



CLIMATE CHANGE AND OUR BUILT ENVIRONMENT

The aftermath of floods in the eThekweni region of KwaZulu-Natal. The poor disaster-management response has been criticised by residents and experts in climate change and the built environment.

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SA risks more devastation if it doesn't integrate and co-ordinate its disaster management response, write Hope Magidimisha-Chipungu and Sue Bannister

KwaZulu-Natal saw in the 72 hours between April 11 and 13, four times the total expected rain for the month of April.

While these astounding events should not surprise us, the floods have exposed how vulnerable our urban areas are to climate change.

No less than 448 lives were lost in April, countless people were displaced, and property and infrastructure worth billions of rands were destroyed. Six weeks later, many families are homeless, bridges remain non-functional, and some roads are still not passable. Poor families have been disproportionately affected. The full social and economic impact of the May rains have not yet been calculated, but it is estimated that the costs of rebuilding infrastructure from the April disaster will be about R25bn for government infrastructure alone.

The great tragedy is that much of these losses could have been avoided or at least reduced. Our state of preparedness has been put to the test, and this should serve as a better resilience against similar events in future. We need to be proactive and find ways to adapt to climate change. This is vital if we are to reduce the vulnerability of poor communities, build our economy and reduce poverty.

There are a host of ways in which we can enhance resilience and reduce vulnerability to natural and other disasters and emergencies. We discuss four of these below.

First, we need to address the gaps in information and awareness around disaster risks and management, which SA's National Disaster Management Framework calls for. This includes providing information on what the risks are and how they can be mitigated, especially in areas which are more vulnerable to disasters. Traditional leaders and ward councillors have an important role to play in this

regard. They must be aware of the specific risks in their area and communicate how residents can mitigate risks, stressing the importance of compliance with legislation and bylaws that will reduce risk for residents.

The knowledge and lessons gained through previous disasters should be captured and risk information and data consolidated.

Second, we need integration and co-ordination between existing structures concerned with disaster management. This requires greater communication between national, provincial, metropolitan and district management centres and local municipalities, including the community and community leaders, with an emphasis on the prevention and mitigation of disasters. This is a responsibility of all spheres of government, entailing engagement among and commitment of citizens, traditional leaders, organised civil society, business, research institutions and institutions of higher education.

The Disaster Management Act No 57 of 2002 and its 2015 amendments emphasise the need for a cross-sectoral approach through ensuring that disaster risk reduction becomes an institutional requirement for all sectors and spheres of government. Despite this, there is still a lack of integrated and co-ordinated planning and response to disasters.

Research by Salga [South African Local Government Association] found that only 12% of local municipalities had a clear understanding of roles and

responsibilities related to disaster management. Disaster risk reduction is not seen as a cross-cutting, interrelated issue which must be a key element of built-environment functions, such as urban planning, human settlements, engineering and infrastructure. This interrelatedness requires a strong degree of co-ordination within municipalities as well as between municipalities and other role players.

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In many cases the split responsibilities for aspects of these functions between local and district government make this co-ordination complicated and cumbersome.

This problem is further compounded by many role players not placing sufficient emphasis on disaster management, nor adequately working to reduce the risk of disasters.

Third, we have to improve our planning and how we approach infrastructure development or else face dramatic increases in adverse effects. The increasing agglomeration of people, buildings and infrastructure in urban areas makes us significantly more vulnerable to climate change. The built environment has a long

lifespan – as we well know cities are built to last. So, we need to take into account the problems of today plus those that are likely to arise in future.

There are many ways in which we can make our urban areas more resilient, including water-sensitive urban design, sustainable drainage systems, reducing the area of hard surfaces and increasing green ecological infrastructure, for example through

planting vegetation which can bind topsoil and hold it in place to slow erosion.

The CSIR's Green Book provides detailed information on adaptation measures. All of these can also contribute towards creating improved living environments, where green spaces can be used for recreational facilities, trees will provide protection from sun and wind, and water tanks can improve access to water.

The location of where building should take place also matters. Housing and infrastructure must be kept out of low-lying areas and floodplains, and steep slopes must be avoided. But in KwaZulu-Natal – and in many other areas – the shortage of suitable land means that many people have little option other than to build on high-hazard areas – even where they are aware of the risks.

Fourth, as the National Development Plan emphasises, the most vulnerable members of society such as women, children and the disabled should be at the centre of our considerations – especially the poor and those who live in informal, unplanned or badly built structures and settlements. Most importantly, through a bottom-up approach, it is paramount that we involve communities in building resilience. Building trust and ownership can improve co-ordination of disaster management across government agencies, helping to manage conflicts that come from trade-offs and raise awareness on flood risk.

There is no easy way out but that of taking a long-term perspective of building resilience while ensuring co-ordination in implementing some of the more immediate measures.

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