

# The conflict between attempts to green arid cities and urban livelihoods

## The case of Dodoma, Tanzania

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### Introduction

Dodoma is one of the several urban centres within the semiarid region of central Tanzania. It is characterised by dry climatic conditions with limited annual average rainfall of 567 mm. The rainfall season is rather limited i.e. falls between November and April (CDA, 1976). The remainder of the year is dry. The limited amount of rainfall is a major constraint not only on greening efforts and landscape development of the city but also limits the number of livelihood activities people get engaged in. This has had a considerable impact on the establishment and maintenance of intensive landscaping and parklands in the city. As a result of rainfall shortage, there is a limited supply of water available for the national capital functions. Thus the greening efforts for the city have to rely on fast growing trees and provisions for the protection of young trees from the sun during the driest and hottest months as well as taking care of the trees that are native to the area.

When Dodoma was declared a new national capital of Tanzania in 1974,<sup>1</sup> it was almost bare with scattered trees and shrubs on the surrounding mountains. This landscape scenery was not conducive for urban living due to the hot and uncomfortable climatic conditions, dusty environment and poor scenic views. One of the strategies of improving the greenery of the city was the designation and development of hierarchical open space systems and the devising of practical measures for their implementation. This was to be facilitated by the two master plans: one prepared in 1976 and the revised master plan of 1988. Despite the drawbacks in the implementation of these plans substantial achievements have been made through actual tree planting programmes and nurturing of the natural species within the confines of the city. However, due to limited livelihood opportunities for the residents, activities such as cattle keeping, tree felling for fuel wood, charcoal burning, urban farming and 'squatting' have negatively affected greening initiatives by the government.

### Planning Concepts and Policy Framework

Both the 1976 and 1988 master plans recommended open space systems that were intended to perform among other functions, recreational and agricultural ones, the conservation of soil and vegetation, drainage and storage of rain water and the introduction of some of the characteristics of the countryside into the city. The Future Land Use Plans provide for a comprehensive hierarchical system of interconnected open spaces (CDA 1976; CDA, 1988). This included a small public area inside a 10-house cluster and community parks and walkways in the neighbourhood. Beyond this zone were the recreational parks which surround each residential community. Further away was the open space core (the largest open space in the city) and lastly was the afforestation or buffer zones that separate the built up area of the city and the surrounding Broad Acre areas with rural characteristics (Figure 1). The afforestation zone was simultaneously intended to act as a buffer between and separator of major urban areas to prevent the sprawling, monolithic mass which characterises so many of the world's cities (CDA, 1976). Open land that surrounds residential communities function as visual and noise buffers between houses and industries.

To make these proposals operational, several policy issues were formulated, namely:

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1. The declaration of Dodoma to be a national capital followed a national referendum that favoured this aspiration. The justification for this decision was based on several reasons among which was to stimulate economic development in the impoverished semi-arid central region of Tanzania. It was envisaged that Dodoma would be 'growth pole' for the central region of Tanzania whereby economic benefits would trickle down to the surrounding regions (CDA, 1974).

- i. Open spaces should be preserved in accordance with the master plan, making the best possible use of the natural characteristics of the land and vegetation, the open creek and the riverbeds and the dominant topographic features.
- ii. Roads, pedestrian routes and open spaces areas were to be carefully landscaped; in general, not less than one tree per dwelling unit should be provided elsewhere within the neighbourhood.
- iii. Until such time as areas are needed for recreation facilities, small-scale agriculture was to be carried out so as to provide green landscape and food for the urban residents.
- iv. Except where organised games are proposed, extensive tree planting programmes were to be initiated, using indigenous vegetation types.
- v. Special attention was to be paid to all dry sites so that succulents and other hardy plants can survive and maintain a measure of greenery and shade.
- vi. Recreation park and afforestation areas were to be kept free of urban development, but certain uses might be introduced which would not detract from the visual aspect of the programme. Such uses might include vineyards, demonstration farms, golf courses, and institutional uses in larger grounds and tree nurseries. Special care was to be exercised regarding the design and location of roads through these areas and in the location of essential utilities such as power transmission lines.
- vii. In certain areas stream valleys were to be dammed and water impounded to improve irrigation systems within a local area. These small reservoirs were expected to assist in minimising erosion. It was recognised that water features could play an important role in such a dry climate particularly in enabling surrounding vegetation to stay green longer than might otherwise be the case.

