Namibian Journal of Environment

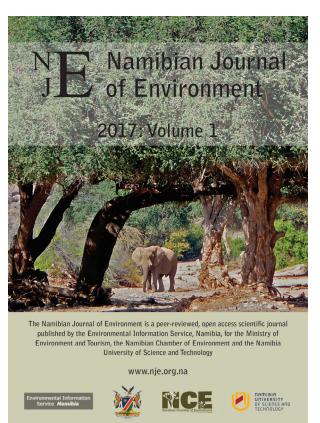
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Addressing informal settlement growth in Namibia

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Introduction

Namibia is undergoing a rapid and major transition from a rural-based society to one based largely in urban areas. This transition is most visible in rapid urban growth, especially in informal settlements that accommodate poor families in shacks on the edges of towns. Namibia's urban areas now have some 140,000 informal houses, a number likely to double over the coming seven or eight years if this trend is not addressed urgently. Similar patterns of rapid, unplanned informal settlement growth are to be seen elsewhere in southern Africa, and in developing countries around the world.

The economic, social and environmental costs of informal growth and unplanned urban development are huge for Namibia as a country, and as a society. New forms of poverty and inequality will be entrenched over generations to come if towns fail to develop in ways that facilitate the transition from rural to urban society. By many standards, the continuous rapid growth of informal settlements is one of Namibia's biggest development challenges.

This article is largely based on results from recent research on informal settlements in Namibia, implemented by Development Workshop Namibia (Weber & Mendelsohn 2017). It provides information about the growth and characteristics of informal settlements in Namibia and describes how local authorities deal with the phenomenon. Based on promising approaches used by some local authorities, the research further makes recommendations on how informal settlement growth could be turned into formal urban growth, contributing towards urban development that is more socially just, economically efficient and environmentally sustainable.

Informal settlements in Namibia

Urban growth patterns

Namibia's transition from a mainly rural towards a mainly urban-based society is reflected by the growth rates of Namibia's towns. Since 2001, census data indicate a decline of the rural population together with continued rapid growth of the urban population. From 2001 to 2011, for example, the rural population declined by more than 20,000 inhabitants, while the urban population increased by more than 300,000 people, fuelled mainly by urban immigration and Namibia's generally expanding population (Figure 1).

Informal settlement growth

Informal settlements in Namibia's towns are growing much faster than the formal parts of towns, contributing most to overall urban growth. For example, from 1991 to 2011:

• Brick or block houses roughly doubled from 73,881 to 163,793.

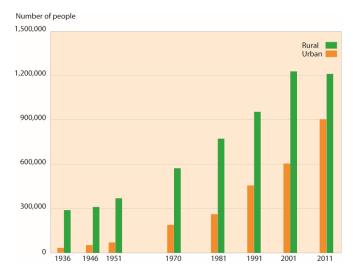


Figure 1: The number of people in rural and urban areas recorded during censuses between 1936 and 2011.

• Informal houses increased more than sevenfold, from 10,288 to 77,899 (Figure 2).

At the time of the last census of 2011, about one third of Namibia's urban population was living in shacks. If these growth rates continue, which is probable if no urgent, decisive and systemic action is taken, then:

- The number of urban shacks will outnumber formal urban brick/block houses by 2025, and they will outnumber all rural houses by 2023. The predominant form of housing in Namibia will then be urban shacks (Figure 3).
- By 2030, Namibia will have over half a million urban shacks in which about 2 million people will live.



Figure 2: Pie diagrams of the percentages, and a table of the numbers of different house types in 1991, 2001 and 2011

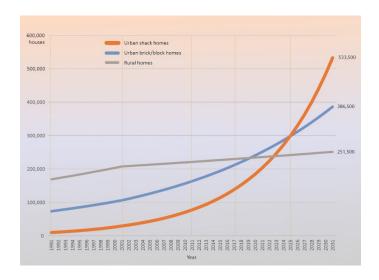


Figure 3: Numbers of formal (brick or block) and shack homes in Namibia between 1991 and 2011, and projected forwards to 2031

The geographic expansion of Namibia's informal settlements can be assessed by comparing high resolution satellite imagery from different years. The comparison of satellite images of 2012 and 2016 in the case of Windhoek, for example, show that more than 15,000 shack-like structures have been built during that period of time, meaning that some 3,500 shack-like structures have been erected each year (Figure 4).

