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The effects of climate change on informal settlements

Commentary by Nokwenama James, 31 January 2023

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1. INTRODUCTION

Informal settlements have played a significant role in providing the urban poor with access to shelter and close proximity to the economic opportunities in the large urban centres. However, most of the climate-vulnerable communities live in informal settlements. The impacts of climate change have been particularly devastating, and further exacerbate the existing inequalities and lower socio-economic conditions. This commentary, submitted to the Special Edition on '*Re-imaginaries of just, equitable and efficient future human settlements*', provides an overview of the effects of climate change, particularly in informal settlements.

2. INFORMAL SETTLEMENTS IN SOUTH AFRICA

Informal settlements that form part of the complex network between towns and cities have further cemented their presence in the spatial fabric of South Africa's urban and peri-urban landscape. Since 1994, South African cities have experienced a growth of informal settlements, particularly in specified areas with their formal upmarket residential development and its increasing demands for domestic employment/cheap labour force (Huchzermeyer, 2009: 59). The General Household Survey report by Statistics South Africa indicates that, in 2020, over 84.0% of South African households lived in formal dwellings, while 11.4% resided in informal dwellings, and 4.3% in traditional dwellings. Gauteng and the Western Cape province at 18.3% and 17.6%, respectively, had the most recorded households living in informal settlements, followed by the Free State and the North-West province, both at 14.3%.

At the metropolitan level, the data indicates that informal dwellings were most common in Buffalo City 27.2%, Johannesburg 19.0%, and Cape Town 18.6%. EThekweni metro, at 6.0%, recorded the least percentage of households living in informal dwellings. The findings from the Household Survey correspond with where the major economic activity is concentrated in the large urban centres. Collectively, metropolitan areas have only 15.5% of households living in informal dwellings, while 83.2% of households reside in formal dwellings.

The existing narrative views concerning informal settlements and informality as a whole perceive informal settlements as places of crisis or ruins, being at the

verge of "death" (Mbembe, 2003: 11). Terms such as 'unplanned', 'illegal', 'slum upgrading', 'formalise and regulate', as well as 'eradicate' have dominated the policy and political rhetoric environment/discourse for some time. Policies, including the Breaking New Ground and the National Development Plan 2030, have made strides in recognising the role of informal settlements in the complex network of towns and cities, their role in providing the poor with access to affordable urban land, and equipping them with the necessary basic infrastructure and services.

3. EFFECTS OF CLIMATE CHANGE ON INFORMAL AREAS

Informal settlements not only represent some of the failures of government and government policies, but also the denial of the universal human rights for shelter, home-making, and access to a livelihood (Lohnert & Steinbrink, 2005; Martin & Mathema, 2006; Huchzermeyer, 2009). The limited access to basic services perpetuates the vulnerability of informal areas to the devastating effects of natural and unnatural hazards, as well as climate change. The high concentration of people, homes and other buildings, and infrastructure in urban areas increases the exposure and vulnerability to floods, earthquakes, infectious diseases, crimes, fires, transport, and industrial accidents (DCOG, 2016). In most of the urban areas, the physical environment, particularly in townships and informal settlements, is neglected, poorly planned, designed and managed, with limited access to basic services. This brings to question the relevance and effectiveness of the human settlements and built environment plans/strategies to deal with the challenges presented by climate change and other disasters.

The cited provinces and metros with the highest percentage of people living in informal settlements are some of the worst affected areas by the recent heavy rains and flash floods. In February 2022, heavy rains and flash floods in several parts of Gauteng province left many properties, businesses, and vehicles submerged in the floodwaters. In Ivory Park informal settlement, in Tembisa, Gauteng, the heavy rains claimed one life and left over 180 people homeless. On the 18 April, the government declared a National State of Disaster, following the devastating floods that claimed the lives of over 400 people in KwaZulu-Natal and other parts of the country. Catastrophic floods and heavy rainfall continued to cause devastation to many parts of the country throughout the year.

The territorial floods in KwaZulu-Natal, and exponentially heavy rainfall in the Eastern Cape and other provinces, caused landslides, damaging houses, roads, health and school infrastructure, and displaced thousands of people. Over 300mm of rain, roughly 30% of mean annual rainfall, fell over four days between 9-11 April 2022 (MacRobert, 2022). The communities located in low-lying areas and on riverbanks in and around the eThekweni metro were worst affected by the territorial rains. Many people, most of whom are the urban poor, lost their homes, possessions, and loved ones in the floods and landslides.

Many reasons have been cited as the possible causes of the flooding and its devastating impact on development: poor planning and governance; ineffective early warning systems; lack of maintenance of infrastructure and stormwater drainage systems; non-compliance with building regulations, and inadequate planning in settlements along low-lying areas and floodplains.

The weaknesses in the spatial planning systems in municipalities are cited as major causal factors that need attention. Maladministration, zoning, and inadequate enforcement of the municipal by-laws are planning instruments that need to be revisited,

in the face of increasing climate change-related incidences. Effective strategies are required to implement the regulations in terms of the Spatial Planning and Land Use Management Act 16 of 2013 (SPLUMA) to manage settlement planning.

Commenting on the declared state of disaster, the Minister of Cooperative Governance and Traditional Affairs, Dr Nkosazana Dlamini Zuma, noted that climate change played a huge role in the flooding in the Eastern Cape and KwaZulu-Natal regions (Engineering News, 2022). The Minister emphasised that "climate change is with us and we are beginning to feel the effects of that" (Engineering News, 2022). Furthermore, the Special Report on Global Warming of 1.5°C (SR1.5) identified Southern Africa as a climate change 'hotspot'. This finding means that Southern Africa is a location where the impacts of climate change are unusually high in a global context. The geographical location together with the socio-economic development state of many Southern African countries, and rising temperatures make it particularly vulnerable to climate change (Scholes & Engelbrecht, 2020). Therefore, all spheres of government, particularly municipalities and all relevant stakeholders, should begin to consider how to build resilient municipalities and communities, in order to prepare these for disasters and climate change?

4. CONCLUSION

In summary, informal settlements are at the forefront of the impacts of climate change. Their increased vulnerability to climate change, the lack of resources, and ill preparedness for disaster further exacerbate the devastating impacts of climate change. The Integrated Urban Development Framework (IUDF), government's policy position to transform and restructure South Africa's urban spaces, recognises the need to strengthen our "resilience and adaptive capacity to climate-related hazards and disasters, and to realise the opportunities associated with the rising incidence

and costs of urban disasters, the current and anticipated impacts of climate change, and the protection of critical ecosystems and natural resources" (DCOG, 2016: 31). Local municipalities, with their wide-ranging responsibilities, insufficient capacity, and limited funding remain at the centre and are the first line of response in addressing the disasters. Local government is also at the frontline in anticipating, managing, and reducing disaster risks, setting up early warning systems and establishing disaster-management structures to manage the impacts of the climate change-induced extreme weather events.

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