (2001) *Splintering Urbanism: Networked Infrastructures, Technological Mobilities and the Urban Condition*. London: Routledge.

Howe, C., Lockrem, J., Appel, H., Hackett, E., Boyer, D., Hall, R., Schneider-Mayerson, M., Pope, A., Gupta, A., Rodwell, E., Ballestero, A., Durbin, T., el-Dahdah, F., Long, E. and Mody, C. (2016) Paradoxical infrastructures: ruins, retrofit, and risk. *Science, Technology & Human Values*, **41**(3), pp. 547–565.

Howell, J.P. (2015) 'Modes of governing' and solid waste management in Maui, Hawaii, USA. *Environment and Planning A*, **47**, pp. 2153–2169.

Jaglin, S. (2014) Regulating service delivery in southern cities: rethinking urban heterogeneity, in Parnell, S. and Oldfield, S. (eds.) *The Routledge Handbook on Cities of the Global South*. London: Routledge, pp. 434–447.

Kirshner, J. and Power, M. (2015) Mining and extractive urbanism: post-development in a Mozambican boomtown. *Geoforum*, **61**, pp. 67–78.

Koenig, D. (2001) *Toward Local Development and Mitigating Impoverishment in Development-induced Displacement and Resettlement*. Final Report available at: https://assets.publishing.service.gov.uk/media/57a08d63ed915d622c001973/R76442.pdf.

Koenig, D. (2018) Problems endure despite policies: urban livelihoods after forced displacement, in Cernea, M. and Maldonado, J. (eds.) *Challenging the Prevailing Paradigm of Displacement and Resettlement: Risks, Impoverishment, Legacies, Solutions.* London: Routledge, pp. 75–94.

Lake, R.W. (2017) Justice as subject and object of planning. *International Journal of Urban and Regional Research*, **40**, pp. 1205–1220.

Lassaily-Jacob, V. (1996) Land-based strategies in dam-related resettlement programmes in Africa, in McDowell, C. (ed.) *Understanding Impoverishment: The Consequences of Development-induced Displacement*. New York: Berghahn Books, pp. 187–199.

Lawhon, M., Nilsson, D., Silver, J., Ernstson, H. and Lwasa, S. (2018) Thinking through heterogeneous infrastructure configurations. *Urban Studies*, **55**, pp. 720–732.

Leigh Star, S. (1999) The ethnography of infrastructure. *American Behavioral Scientist*, **43**, pp. 377–391.

Lemonnier, P. (2012) *Mundane Objects: Materiality and Non-Verbal Communication*. Walnut Creek, CA: Left Coast Press.

Magaia, S. (2018) Mobilidade de pessoas em resultado da implantação de projectos de Interesse Público. Paper presented at the National Conference on Resettlement, Ministry of Land, Environment and Rural Development, Chibuto.

McLaren, D. and Agyeman, J. (2015) *Sharing Cities: A Case for Truly Smart and Sustainable Cities*. Cambridge, MA: MIT Press.

Ministry of State District (2005) Perfil do Distrito de Massingir, Provincia de Gaza. Maputo.

Mitlin, D. (2008) With and beyond the state: co-production as a route to political influence, power and transformation for grassroots organizations. *Environment & Urbanization*, **20**(2), pp. 339–360.

Monstadt, J. (2009) Conceptualizing the political ecology of urban infrastructures: insights from

technology and urban studies. *Environment and Planning A*, **42**, pp. 1924–1942.

Oliver-Smith, A. (ed.) (2009) *Development & Dispossession: The Crisis of Forced Displacement and Resettlement*. Santa Fe: The School for Advanced Research Press.

Oliver-Smith, A. (ed.) (2010) *Defying Displacement: Grassroots Resistance and the Critique of Development*. Austin, TX: University of Texas Press.

Ostrom, E. (1996) Crossing the great divide: co-production, synergy, and development. *World Development*, **24**(6), pp. 1073–1087.

Ostrom, E., Schroeder, L. and Wynne, S. (1993) *Institutional Incentives and Sustainable Development: Infrastructure Policies in Perspective*. Boulder, CO: Westview Press.

Otsuki, K., Acha, D. and Wijnhoud, J.D. (2017) After the consent: re-imagining participatory land governance in Massingir, Mozambique. *Geoforum*, **83**, pp. 153–163.

