Dynamics of greenfield development: Evidence from the "20,000 plots" project in Dar es Salaam - public goods and services

Vernon Henderson, Francisco Libano-Monteiro, Martina Manara, Guy Michaels and Tanner Regan

De novo (greenfield) projects address the problems of informal housing by purchasing cheap agricultural land on the city edges, surveying it, and partitioning it into formal plots that people can buy and build homes on. Research suggests several recommendations to improve the provision of public goods in these projects:

- Design land sale criteria and development conditions to attract developers who could develop non-residential plots, such as residents' groups and associations.
- Consider keeping public use plots under public ownership (education, health). Penalise landowners who far exceed the legal timeframe for development of public uses. In some cases, transfer ownership to other private or collective entities with development capacity.
- Encourage mtaa offices and other collective entities to promote temporary initiatives that mitigate disadvantages from undeveloped plots (environmental damage, lack of security).
- Encourage social infrastructures (community committees and technical boards, decentralised public-private partnerships, and ad-hoc co-production arrangements with utilities) when these prove effective.
- Document and share good practices, including bottom-up solutions that might be sub-optimal but effective in similar neighbourhoods.

POLICY BRIEF TZA-20168

MAY 2025

This project was funded by the IGC

theigc.org

DIRECTED BY

FUNDED BY

Introduction

This research studies the implementation phase of the "20,000 Plots" (20KPlots) project in Dar es Salaam (Tanzania). The project draws on the World Bank Sites and Services (WB-S&S) programme during the 70s and 80s, which was cancelled due to difficulties recovering costs and improving land tenure access for low-income citizens. The WB-S&S programme converted greenfield land on the city's outskirts into planned urban plots with access to services and amenities. Despite its pitfalls, by the end of the 90s, those projects improved access to land for middle-class populations and Tanzania's government fostered the construction of 36,000 residential plots in 12 areas on the fringes of Dar es Salaam.

This analysis extracts lessons from the "20,000 Plots" experience by investigating how planning decisions impacted the value of the land, the development of housing, and the occupation of residential plots (see “housing and neighbourhoods” policy brief). Adding to evidence on the implementation of roads and other public goods in the housing and neighbourhoods policy brief, this paper further delves into the issues of non-residential land development in the "20,000 Plots" project.

FIGURE 1: Non-residential uses in Mbweni Mpiji

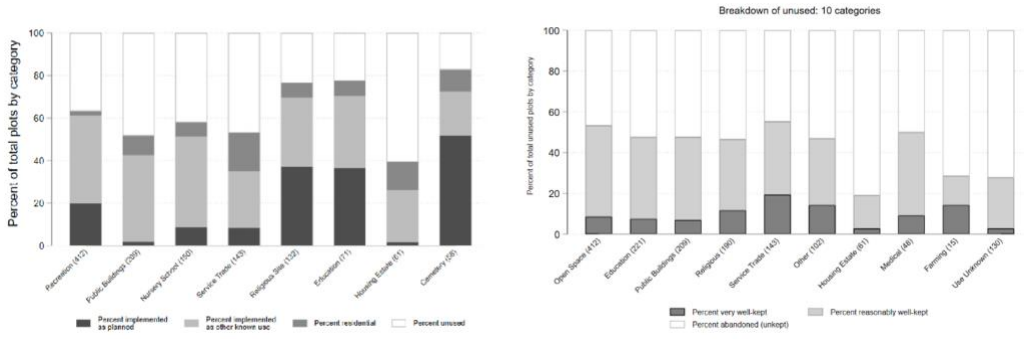
Results

We used a census of non-residential land use (~1,560 plots) and questionnaires to residents and local leaders across the 11 project areas to examine the processes of non-residential plot allocation and development, the current levels of infrastructure provision and maintenance of empty plots, and the role of community action and co-production strategies within and across the 30 neighbourhoods (mitaa) of the 11 project areas.

How were non-residential plots developed and maintained?

Only 16% of the plots were implemented as planned, with the highest rate of implementation belonging to cemeteries, religious sites, and educational buildings (>40%) and the lowest to public buildings and service trade facilities (<2%). Over a third of non-residential plots (36%) are used for other non-residential uses, 8.6% were developed as residential plots, and 39% fell into disuse. Approximately 50% of those show some level of maintenance/upkeep, while the remaining 50% appear completely abandoned. However, the development of non-residential land uses has been uneven across the 12 project areas, where neighbourhoods in the Northern areas – where plot values are higher and residents are richer – have the highest rates of vacant land (despite being better maintained) in comparison to neighbourhoods in the southern locations, where many more plots were alternatively put to agriculture (see Figure 2).