The roof top counts based on satellite imagery were made in the context of the above-mentioned research (Weber & Mendelsohn 2017). Probable informal houses were identified and mapped using the following criteria: they were in areas that lacked a formal structure or layout (for example, of roads and plots); the houses were similar in size (to exclude larger shops, stores or tiny shops and toilets); spacing between adjacent houses was roughly similar in any area; and the roofs of these houses lacked the structure, pattern and size normally seen in low income formal housing. The shack count for each town was done twice by different technicians to minimise errors and bias. Nevertheless, the counts are certain to include some structures that were not houses, and, conversely, to exclude some that were houses. Nevertheless, the counts provide measures of the growth, distribution, size and nature of informal housing.

The situation in many of Namibia's smaller towns is similar, as is clearly visible in the case of Gobabis for example, in Figure 5. In Gobabis, some 3,226 shacks were counted on a 2012 satellite image, and 5,297 shacks on an image of 2016. This is equivalent to more than 500 new shacks per year, at a growth rate of more than 13%.

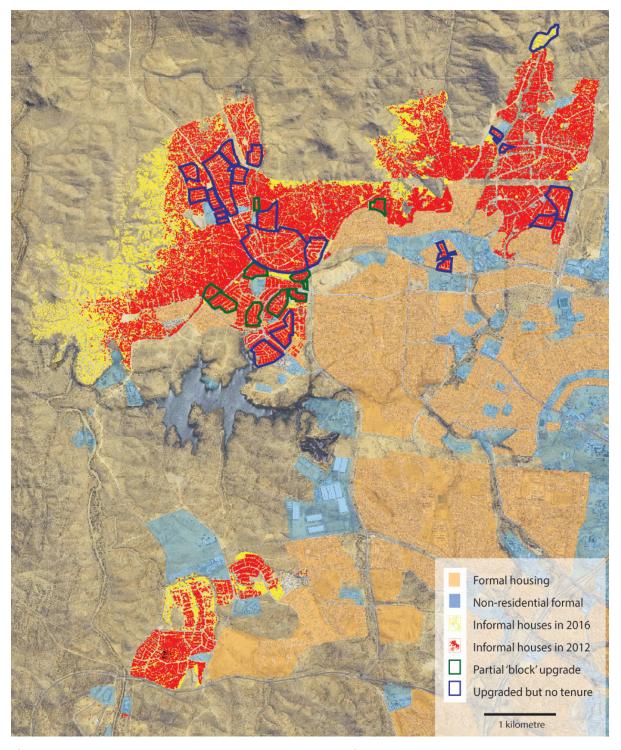


Figure 4: The red dots represent shacks that were mapped on the 2012 image of Windhoek, and the yellow dots those shacks that were built from 2012 to 2016. The areas in blue are block erven purchased by groups of residents, and which are registered by the Surveyor General. The internal subdivision of individual erven was done by the residents themselves and these individual erven are not registered. Nevertheless, once a group of residents has a purchase agreement for a block erf with the City of Windhoek (CoW), they are allowed to build with permanent construction materials. The areas upgraded by the CoW are planned and have different levels of services, but the areas are not proclaimed and residents do not have official titles for their erven.