Otsuki, K. and van Helvoirt, B. (2017) Pro-poor public-private partnerships for development in Africa: where are local communities? in Leitao, J., Sarmento, E.M., and Aleluia, J. (eds.) *The Emerald Handbook of Public-Private Partnerships in Developing and Emerging Economies: Perspectives on Public Policy, Entrepreneurship and Poverty*. Bingley: Emerald Publishing, pp. 167–189.

Oxford Living Dictionaries (2018) Infrastructure. Available at: https://en.oxforddictionaries.com/definition/infrastructure.

Padovani, F. (2016) *Development-Induced Displacement in India and China: A Comparative Look at the Burdens of Growth.* Lanham, MD: Lexington Books.

Parnell, S. and Pieterse, E. (2014) *Africa's Urban Revolution*. London: Zed Books.

Rakodi, C. (2006) Relationships of power and place: the social construction of African cities. *Geoforum*, **37**, pp. 312–317.

Roy, A, (2005) Urban informality: toward an epistemology of planning. *Journal of American Planning Association*, **71**(2), pp. 147–158.

Satiroglu, I. and Choi, N. (eds.) (2015) *Development-Induced Displacement and Resettlement*. London: Routledge.

Shannon, M., Otsuki, K., Zoomers, A. and Kaag, M. (2018) Sustainable urbanization on occupied land? the politics of infrastructure development and resettlement in Beira city, Mozambique. *Sustainability*, **10**, 3123. https://doi.org/10.3390/su10093123.

Simone, A. and Pieterse, E. (2017) *New Urban Worlds:*

Inhabiting Dissonant Times. Cambridge: Polity Press.

Steel, G., van Noorloos, F. and Klaufus, C. (2017) The urban land debate in the global south: new avenues for research. *Geoforum*, **83**, pp. 133–141.

The Economist (2014) Frontier markets: wedge beyond the edge. Print edition, 5 April.

United Nations (2016) The Sustainable Development Goals Goal 9. Available at: https://sustainabledevelopment.un.org/sdg9.

UN-HABITAT (United Nations Human Settlement Programme) (2003) *The Challenge of Slums: Global Report on Human Settlements*. London: Earthscan.

UN-HABITAT (2016) *The New Urban Agenda*. Available at: habit3.org/the-new-urban-agenda.

Van der Ploeg, L. (2018) Business and Human Rights: Addressing the Challenges of Respecting, Protecting and Fulfilling the Human Rights of Project-Affected Peoples. PhD dissertation, University of Groningen.

Van Noorloos, F., Steel, G., and Kreyfus, C. (2018) Land in urban debates: unpacking the grab-development dichotomy. *Urban Studies*, online first: https://doi.org/10.1177/0042098018789019.

Venkatesan, S., Bear, L., Harvey, P., Lazar, S., Rival, L. and Simone, A. (2018) Attention to infrastructure offers a welcome reconfiguration of anthropological approaches to the political. *Critique of Anthropology*, **38**(1), pp. 3–52.

Warner, M. (2002) Publics and counter-publics. *Public Culture*, **14**(1), pp. 49–90.

Watson, V. (2014) Co-production and collaboration in planning: the difference. *Planning Theory and Practice*, **15**, pp. 62–76.

Wetela. A. (2018) Relatório sobre o Reassentamento em Moçambique, draft version. Maputo, MITADER.

World Bank (2004) *Involuntary Resettlement Sourcebook: Planning and Implementation in Development Projects*. Washington DC: World Bank.

World Bank (2009) *The World Development Report: Reshaping Economic Geography*. Washington DC: World Bank.

World Bank (2017a) *The World Bank Social and Environmental Framework*. Available at: http://pubdocs.worldbank.org/en/83772152276205010/108/Environmental-and-Social-Framework.pdf.

World Bank (2017b) *Africa's Pulse*, Vol. 15. Available at: http://documents.worldbank.org/curated/en/348741492463112162/Africas-pulse.

World Bank (2018) *Who We Are: History*. Available at: http://www.worldbank.org/en/about/history.

Zoomers, A., van Noorloos, F., Otsuki, K., Steel, G., and van Westen, G. (2017) The rush for land in an urbanizing world: from land grabbing toward developing safe, resilient, and sustainable cities and landscapes. *World Development*, **92**, pp. 242–252.