FIGURE 2: Plot development within the "20,000 Plots" project areas



How were non-residential plots allocated?

Non-residential plots were allocated according to three main categories. So-called “fully-commercial" plots (educational, health, administrative buildings, and service provision facilities) were sold to private investors, individuals, or organisations on the markets. Plots intended for "partly-commercial" (informal sector, parking, market, library, and service trade) and "non-commercial" (open space, cemetery, playground, playfields, waste collection, parks, conservation areas) uses were handed over to the relevant municipality by the Ministry of Land and Housing (MLHHSD). The low development rates contravene a common development condition that all plots should be developed within a maximum period of 36 months. Private entities may hold off development because the low rate of housing development and residential plot occupation (see housing and neighbourhoods policy brief) means limited demand for public services. Others may have acquired these plots for speculation. Either way, the provision of much-needed services, such as education and service trade, is lagging. Indeed, 55% of residents stated the absence of places for markets and trade is among the three things they dislike the most in these neighbourhoods.

> **“We formulated the construction committee and asked the residents to contribute five bricks each; they agreed, and others were influenced to contribute more bricks...We constructed the foundations of four classrooms. The government later took over the project and finalised the construction with nine new classrooms” (N3)**

Facilities for primary and secondary education (with a relatively higher implementation rate of >40%) exist in 26 out of 28 mitaa, via a mix of private (33) and public (21) investment. In ten cases out of 21, the government led the development of public schools, especially under a national initiative to improve access to secondary schools, and nine extra schools were led by communities which mobilised internal and external resources through their mtaa offices. In total, 15 public schools counted on the active participation of communities for diverse tasks such as volunteering labour, the formulation of construction committees and the provision of construction tools. One of the most pressing challenges described by community leaders was the availability of land for public use even when funds had been secured. Sometimes, such as in the case of Bunju and Mivumoni, this required building public primary and secondary schools in the place of a playground and markets.

FIGURE 3: Old market in Kiziza replaced by the new Kibada market in the periphery

Image credit: fieldwork team

Furthermore, only seven out of 28 mitaa have service-trade facilities, with only nine commercial hubs developed in total, including six markets. On average, these developments started ten years into the "20,000 Plots" project. Sometimes, such as in Buyuni and Bunju, markets took over a decade to kick off their activities. The slow pace of development of service-trade facilities naturally follows the low density of customers in the "20,000 Plots" project areas and alternative provision in the informal nearby regions of the same neighbourhoods. However, interviewees indicated that other causes might be at play, such as the initial placement of those plots in peripheral areas with limited road access, so that in some cases, the mtaa offices allow “few residents to

conduct their economic activities on plot as they wish, just to make the area lively" (N15).

This evidence underscores the importance of policy interventions that prevent withholding non-residential plots (whether because suppliers await demand or for speculative purposes). For instance, this may be done via improved development conditions (for example, setting a realistic timeline for minimum development, defining what minimum development is, and allowing for incremental development over time) and improved sale conditions (for example, buyers of non-residential plots should supply evidence of their capacity to develop the land at the set development conditions, such as evidence of financial flows). Enforcing penalties is essential, and this might involve transferring ownership when landowners have exceeded the development timeframe for decades. Given our findings that residential clusters spur public goods and service provision (see housing and neighbourhoods policy brief) and can successfully engage in collective action and co-production, we would recommend also considering collective entities and residents' associations as potential owners and developers of some non-residential plots.

How do undeveloped plots affect residents, and what are their responses?

High rates of underdeveloped plots generate costs to society ("externalities"), paid by the current residents and disproportionately falling onto the residents adjacent to abandoned land. These plots have become dumping sites and hideouts for criminals, raising risks of environmental pollution: 45% of residents reported garbage dumping within a 200m radius of their homes. A striking 41% of the residents stated that they or their household members feel unsafe walking alone in the evenings. Within the twelve months before interviews, 50% heard of robbery within a 200m radius of their homes; 19% had robberies at their properties; and 10% experienced or witnessed violence. Indeed, outgrowing vegetation and long distances between houses create an ideal environment for criminal activities and land contamination (see Figure 3).