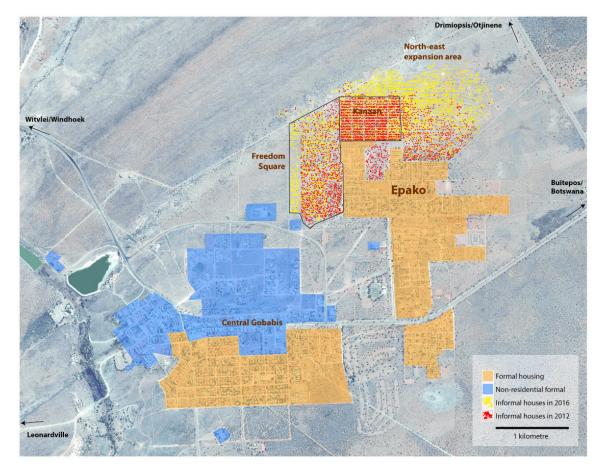


Figure 5: Satellite image of Gobabis taken in 2016 showing the location of informal houses mapped in an earlier image from 2012 and then in 2016

Characteristics of informal settlements

Services

Many of Namibia's informal settlements are characterised by a lack of services. By 2011, for example, almost 60,000 urban households with more than 200,000 people had no access to any kind of toilet (Figure 6). Following a similar pattern, more than 54,000 urban households with more than 200,000 people relied on wood as their main cooking fuel (Figure 7).

Housing materials

The great majority of houses in urban areas are constructed of either bricks or blocks (formal structures) or corrugated iron (informal structures). Corrugated iron is cheap. A simple shack can be erected within a day or so, and in cases where the shack has to be moved, the material can be re-used to erect a new structure in a different location. Local authorities also tolerate corrugated iron in informal settlements, where the use of permanent construction materials for houses is often prohibited. However, many shack residents have the means to build with bricks if they were allowed to do so. Recent research reveals the broad range of monthly incomes in informal settlements, which in certain areas of Windhoek were found to range between N\$300 and N\$35,000, and up to three-quarters of heads of household had some sort of formal employment (Seliger 2016). With these kinds of incomes most shack owners could invest in permanent housing structures, at least incrementally and over time. Residents of informal settlements in neighbouring countries with generally lower income levels than Namibia normally build much more with permanent building materials (in the case of Angola, see for example: DW & CEHS 2005). Similar conditions hold in certain Namibian towns where residents may build with bricks in some informal settlements, sometimes to such an extent that housing with permanent building materials is the dominant type of housing.

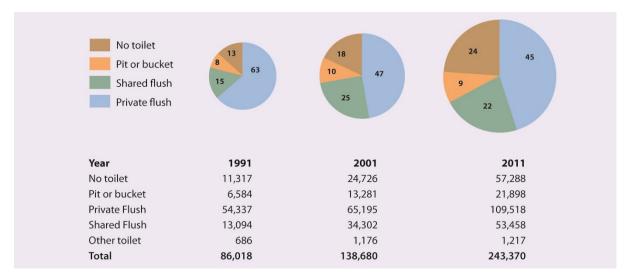


Figure 6: Pie diagrams of the percentages of homes having different types of toilets in all urban areas in 1991, 2001 and 2011, while the number of homes with different toilets are in the table.

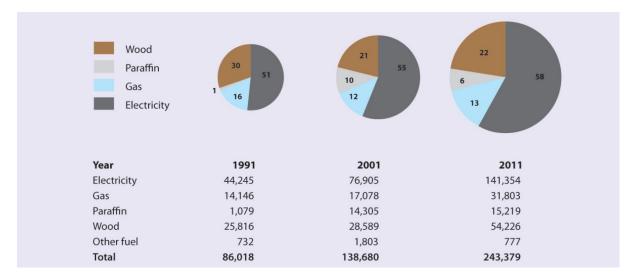


Figure 7: Pie diagrams of the percentages, and a table of the numbers of all urban households using different types of cooking fuel in 1991, 2001 and 2011.

Physical structure

Many informal settlements have irregular physical layouts that are not formally planned (Figure 8). Furthermore, most informal settlements are located at the peripheries of the formal towns, making commuting times costly and time-consuming. The lack of organised and planned physical structures creates various disadvantages for informal settlement residents, three important ones being:

- 1. Laying and providing services to unstructured informal settlements is difficult. Infrastructure such as water pipes, electricity grids and sewage systems are usually laid along roads, without which the installation of infrastructure becomes challenging, indeed often impossible.
- 2. Unstructured and unplanned settlements cannot be legally proclaimed under current planning legislation and policy, effectively condemning them to permanent informal status without tenure rights for their residents.
- Once an unstructured informal settlement densifies, restructuring and upgrading becomes costly, since it usually involves resettling residents to provide space for the layout of roads and erven.