### **Greening Attempts as Implemented in Dodoma**

Immediately after the approval of the master plan in 1976, the implementing agency, the Capital Development Authority (CDA)<sup>2</sup> embarked on tree planting programmes and surveillance measures to nurture the surrounding natural vegetation so that it grows into bigger trees. By 1978, more than 335,000 plants and trees were propagated, 150 hectares reforested, two horticultural nurseries established, a 20 hectare vineyard farm was developed and landscaping of the old town through planting of tree and shrubs were implemented (CDA, 1978, Kanyama, 1995) (Figures 2-5). In the year 1988 when the 1976 master plan was being revised, more than 20,000 hectares were already developed into forest zones providing a greenery landscape in the areas immediately surrounding the city of Dodoma. The implementation of this programme involved stringent development controls against tree felling activities in the surrounding forests and close follow-up of the young planted seedlings.

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2. The Capital Development Authority was established in 1974 to implement the government decision of transferring the national capital from Dar es Salaam to Dodoma. One of the aspects that the CDA executed was the preparation of the master plan (1976) and implementation of the landscape improvement plan as recommended in this plan.

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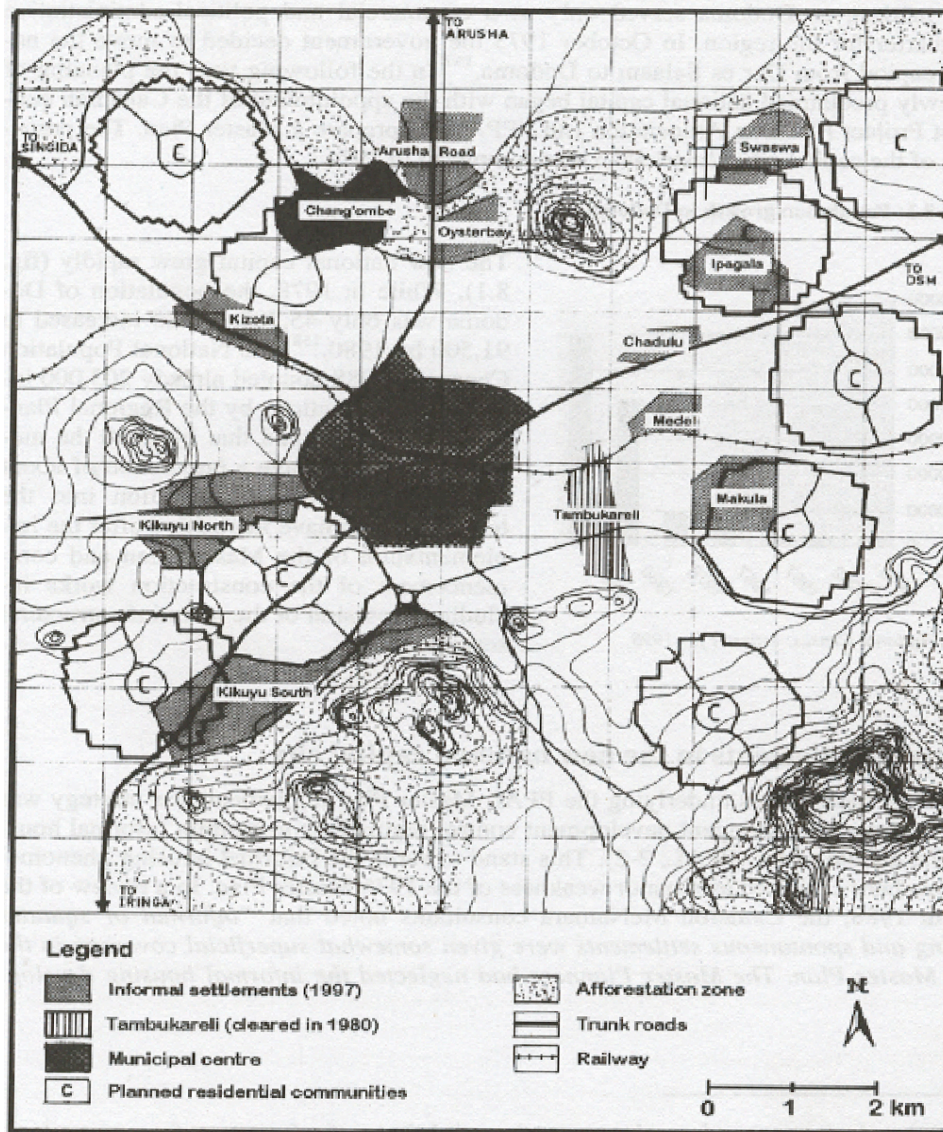
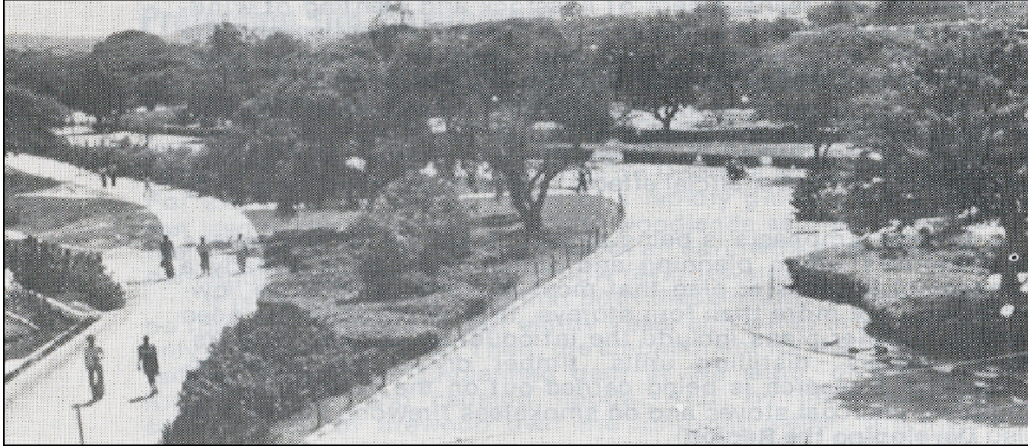