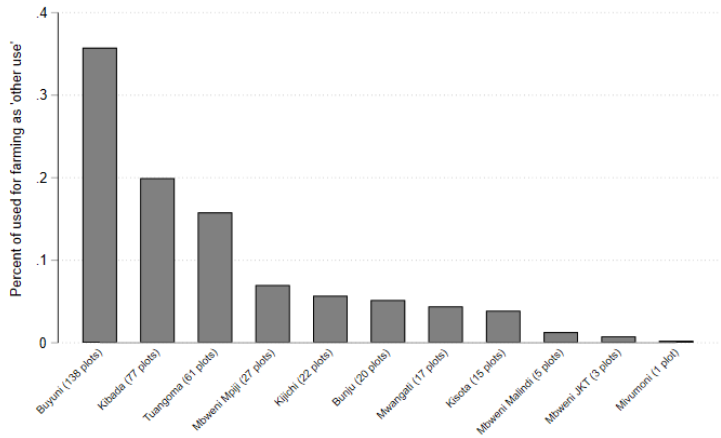
FIGURE 4: Unauthorised dumping site in the "20,000 Plots" project

Image credit: fieldwork team

Environmental pollution and land encroachment

To tackle this issue, mtaa officers allow temporary activities such as vegetable growing, gardening, and sports practices to other neighbours; organise residents or hire people for regular clean-up activities; and enforce landholder maintenance practices. In addition, occasional squatting practices in the "20,000 Plots" project areas of seven mitaa (out of 28) are often indistinguishable from the council's regular subdivision of land plots. To face this situation, mtaa officers restrict the use of those lands to other residents who need the authorisation to carry out alternative practices, encourage residents to report illegal practices through public awareness and the installation of warning posters, and conduct regular inspections to monitor the state of the unoccupied plots.

FIGURE 5: Breakdown of 386 non-residential plots converted into farming by project area



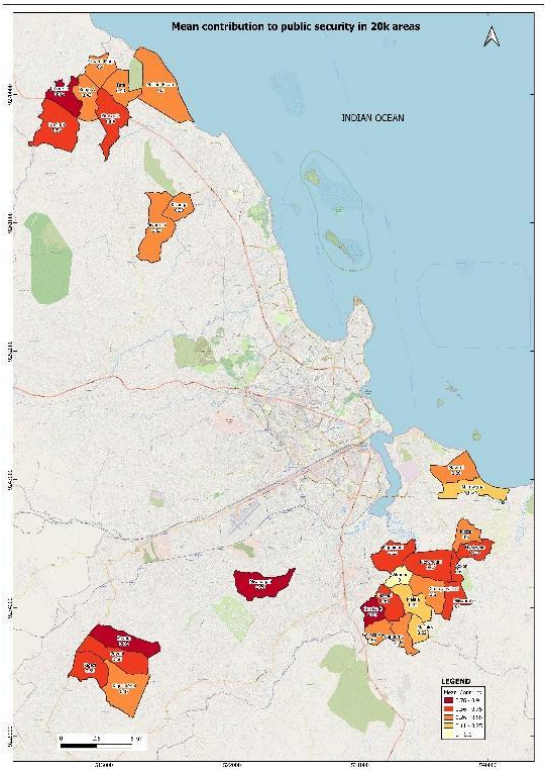
According to the interviewed mtaa leaders, however, the effectiveness of these bottom-up strategies is threatened by a lack of transparency and communication with the higher level of government. Namely, they do not know the exact quantity and location of plots designated for public uses and sometimes do not know the identity of absentee private landowners. Without a clear mandate to protect undeveloped lands and access to information, leaders and residents engaging in the bottom-up strategies described above have been accused of trespassing on private property, which can demoralise collective action. Furthermore, leaders are asked to report on encroachment despite being poorly informed of regular subdivisions or land use changes performed by the municipalities. Collaborating with local government and resident groups can help mitigate the negative social consequences ("externalities") of underdevelopment but requires sharing up-to-date town planning information and the landowners' contact details at the local level and legitimising the existing bottom-up strategies of land protection via temporary alternative uses and community clean-up practices.

Safety

Communities have engaged in multiple public security strategies to increase safety, typically employing the local youth. Only two (out of 28) mitaa hires external guards, and another two do not take any initiative. Three modes of public security include: first, “block level” initiatives enabling residents to organise themselves independently from local leaders and allowing cash payments; second, “shina level” initiatives under the management of local leaders, which allow neighbours to volunteer when they are unable to pay; and finally, zone level initiatives, which implies a combination of the former two modes.