Land tenure

In Namibia, residents with houses erected in unproclaimed settlements cannot have freehold title and do not have formal tenure security over the land on which their homes are built. This has many drawbacks since land tenure security is fundamentally important for:





Figure 8: Examples of unstructured, unplanned and disorganised informal residential areas in Windhoek's Havana informal settlement.

- a. Socio-economic household development in terms of generating wealth;
- b. Use as collateral for commercial loans;
- c. Protection against eviction;
- d. Regulating the transfer of rights, such as under conditions of sale and inheritance, and
- e. Protecting the rights of socially vulnerable people, such as women and the poor.

Environmental Challenges

Informal settlements create, or are associated with, various environmental problems, most of which stem from inadequate services, infrastructure and planned physical structure. Three challenges are of particular concern in Namibia:

- a. Removal of vegetation and degradation around informal settlements;
- b. Open solid waste and pollution of water resources;
- c. Flooding

Assessing the challenge

Urban immigration

Why do so many Namibians move from their rural homes to live in informal urban housing? The major reason for most movements to towns is the quest for jobs and money (Indongo et al. 2013, Pendleton et al. 2014). Other reasons include rural poverty, family issues and education, with many households having multiple reasons for migrating.

There are important linkages between these factors. For example, people seeking higher education at urban universities are also attracted to the greater availability of jobs in urban areas. Graduates are therefore unlikely to return to rural areas. Likewise, economic conditions in towns are particularly attractive to people who live in places where there are few jobs or opportunities to start enterprises. This is the case in most rural areas of Namibia where farming is the dominant land use. Here it is hard to earn significant incomes from farm produce because environmental conditions – notably low soil fertility and shortages of rain – keep farm production very low, with little chance of having surpluses that could be made available for sale. Access to markets is also not easy in a large country with such a small population as Namibia. Additionally, many farmers prefer to keep any surpluses and livestock as security for the future.

For these reasons most cash in circulation in communal areas comes from pensions, orphans' grants, wages for teachers and other civil servants, remittances and retail trade. The majority of income therefore comes from sources that have nothing to do with farming or rural homes. Migrants are thus attracted by urban economic opportunities, but also spurred away by the poor economic prospects that prevail in rural areas. Since migrants have aspirations similar to people who have spent their entire lives in urban areas, planners may expect immigrants to stay in urban areas, have families and have long-term goals for their urban future.

In summary, rural life is tough in most parts of Namibia, especially for anyone wishing to earn a moderate income. There are exceptions: large commercial farms, big livestock holdings on communal land, irrigated smallholdings, lodges and tourist camps, mines, special plant products to harvest and sell (devil's claw for example) and trophy hunting. All these exceptions generate money, but there are too few enterprises to support substantial numbers of people.

Land and housing markets

Calculations based on urban growth-rates between 2001 and 2011 suggest that in 2017 alone, some 11,500 formal and 12,500 informal houses were built. Less than 50% of the housing demand during this year was therefore met by the formal market. This is a clear indicator that the current land and housing market does not cater for the majority of Namibia's urban population, obliging more than 50% of urban residents to find access to land and housing in the informal market. Most of these residents are from the poor and lower middle-income segment of the population.

Housing in the informal market is not for free. The building or purchase of a shack may cost between N\$3,000 to N\$10,000, and rental prices range from N\$150 to N\$2,500 per month, depending on shack location, size and provided services such as water and electricity. Informal residents, therefore, do need considerable financial means to satisfy their housing needs. The problem is that the formal housing market does not provide solutions which are affordable for the lower income segment of the population.