Figure 1: Afforestation (Buffer zone) and major open spaces of Dodoma: Note that the mountainous areas to the south and the northern afforestation zone were recommended for extensive tree planting and nurturing of the natural species as a strategy towards greening the City of Dodoma (Source: Dodoma Master Plan 1976).

Several important elements of the landscape and open space proposals contained in the master plan were also implemented. These included the afforestation belt, Mlimwa Hill Park, street landscaping in several neighbourhoods, and the development of sports fields and walkway areas. These are notable achievements and reflect the considerable efforts made by the Department of Horticulture and Conservation of the CDA to enhance the landscape image of the city. However, whilst the landscaping of many parts of Dodoma met with a degree of success



until 1988, the failure to give definition to major roads leading into the town has been a lost opportunity to enhance the city's image.



*Figure 2: The view of the landscaped central parts of Dodoma City. The planting of trees and shrubs have constituted the major initiatives of greening the semiarid City of Dodoma (Source: CDA, 1976).*

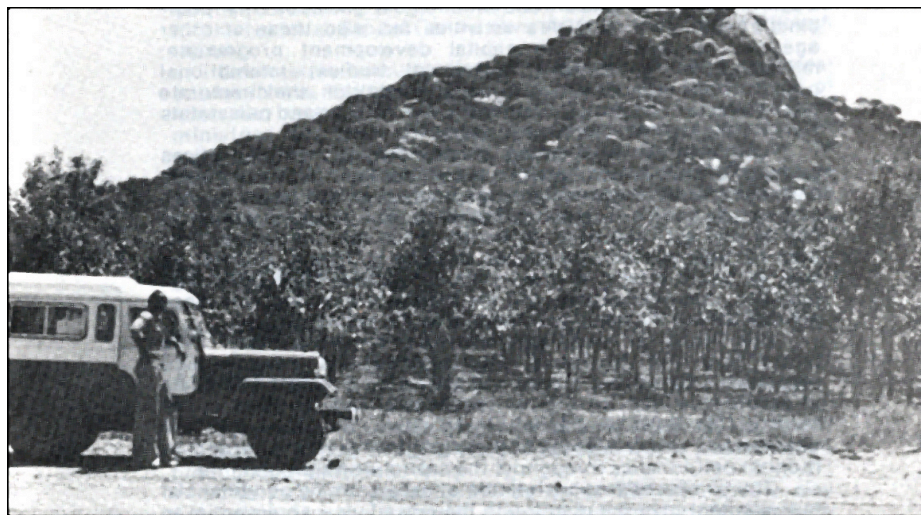


*Figure 3: The Botanical Gardens of tree nurseries: One of the strategies towards enhancement of the greenery of the City of Dodoma was the establishment of a tree nursery. This nursery provided an average of 1.5 million seedlings per annum for planting in areas earmarked as landscape areas and gardens (Source: CDA, 1981).*





*Figure 4: The semiarid character of the buffer zone area before greening initiatives at Mlimwa Hill Park in 1981. Immediately after declaring Dodoma the new National Capital, initiatives of tree planting started. Apart from nurturing natural species, new trees from the tree nursery were planted (Source: CDA, 1981).*



*Figure 5: Part of the buffer zone (afforestation) area after tree planting and nurturing at Mlimwa Hill Park. Note that the natural vegetation on the mountain have been protected so as to grow into a forest together with planted trees in the foreground. (Source: CDA, 1987).*

## **Livelihood Activities**

### **Petty trading**

A study conducted by Meshack (2001) indicates that the three major livelihood activities in Dodoma are petty trading, urban farming and livestock keeping. Petty trading is the major economic activity, which is widely practised by residents within Dodoma Municipality. The results from this study indicate that about 70% of the residents are engaged in petty trading. Petty traders engaged themselves in operating shops, selling charcoal, locally brewed beverages, buns, doughnuts, vegetables, fried fish, soup, fruits and vegetables and other agricultural products. Other petty traders were noted to be engaged in selling water, local brew, and ice cream (ibid.). Others