However, safety remains an unsolved issue despite extensive effort and ever-evolving initiatives. A key explanation is the sparsity of residential development, which shrinks the pool of potential contributors and large plots, weakening the social fabric of these neighbourhoods (Figure 6). We found a high rate (35%) of residents were usufructuary (essential unpaid caretakers) who are unable or unwilling to make monthly payments towards anti-crime measures. Conversely, high-income landowners who reside there have a personal preference for private security services and so are not motivated to contribute to the public system. This social composition compromises the resourcing of public security for landowners on average or lower income. Therefore, making planning choices that attract residents and ensure a mix of incomes is important to foster collective action. Besides, the government could support communities by raising awareness of the national requirement for residents' participation in public safety and by developing guidelines on good practices, which we found, for instance, in Mwanagati.

FIGURE 6: Contributions of the "20,000 Plots" areas to public safety



Infrastructure provision

Beyond road access, infrastructure is not of higher quality in the "20,000 Plots" areas compared to the unplanned surroundings of the same neighbourhoods. Largely, infrastructure is not provided or managed top-down. Only road layouts (spaces) were available to residents before their establishment (see housing and neighbourhoods policy brief). Instead, residents interact with utility companies and municipal councils to co-produce and maintain the necessary resources. Settlement density facilitates collective action by the local community and lowers the per-capita cost of local infrastructure by spreading total fixed costs across more people. Certainly, scale economies in infrastructure underscore the importance of planning for residential density.

Road maintenance

The project has successfully provided internal road access to each of the plots, with 90% having direct access to roads and 96% being accessible by car. However, roads lack many features (width, pavement, lighting, drainage, etc.), causing flooding in 28% of plots during the rainy season. In response, residents have provided periodic funds, materials, and labour for the routine maintenance of major and minor roads (laying gravel, culverts, and occasionally constructing ditches). Collective action and co-production strategies (for instance, through the municipalities offering excavators while residents contribute money for the fuel and the operator) can provide effective temporary fixes. Still, higher-level coordination and investment are needed to find longer-lasting structural solutions.

FIGURE 7: Road flooding in Kisota

Image credit: fieldwork team

Electricity

Connection to the electricity grid has been successful: 82% of the plots are directly connected to TANESCO (note that "20,000 Plots" received electricity simultaneously with the unplanned surroundings). In large part, this is the result of an effective co-production strategy. Across all "20,000 Plots" areas, residents engaged in activities that facilitated TANESCO in providing service by contributing money and labour, supporting workers with food and tools, and monitoring network security in the long run. Collective action enabled the distribution of poles, as *"individuals with their properties located more remotely paid a relatively high cost, some purchased more than five poles, my neighbour and I purchased five poles at 1 million TZS each"* (N31). Another leader describes co-production as: "*Residents volunteered their wheelbarrows and distributed the poles to the designated sites." Furthermore, some residents prepared the excavations for the installation, while others "played well by preparing food. We did not buy from the restaurants; we cooked ourselves*" (N15).

Water supply

A piped water network is mostly absent within the "20,000 Plots" areas, with the DAWASA service only reaching two out of 12 project areas at the project start and seven project areas at present (specifically, 12 out of 28 mitaa where we conducted interviews). The remoteness of the project areas and a lack of coordination between the town planning and the water authority meant that only some areas close to the existing network, such as Bunju and Mbweni, could receive the water mains before the settlement of residents. Today, over a third of plots (37%) connect to water mains, 29% have private boreholes, and 30% get water from neighbouring plots. Despite DAWASA engaging in campaigns and residents collectivising to mobilise funds, extending the water network often remains unprofitable to the water agency and unaffordable to residents,

opening a window of opportunity for the inquiry of other modes of governance that could effectively work well in practice, such as the alternative public well agreed by DAWASA and residents in Mwanagati which served them for 13 years before DAWASA extending the water mains in 2024.

FIGURE 8: Mwanagati well

Image credit: fieldwork team

Waste collection

Waste collection has room for improvement in the "20,000 Plots" areas, where 45% of residents report that others frequently dump garbage within 200m of their homes. Further, most residents (60%) still bury or burn waste on their plots, while just over a third engage with waste collection. Starting in 2018, the collection system has followed a process of centralisation in which municipalities are involved in procuring contractors. However, several mitta engaging with this process reported dissatisfaction since it is now more difficult to reach agreements directly with the service providers, who are no longer accountable to the mtaa government and residents' committees. Furthermore, delays occur because the centralised system gets congested around the one dumping site in Dar es Salaam. Therefore, there is still room for improvement within this service, with no solution that ensures environmental health standards. In turn, tackling plot underdevelopment and fostering bottom-up initiatives to clean and preserve the environment is vital at this stage.