

## Climate change

### Applying climate change projects to local social realities

# This innovative Water Research Commission (WRC) project bridged the gap between science and society to support community-based adaptation to climate change.

## Background

Even if greenhouse emissions are radically decreased, poor people in the developing world will still feel the impacts of climate change on their lives and livelihoods. While this may be manifested in drought and floods, rising temperatures and shifting weather patterns will also affect the availability and quality of basic water supply.

World-class hydrological studies have been conducted that model the various impacts of climate change on South Africa's catchments. These studies are used to inform national, and possibly catchment level, planning, yet poor communities have largely been absent from information and planning processes.

While macro-plans are no doubt important, community level adaptation planning is essential in order to develop relevant and implementable solutions. It aims to enable communities to cope with the impacts of climate change by becoming more resilient.

In this WRC project, hydrologists and climate modellers worked with NGO practitioners to develop, downscale and 'translate' scientific projections, based on livelihood and vulnerability information created jointly with pilot communities.

NGOs ran community workshops that were specifically tailored around building awareness of climate change and the need for community-based adaptation; exchanging knowledge with communities, including presenting the downscaled climate model projections for their areas; and supporting communities to develop local action plans.

Full-day workshops were conducted with community groups in four areas: KwaNgcolosi and Nxamalala in the

uMgeni River catchment in KwaZulu-Natal; Goedverwacht in the Berg River catchment and Herbertsdale in the Breede River catchment in the Western Cape.

These areas were chosen based on criteria developed by the NGOs and hydrological modellers, and included: local level organisation and leadership, presence of an NGO or other support structures, climate change signal, and availability of hydrological data at the hydrologically relevant scale.

The rough outline of workshops devised by participating NGOs included:

- Presentations and interactive activities to raise awareness about climate change
- Participatory methods to look at present situation and resulting as well as potential vulnerabilities
- Sharing information from downscaled climate change models as well as hydrological impact modelling. The latter included, but was not limited to, projected changes to hot days, rainfall patterns and water availability.
- Joint design of adaptation activities for the present and near future.

## Key findings

### 1. Awareness and knowledge

Community members in the four pilot sites were experiencing the impacts of climate changes in their area, although they did not have the scientific language to describe 'climate change' as such. By providing people with information on climate change, they are equipped to meaningfully enter the discourse on climate change. This empowers them to participate in that discourse with an enhanced degree of agency. By increasing their voice in the public sphere and directing it to the right players and decision-makers, they acquire social 'weight' and significance.

The main benefit of the workshops was that participants accepted that change, while inevitable, is to be expected and they recognised their own agency to cope and adjust. In formulating such responses, it was almost impossible – and not particularly helpful – to separate ‘water’ and ‘climate change’ from other challenges that a community faces.

## 2. Applicability

For the uptake of information to lead to the community taking action, the intervention was most likely to succeed if the selected community evidenced certain criteria, inter alia: high levels of civic engagement, social cohesion and self-mobilisation; community leadership; reflection and thus awareness of existing vulnerabilities and susceptibility to direct effects of climate change; high levels of interest, influenced in particular by engagement in activities (such as communal gardening) motivated by concerns around food and water security; and a knowledge of its history.

## 3. Interdisciplinary work

The project showed the importance of interdisciplinary work and linking scientists to local developments. The effectiveness of both scientists and NGO practitioners is strengthened by this exchange.

Knowledge developed through a collaborative process of this nature is immediately useful and could also be a more effective way of developing appropriate responses at a policy level.

## 4. Building networks

Communities need to establish links with appropriate organisations and institutions that will support and further enable them to realise their action plans. As they build networks with non-governmental, municipal, state, academic and business institutions, cooperation and consultation skills are developed, and thus, communities become less isolated and vulnerable.

The research team found using an Asset Based Community Development (ABCD) approach is a good starting point for enabling communities to mobilise their resources. For communities that are marginalised, either due to their remote geographical positioning, or as a result of poverty, sustaining the momentum relies heavily on facilitation by an individual or an organisation with strong external links.

## 5. Bigger, broader questions

Aside from adaptation activities in local areas, stakeholders need to take action in response to climate change in the areas of mitigation and adaptation that impact on the broader environment and economy.

There are few opportunities for community action to engage with or participate in broader power structures around climate change. Community-based adaptation cannot

happen in a vacuum.

These structures need to put climate change on their agenda and to create openings and opportunities for community engagement.

Ideally, once communities are able to engage in the climate change discourse and have developed networks, they will be in the position to contribute to debates and mobilise – beyond their previous sphere of influence – for structural change.

## 6. Local impact of intervention

Participants were unequivocal that they benefited from becoming more aware of climate change and from sharing scientific and indigenous knowledge of the past. While one of the aims of the project was to assist communities in formulating action plans around climate change adaptation, this was not one of the immediate results.

This was for three reasons: First, community members wanted to engage with their immediate needs and something that was tangible. It was not that they only cared about the immediate term, but that it would remain the focus but within the longer-term horizon.

Second, land-use and using land for one's livelihood, emerged as a key factor in whether climate change activities were perceived as pressing.

Finally, any external intervention is used by the community to bolster the direction in which they are already moving, rather than focusing on the external organisations aims.

In KwaNgolosi this meant facilitating a meeting with eThekweni Water and Sanitation around recurrent problems, and exposing garden groups to new approaches to trenching and rainwater harvesting. No explicit action plan was formulated as the community was not well organised at that point in time.

In Goedverwacht, the community used information generated by the models to bolster their argument for land tenure, and succeeded in securing long-term leases from the Moravian Churn, which owns the land on which they live.

This has enabled the farmers to access support from relevant government institutions, including clearing some of the aliens that are choking the river. Workshop participants were also given the tools to record and monitor their own weather, and to participate in an area-based network.

A number of plans were made here, as the area had already been introduced to climate change, saw the link between the issues, the role of the NGO and their lives, and had strong participants and leaders.

In Nxamalala, participants were working on nearby farms and in a sawmill, but wanted to start their own farming. Although an outside NGO support for new farmers was introduced, internal community divisions made it unlikely that this would be pursued.

In Hertbertsdale, there was limited cohesion within the community, and the pressing concerns of drug-abuse, unemployment and limited opportunities for the youth meant that there was poor community take-up of climate change issues.

## Recommendations

Catchment management agencies and forums need to integrate community-based adaptation into their planning as they are being formed. Modelling is needed at this level for stakeholders to engage with and inform planning.

Local and district municipalities need to prioritise and support community based adaptation in their climate change response strategies as a matter of urgency. They further need to recognise that there are different forms of adaptation to use in different circumstances and that community-based adaptation needs to be implemented in a participatory way.

Government departments need to ensure that extension officers implement community-based adaptation by offering 'holistic' support, not just expertise. Extension officers can be used as facilitators and conflict advisors.

Lastly, security of land tenure should be enforced, while rights to water, sanitation and food need to be realised. These are prerequisites to community-based adaptation to climate change.

### Further reading:

To obtain the report, *To obtain the report, Planning for adaptation: Applying scientific climate change projections to local social realities* (**WRC Report No. 2152/1/15**), contact Publications at Tel: (012) 330-0340; Fax: (012) 331-2565; Email: [orders@wrc.org.za](mailto:orders@wrc.org.za) or Visit: [www.wrc.org.za](http://www.wrc.org.za) to download a free copy.