operate kiosks and groceries within their premises. Other residents were selling goods in the street and others operating their business at or nearby the market place within the municipal centre. The study further indicates that there were also a few residents who operated auction marts (minada) dealing with all sorts of goods. In these minada, both livestock and crops are sold. Within the municipality, sellers are taxed about 2000/= for cows and 1000/= for goats, while in rural areas, the rate is 1500/= and 800/= respectively. The majority of these activities are conducted along the roads and streets, around the municipal bus stand, and in areas that were earmarked as green open spaces within the city. As such there has been a conflict in terms of use of spaces versus these livelihood activities.

Charcoal is the main source of energy for the majority of residents of Dodoma. As a result of tree felling restrictions, charcoal has to be imported from areas distant from the city. Charcoal sellers have been blamed and often threatened by the authorities as the ones causing deforestation. Results from the study by Meshack (2001) found that charcoal sellers complained bitterly about interference by the authorities in their livelihood activities.

A woman selling charcoal who bitterly complained about police interference in her business has exemplified this. She is engaged in buying charcoal in rural areas and selling it in urban areas. She said, "I am always using unofficial routes to avoid paying tax. Nonetheless, the traffic police pose a big threat to my business because they block the road until you either show them documents of tax clearance or, bribe them by offering some amount of money" (Meshack, 2001). The woman asked why traffic police bother poor women selling charcoal so much, instead of concentrating on big traffic offences and security issues. She prayed that they should try to be more considerate as the women are struggling for the survival of their families.

### **Urban Farming**

Further, Meshack (2001) observes that during the rainy season, some residents within Dodoma Municipality practice urban farming. These activities are operated on vacant plots and even on road reserves. However, crop farming along roads and streets makes it difficult for residents to reach their premises by vehicle. This problem came into being because local residents previously used this land for farming activities, i.e. before it was planned and surveyed. Residents complained that the local authority has deprived them of their land and allocated it either to the newcomers or designated new uses, making them landless. Usually, they use undeveloped plots for urban farming until owners of the plot start to develop. For that matter, they even use road reserves for farming activities. As a result during the rainy season vacant plots are often turned into farms (Meshack 2001).