Most government housing programmes, for example, the National Housing Programme (NHE) and the Mass Housing Development Programme (MHDP), have focused on the provision of 'low cost' houses that mostly cost N\$250,000 and more, a price that is above the means of a great percentage of informal settlement residents. The size and outputs of these programmes has further been too small to meet demand effectively.

Ways forward

Innovative approaches practiced by some local authorities

Over the last years, some local authorities have experimented with the provision of minimally- or non-serviced erven for low income residents in unproclaimed urban areas. While the details of the approaches differ from town to town, the underlying principles are:

- 1. Land is planned, surveyed and distributed to low income residents before township establishment;
- 2. Avoidance of lengthy and complex township establishment allows the local authority to provide low cost land immediately, according to demand;
- 3. As the new low income informal settlement is planned and surveyed, services can be provided incrementally and over time as funding becomes available, facilitated by the planned road layout;
- 4. As the land is allocated by local authorities and lies within a planned settlement that will not be changed in its physical structure, residents have 'de facto' tenure security, underlined by the fact that the local authority may allow the construction of houses with permanent building materials;
- 5. The township can be proclaimed at a later stage for residents to acquire official tenure security;
- 6. The construction of the houses is left to the residents themselves, to build at their own pace and according to the available financial means.

In towns such as Outapi and Otjiwarongo, this approach allowed control over most informal settlement growth to the

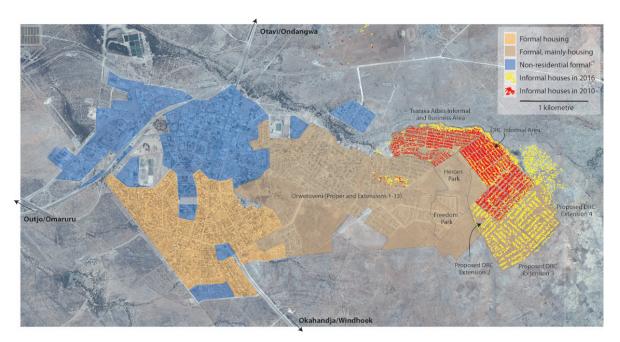


Figure 9: Satellite image of Otjiwarongo taken in 2016 showing the location of informal houses mapped in an earlier image from 2010 and then in 2016. The organised structure of most informal settlements in this town is clearly visible.

present date. While many of these settlements are still considered 'informal', they are in fact planned and surveyed settlements (Figures 9 & 10). Many such settlements in Outapi, for example, have been proclaimed in the meantime. Many others, such as in Otjiwarongo, resemble low income formal areas with different levels of services.

Similar approaches can be observed in other towns in Namibia, such as Ruacana, Rundu and Oshakati. However, while towns implement such projects on different scales, they rarely have the necessary dimension to achieve complete control over informal settlement growth. The main challenges faced by local authorities include the availability and technical capacity of their staff to implement such projects on a larger scale, as well as a lack of funds to ensure adequate town planning, surveying and consulting engineering services.

The provision of low cost land is the most effective measure to provide access to housing for low income immigrants and to turn informal into formal urban growth. As the approach is applied by many local authorities across Namibia in some or other way, it provides a basis that can be reinforced and scaled up to meet low cost land and housing demand.

Town planning, land surveying and servicing costs

In order to create a properly planned and structured settlement, two basic services are needed: town planning and land surveying. The town planner (ideally in collaboration with local authorities and residents) develops the layout of the new settlement, while the land surveyor transforms the layout into reality on the ground by marking the erven, roads, and any other physical features of the layout, with pegs.

Of all investments that go into the development of a new settlement, town planning and land surveying cost least. Only 3-5% of the cost of a fully serviced erf is for town planning and land surveying costs, with the remaining costs being attributed to the installation of services such as water, sewerage, electricity and roads. In the case of a fully serviced erf costing N\$100,000, only N\$3,000-5,000 is therefore for town planning and land surveying.