Due to the semiarid climatic condition of the area and poor economic levels of most households, harvesting is usually carried out while crops are still green i.e. before they are fully ripe and dried. Most of the residents can produce not more than a bag of maize; usually they end up getting 2-3 tins of maize (Meshack, 2001). With these low levels of crop productivity, residents have to engage in a variety of livelihood activities including livestock keeping in order to make ends meet.

### **Livestock Keeping**

Livestock keeping is widely practised by the residents of Dodoma. There are two categories of livestock keepers; those who are local residents and new immigrants. The former group practices a system of free-range grazing while the latter group practices zero grazing (Meshack 2001). Before the Dodoma urban area was designated into various land uses by the master plans, local residents used to own large numbers of animals within the vicinity of the municipality for they had ample land to graze and there was also plenty of water for the animals. After the national capital functions started to be introduced, most of the local residents found themselves landless,

their farms, grazing land and water sources turned into residential areas as well as areas slated for afforestation, open space systems or other similar uses. As a result they had to move with their animals a bit farther to look for pasture and water. Even so, not all livestock keepers had moved to distant locations far from the urban functions. By 1987, there were about 230 cattle keepers within the confines of the urban area each owning herds of ca. ten cattle (Danagro, 1987). This activity has frequently created conflicts between the authorities on the one hand who are striving to green the city and the livestock keepers who graze cattle in the immediate forest areas and open spaces. In view of these conflicts, in 1987, the CDA prepared a cattle resettlement scheme in the peripheral areas of the urban area where cattle keepers were to be resettled.

### **The Cattle Resettlement Scheme**

The cattle resettlement scheme was prepared in response to conflicts between the urban authorities and cattle keepers (Danagro, 1987). The scheme involved the identification of cattle keepers in the urban area, designation of 240 plots of one acre each, land demarcation, drilling of one bore hole for water supply, construction of a veterinary centre and scrapping of roads within the resettlement scheme area (ibid.). However, the implementation of this scheme was marred by a number of problems including the non-allocation of plots to prospective cattle holders. A study by Meshack (2001) confirms this observation when residents asserted that: "we were promised by the local authority to be allocated new sites for livestock keeping outside the municipality, but this has not been done until now. Presently, there are rumours that there is a bush land which we are supposed to go there (sic)." This resulted in continued cattle keeping within the urban area and conflict with the authorities' greening initiatives.

### **Conflicts Between Greening Attempts and Livelihood Activities**

As a consequence of the two perspectives, namely greening initiatives versus people's livelihoods, a number of conflicts have emerged, some of which are a result of the gap between planning intentions and actual realities on the ground. Others are a result of conflicting uses within physical spaces. These conflicts have been categorised as follows:

#### **The Conflict Between the Residents and the Municipality**

As a result of the failure of the cattle resettlement scheme, local livestock keepers still practice a free-range system, grazing within municipal lands, open spaces and afforestation areas. Often, a number of cattle herds have been withheld by the municipality on the grounds that they have been grazing in prohibited areas. Cattle owners have to pay fines to recover their herds from the municipality.

#### **Conflict Between Livestock Keepers and Residents**

Other conflicting sides involve livestock keepers and residents within neighbourhoods. As some cattle are grazed using the free-range system it sometimes happens that cattle herds feed on crops cultivated under urban farming. This creates conflicts with residents from within the settlement. For example, it has been reported that in one case, residents had poisoned their crops and when animals fed on these crops they died (Meshack, 2001). Others had strewn plastic bags so that when animals ate the bags they might die (ibid.). These conflicts still remain unresolved.

#### **Conflicts in the Use of Spaces**

Within the municipal centre, conflict has involved the street vendors and petty traders. While the municipality wishes to maintain recreational oriented type of uses of spaces, petty traders have been using these spaces for activities such as the selling of groceries, fruit, soft drinks, kiosks and at times used clothes. On several occasions the municipal authority has carried out demolition exercises of unauthorised kiosks along the main streets and open spaces. Despite the fact that specific areas for these activities such as the Saba Saba ground for the sale of used clothes were designated following the outbreak of these conflicts, there are still various roadside informal sector activities that are being run in these areas.

#### **Invasion of Afforestation Areas by Informal Settlements**



Although housing development does not fall under the above itemised livelihood activities, it is worth mentioning that due to stringent development standards in planned areas, most low income residents could not afford to develop their houses in these areas. Compounded by the shortage in supply of surveyed plots, residents invaded one of the prime afforestation areas of Dodoma that was developed to the north as a buffer zone for city development (Figure 1). By 1978, only a few houses, not exceeding 12, were informally developed in this area. This number increased to 2000 houses by the year 1988 (Lupala and Lupala, 1988). To date, this settlement is the largest settlement agglomeration that has grown informally. Similar developments are taking place in many other areas that were earmarked as part of the open space systems under the 1976 and 1988 master plans. Despite the attempts by the authorities to demolish these settlements, it seems that the pace at which informal settlements are developing is faster than the efforts made to demolish them. Besides, the demolition of settlements has in many cases resulted in conflicts with residents, most of which has been detrimental to their livelihoods.

### **Discussion**

It is apparent from the foregoing discussion that the master plans aimed at the creation of a green and pleasant city, with a generous allocation of land for open space needs and an urban design philosophy that was based on close integration of man and nature. Although these were laudable and plausible aims, the translation of these aims into actual designs and development proposals led to conflicts with the livelihood activities of poor residents whose lifestyles and economic priorities were not taken into consideration. The “hierarchy” of open spaces in the master plans was a western design model being imposed in a cultural context which demanded a more comprehending and appropriate response. When recreation and greening initiatives are highly structured (clubs, societies, organised sport for different age groups, etc.) it obviously demands a structured provision of facilities. But in Dodoma, recreation activity is not so structured, nor is it likely to be for a long time to come. A plan based on structured recreation is not only culturally inappropriate, it is inflexible and expensive in terms of maintenance, land and other resources. Therefore, the adoption of a city-wide hierarchy of open spaces serving a variety of visual and functional needs and that draws its relevance from western concepts and lifestyles seems to be divorced from the context of Dodoma.

The emphasis placed on creating a densely landscaped city was expressed in the extensive use of the colour green in the report graphics. This was rather too optimistic for the actual realities of Dodoma. The harsh realities of the semiarid climate, poor soils and drainage, low and inconsistent rainfall, loss of topsoil, and continuing heavy demand for wood fuel and charcoal, were given little attention. This has been revealed in the conflicts between people’s livelihood activities and the greening attempts.

The landscape design presented a picture of a green city, but its implementation would have required a generous and reliable water supply which was not (and is still not) available. A significant area of afforestation has been established, but tree loss has been reported to be high. Invasion of informal housing into these afforestation areas reflects the dire need of poor households for affordable housing as the housing development standards in informal housing areas are quite flexible.

Both the 1976 and 1988 master plans made provisions for large areas of recreational park surrounding communities. These were intended as buffers to define communities and to be used as possible farm sites. While the proposals seem appealing, such areas have tended to become potential areas where free-range grazing of animals is taking place and in many a case they have depicted a character of residual spaces with very little meaning or purpose. They have become dumping grounds for rubbish and increasingly are becoming very expensive to maintain. The provision of buffer recreational parks is, therefore, considered an excessive use of valuable urban land and its incorporation into future neighbourhood and community design should be reconsidered.

It is also apparent from the foregoing discussion that planning for greening initiatives in semiarid cities such as Dodoma and livelihood activities ought to be carried out involving all stakeholders in order to make the overall exercise a success. The on-going conflicts revealed from Dodoma are a manifestation of the lack of involvement of the stakeholders in the overall process of planning. In the same vein, the designation of open spaces and recreational activities ought to be worked out from the prevailing lifestyles of the people as manifested in their daily participation in recreational activities. It is not surprising that the conflicts examined in this paper are a result of

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the clash between priorities set by the authorities and those of the residents. In order to harmonise these priorities, people's participation in planning exercises is crucial because it guarantees sustained growth and the success of greening initiatives within the urban areas.

### **Conclusion**

This paper has examined the greening initiatives by the capital city authorities in the semiarid city of Dodoma, which has been designated the capital city of Tanzania. The planning approach and actual implementation of these greening initiatives have been sketched. The conflicts between greening efforts and people's livelihoods have been also discussed. It has been argued that although the master plans and the urban authorities have prepared articulated greening plans, the concepts behind these plans were not consistent with the actual realities of the context and therefore could not achieve a sustained growth in terms of making the city green. It is has been further suggested that stakeholder participation in the greening process of the city is the key component if sustainable greening initiatives within the semiarid city are to be a success.