Minimal services that ensure access and safe sanitary conditions, as for example communal water points and levelled roads, can be provided at equally low costs. Basic sanitation can initially be provided by giving residents an incentive to build pit latrines as a temporary solution until domestic water connections and a sewerage system are installed.

A minimally serviced erf, within a settlement that is planned and surveyed and can be upgraded with services over time,



Figure 10: Road layout in the DRC informal settlement in Otjiwarongo. In many areas, the Municipality allows the construction of houses with permanent building materials, given that the settlement has a planned structure. As a result, while residents may initially put up shacks for temporary housing, investments are soon made into permanent structures that provide much better living conditions and allow residents to invest into their properties.

can therefore be provided at approximately N\$10,000. This is an amount that is affordable by a large percentage of informal settlement residents. Table 1 provides a summary of the costs that constitute a planned, surveyed and minimally serviced erf of 300 square metres. The calculation of land surveying, town planning and servicing costs of a specific layout is a complex process, with costs depending on a variety of variables such as: size of erven, size of layout, topography, soil composition and the availability of bulk services. While costs may vary considerably according to these variables, benchmark numbers can nevertheless be established with the purpose of providing a basic notion of the costs involved in planning, surveying and servicing a new settlement.

Calculations have been done for a sample township with following specifications:

- Size of erven: 15 x 20 meters (300 square meters)
- Road width: 12 meters
- Bulk infrastructure: The calculations are based on the assumption that all bulk infrastructure exists and can be connected to. The costs therefore only reflect distribution within the township and connecting points to bulk at a distance of 100 meters from the township.
- Soil conditions: loose, without special obstacles for excavation (for example, rock)
- Topography: flat

Table 1: Costs of a minimally serviced erf (N\$ per erf)

Land surveying Topographical survey	278
Cadastral survey	1,478
Town planning	
Layout planning fees	1,000
Statutory Application	867
Services	
Communal water point reticulation system	1,667
5 communal water points (prepaid system)	2,106
Levelled roads	3,095
Total N\$	10,491

Additional costs will accrue as bulk infrastructure has to be upgraded and expanded. However, if the provision of erven is on a cost recovery basis, available local authority resources and government subsidies can be invested to ensure that bulk infrastructure expands as the town is growing.

Costs of providing minimally serviced erven on a national scale

A new settlement with 300 erven with costs per erf at N\$10,000 costs N\$3-million. The planning, surveying and servicing of a settlement of that size may take approximately 6 months. The proceeds of the sales of the erven can be kept in a revolving fund, in order to initiate the planning, surveying and servicing of the next settlement as soon as the erven of the previous settlement are sold.

With an initial fund of N\$3-million, a town can therefore initiate a financially sustainable process of providing low cost erven. Depending on the efficiency of developing the new settlements, 300-600 low cost erven can be provided per year. Many mid-sized towns in Namibia would cover their housing demand with this number of erven. Smaller towns would satisfy demand with a lower number, such as 50, 100 or 200 erven per year. Such smaller towns would therefore require initial funds of N\$500,000, N\$1-million or N\$2-million respectively.

Projections based on informal housing growth rates between 2001 and 2011 suggest that in 2017 alone, more than 12,000 new informal houses would be built, with the number increasing each year. This number is an indicator of the land and housing shortfall in the low income segment of the market, suggesting that at least the same number of low income residential land or housing units would have to be provided annually to transform informal into formal urban growth. At N\$10,000/erf, this adds up to a required minimal investment of N\$120-million or less than USD10-million, with which an effective and potentially financially sustainable programme for the provision of low cost land on the national level could be initiated. These costs are low if compared to certain government expenditures, such as N\$2,400-million that was budgeted for a new parliament (Shinovene 2016), the initially budgeted N\$7,000-million for the Hosea Kutako airport upgrade or the N\$700-million subsidy for Air Namibia in 2016 alone (Weylandt 2016).