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## Abstract

One of the features that characterise the designated capital city of Dodoma is the limited green landscape element as a result of semi-arid climatic conditions of the whole central region of Tanzania. Besides concerted efforts by the Dodoma urban authorities to develop greenery landscape within the city through the Capital City Development Programme, such efforts have fallen into conflict with people's livelihood activities. In this paper, it is argued that the gap between identification of appropriate landscape features that are not consistent with people's lifestyles and the local conditions are the contributory factors to the observed conflicts between attempts to green the city and livelihoods of the residents. Borrowed planning concepts in the master plans that were imposed on the context of Dodoma do not reflect the reality of the people's needs and priorities as regards their livelihoods. These concepts have to the greatest extent failed to integrate livelihood activities and greening initiatives. This paper underscores the need for developing locally based planning considerations that take cognisance of all stakeholders and the local context as a way towards harmonising greening initiatives while accommodating people's livelihood needs and activities.

**Key Words:** greening initiatives, livelihood activities, semi-arid cities, urban planning, master plans, Dodoma, Tanzania.

## Résumé

Une des particularités qui caractérise la capitale désignée de la ville de Dodoma est le paysage vert limité dû aux conditions semi-désertique de toute la région centrale de la Tanzanie. En dépit des efforts vigoureux des autorités urbains de Dodoma de développer la verdure à l'intérieur de la ville, ces efforts ont été opposés aux activités de survie des résidents. Dans cet article, il est proposé que l'écart entre l'identification des éléments du paysage qui ne conviennent pas aux modes de vie des peuples et les conditions de vie locales contribuent aux conflits observés entre les efforts de verdifier la ville et les stratégies de vie des résidents. Les idées de planification dans les plans maîtres empruntés d'ailleurs ont été imposées dans le contexte de Dodoma et ne réfléchissent point la réalité des besoins du peuple et leurs priorités à regard de leurs moyens d'existence. Ces idées ont échoué d'intégrer les activités de survie et les initiatives de verdissage. Cet article souligne le besoin de développer la planification locale basée sur la reconnaissance de toutes les parties et le contexte local afin d'harmoniser les initiatives de verdissage et les besoins et les activités des résidents.

**Mots clefs :** initiatives de verdissage, stratégies de survie, moyens d'existence, villes semi-arides, la planification urbaine, plan maître, Dodoma, Tanzanie.

## Resumen

Uno de los elementos que caracteriza la ciudad capital de Dodoma es la carencia de áreas verdes como resultado de las condiciones climáticas semi-áridas de toda la región central de Tanzania. A parte de los esfuerzos concretos de parte de las autoridades urbanas de Dodoma para elaborar planes de incremento de áreas verdes en el paisaje dentro de la ciudad, a través del Programa de Desarrollo de la Ciudad Capital, dichos esfuerzos han entrado en conflicto con las actividades de subsistencia de la gente. En éste artículo, se discute que el vacío existente entre la identificación de características de un paisaje adecuado no son consistentes con el estilo de vida de la gente y las condiciones locales. Dicha inconsistencia forma parte de los factores que están contribuyendo a los conflictos que se observan en los intentos por incrementar las áreas verdes de la ciudad y los sistemas de vida de los residentes. Los conceptos de planificación que fueron tomados prestados del plan maestro impuesto en el contexto de Dodoma no reflejan la realidad y necesidades de la gente ni menos sus prioridades en cuanto a subsistencia. Estos conceptos han fallado en integrar las actividades de subsistencia y las iniciativas de enverdecimiento de la ciudad. Este trabajo discute la necesidad de desarrollar sistemas de planificación basados en consideraciones locales que tomen conocimiento de todas las personas afectadas junto con el contexto local como indicio hacia iniciativas de incremento de áreas verdes que sean armónicas y capaces de acomodarse a las actividades de subsistencia y necesidades de la gente.

**Palabras claves:** iniciativas verdes, actividades de subsistencia, ciudades semi-áridas, planificación urbana, planes maestros, Dodoma, Tanzania.