Much of the investment could further be recovered by increasing the basis of payment of rates and taxes, which, in Namibia, are only applied in proclaimed, formal areas of towns. For example, if 30,000 of Windhoek's informal settlement households would pay N\$100 in rates and taxes per month, this would provide the City of Windhoek with an additional income of N\$3-million per month, N\$36-million per year or N\$360-million over the span of 10 years. While the upgrading of existing informal settlements may take time, this tax base could nevertheless be rapidly expanded by ensuring that the future growth of towns is taking place in planned and surveyed settlements that can be proclaimed, and that rates and taxes applied.

Conclusions

Rural to urban immigration and associated urban growth is not a Namibian phenomenon, but a regional and international trend. The world is urbanising fast and Namibia is no exception. People migrate from rural to urban areas in search of formal and informal employment, as well as improving their access to health and educational facilities. As towns are the

motors of economic growth, this transformation from a rural to an urban society provides considerable social and economic opportunities for Namibia. If urban immigrants can be integrated into the towns' economies, they can become productive members and contribute towards generating wealth and development. Access to a piece of land where immigrants can establish their homes provides one of the very basic conditions for households to build secure investments, becoming an integral part of the formal town, and contribute to its economic base and public funds.

A general recommendation

All possible proactive steps should be taken to avoid establishing settlements that are disorganised, unstructured and dense shanties of corrugated iron shacks. Conversely, steps taken towards creating ordered settlements where low income residents own their land, can build permanent homes and look forward to the incremental provision of services, should be encouraged. These steps require proactive planning of informal settlements before people settle there.

Recommendation 1: Focus on the provision of land, not housing

To address the housing crisis of Namibia's low income urban residents, the focus should shift from the provision of housing towards the provision of affordable land. The construction of houses should be left to the residents, allowing them to build at their own pace, with a minimum of obstacles and a maximum of encouragement. Government and local authorities should supply land with a minimum of cost and at maximum speed.

Recommendation 2: Gain control over informal settlement expansion

Gaining control over informal settlement growth should be a priority for any town in Namibia. This requires a supply of properly planned and affordable low cost land.

Recommendation 3: Support innovative, proactive and pragmatic approaches of local authorities

Local authorities are the key actors that manage urban development in their areas of jurisdiction. They normally identify local challenges long before anyone else, and they are often the first to produce innovative and pragmatic solutions. These local initiatives and answers should be supported by government, NGOs and the private sector. Specific support should also be provided to help local authorities to:

- Manage the complex, and often lengthy township proclamation process;
- Manage projects to provide low cost land or upgrade existing informal settlements;
- Promote aspects of social inclusion, economic efficiency and environmental sustainability.

Recommendation 4: Accelerate the provision of tenure in structured or upgraded informal settlements

Many informal settlements are ready to be proclaimed, having planned physical structures and demarcated erven, for instance. Without any additional funds the settlements could be proclaimed by removing administrative obstacles that stem from current policy. A national inventory of settlements that are ready for proclamation should be assembled, and their proclamation fast-tracked by the Ministry of Urban and Rural Development.

Recommendation 5: Attract private sector investment

The provision of low cost urban land can be done on a cost recovery basis, therefore facilitating private sector involvement, while safeguarding real benefits for local authorities. Land can be supplied with minimal use of public funds by government, as is the case with the development of middle and upper income housing.

Recommendation 6: Attract international donor funding and Corporate Sector Responsibility (CSR) support for upgrading projects

Many dense and unstructured informal settlements cannot be upgraded without significant resources. Scarce public funds should be assigned to such areas, and used to leverage additional funding from international donor organisations and CSR funds from the Namibian private sector.

Recommendation 7: Turn rapid urbanisation and the creation of new townships into an economic opportunity for Namibia

The development of Namibia's rapidly growing towns should be guided by principles of social inclusion, economic efficiency and environmental sustainability. Planning provides opportunities to create new townships that are conducive to the economic and social needs of its residents, and the town and the nation. Migrants from impoverished rural areas need homes that provide them with confidence, services, security and long-term outlooks to be economically productive. The integration of low income residents into the formal land market will also raise public funds from rates and taxes for the betterment of all.

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