

Sub-Saharan African Cities:

Five-City Network to Pioneer Climate Adaptation through Participatory Research and Local Action

Fairhurst, L. and Rowsell, P. UN-Habitat (2011). *Adaptation: Infrastructure, Slums and Deserts*. Cape Town: Ceilings improve livelihoods in the face of climate change.

Cape Town: Ceilings improve livelihoods in the face of climate change

More and more Sub-Saharan cities are finding that on top of basic water and sanitation, they must provide proper low-income housing to ever-expanding slum-dwelling populations. On both counts current and prospective local environmental/weather conditions must be taken into account in an integrated approach, one that includes multiple dimensions such as socio-economic development (poverty reduction) and public health. Since this demographic expansion consists of second- or first-generation migrants from national or foreign rural areas, any improvements must come hand in hand with awareness-raising efforts and participatory management at grassroots level for the sake of sustainability in the face of climate change.

From 1994 onwards the South African government has been faced with a huge low-income housing backlog, and this is why its experience is so valuable for other countries across the continent. As part of the new political dispensation and under the Reconstruction and Development Programme (RDP), some 1.8 million housing units were built in the 10 years to 2005 (due to continued demographic growth, the backlog reached 2.2 million in 1997). By late 2004, though the authorities recognised that this unprecedented, worthy scheme was flawed and had not always benefited the low-income public it was aimed for. Therefore, the National Department of Housing launched a new housing policy, *Breaking New Ground*, which represents a radical shift “from quantity to quality” as well as a more participatory, multi-dimensional approach.

Local issues related to climate change and sustainable urbanisation

- The Cape Town population has doubled (to 3.5 million) over the past 20 years or so, making it the second largest city in South Africa; the recent slower expansion reflects the effect of HIV/AIDS and a probable drop in rural migration
- between 1993 and 2005, the number of informal dwellings grew from over 28,000 to 98,000. By early 2009, over 140,000 households still lived in makeshift houses (77 per cent in informal settlements and the rest in backyard shacks)
- today’s slum population is over 400,000 and the housing problem has grown more acute
- poverty affects 23.6 per cent of the population (or more than 183,000 households), with 20.4 per cent of native Africans unemployed
- Cape Town is South Africa’s largest city for land area, with 307km of coastline
- according to the city’s 2010 *Energy and Climate Action Plan*, climate change in Western Cape province is to combine warmer temperatures, a rise in sea levels, reduced annual rainfall and more frequent and severe storm events
- the project discussed here is located north of the city in the poorly served township of Mamre (population: 10,000, largely unemployed), where RDP housing had been built in a ‘Condensation Problem Area’ prone to particularly challenging weather conditions (rain, strong winds, damp and cold).

The problem

RDP at Mamre took the form of a 500-house project launched in 1997. The municipality in charge worked to what were at the time considered as high standards, and the local community was

Sub-Saharan African Cities:

Five-City Network to Pioneer Climate Adaptation through Participatory Research and Local Action

consulted (as opposed to genuine participation). However, there were no ceilings to insulate the interiors from the raw corrugated iron roofs. On top of damp and cold, residents' health was further damaged by the spores and associated fungi that bred on either side of the roofs. By the time (2003) the Western Cape province began receiving additional central government subsidies in acknowledgement of the need for extra protection from the climate, all the housing units had already been built without insulating ceilings. Residents were already experiencing poorer health conditions, as were thousands across Cape Town. On top of this and as noted in a 2006-2007 report from the UN Commission on Sustainable Development, *"low-cost houses have been built with no consideration to energy-efficient design principles, thereby condemning already poor and suffering households to low-quality, uncomfortable and 'costly' houses. Poor households have to spend large amounts of money on fuel for space heating and normally, dirty, polluting fuels such as paraffin and coal are used."* The report continued: *"building without attention to thermal performance may reduce initial costs slightly, but will expose residents to a lifetime of low thermal comfort, high energy costs and cause the high levels of energy-related air pollution encountered in low-cost residential areas to prevail in the future."*

Promising practice in brief: A pilot programme for better weather resilience

As the building programme was already completed, the Western Province decided to retrofit RDP housing units with ceilings. The scheme was unprecedented and Mamre was chosen for a pilot project starting in 2010. The relatively cheap technology tackles health, livelihood and energy issues in low-income households. The township was selected due to its comparative small size and the ability for the funding to retrofit a larger proportion of the RDP houses (240 out of a total 500) within a single community. The participatory scheme was an opportunity for local skills development and awareness-building.

Promising practice (1): Insulation for improved health, lower energy costs

Reduced heat loss and energy spending : Heat loss through the roof is often greater than any occurring in other areas of a house, and therefore a ceiling is one of the most effective ways to insulate a house. In cold conditions, a ceiling can reduce space heating costs by up to 50 per cent.

Improved health conditions at Mamre: Early evidence (including residents' testimonies) shows that health conditions, especially among children, have improved since ceilings have been retrofitted. This comes as a significant achievement in communities that are already exposed to serious health risks through lack of proper water and sanitation facilities (cholera, typhoid), heating (pneumonia, tuberculosis) or electric power for lighting and cooking (respiratory diseases caused by paraffin or coal), and also stand to suffer the economic consequences in terms of time off revenue-earning occupations, healthcare costs or performance at school.

Promising practice (2): A participatory process

Empowerment: At the formal project launch with ICLEI – Africa and the City of Cape Town in June 2010, a 'volunteer community committee' of project beneficiaries was set up and approved. The committee held a role that was/is accountable to both the City of Cape Town and ICLEI, this role involved a number of sub-roles such as:

- To ensure that the installation of the ceilings was being done to civil society member standards (to ensure that the community members/home-owners were not disappointed in the end result)
- To ensure that the process of entering the households and regarding the personal property within the households was secure and respected

Sub-Saharan African Cities:

Five-City Network to Pioneer Climate Adaptation through Participatory Research and Local Action

- To interact with community members throughout the project lifespan toward increasing education, communication and awareness of climate change and related issues,
- To carry out community questionnaires and feedback appropriate information to ICLEI and the City of Cape Town. Members received training on climate change and its likely effects at global and local level.

Enhancing public awareness: Plain language and pictures were prominent among awareness-raising efforts (based on ICLEI Africa's Interactive Climate Change and Climate Impact Tool (ICCCI). Committee members disseminated the information all around them and facilitated informal working groups within the community to encourage participation in a bid to enhance the adaptive capacity of the community. Councillors, leaders and community members from various ages, gender and cultural backgrounds have been mobilised.

Conducting ex-post surveys: The committee was also shown how to conduct an early *Livelihoods and Risk Assessment* questionnaire to gather qualitative and quantitative information around how the retrofitting (insertion of the ceilings) has been perceived to affect the livelihoods and well being of the community members. The rationale behind this mutual confidence-building exercise was to broaden the sample for better statistical reliability.

Mobilising young people: Some 30 local young people were split into groups, each of which was handed a camera to enable them to illustrate what 'energy' meant to them. This gave rise to discussions on the socio-economic role of energy and alternative sources in the face of climate change.

Promising practice (3): Local skills development

The retrofitting work was carried out by members of the community after training into various skills: labourer, foreman, carpenter, painter and security guard. This skill development programme ensured that money spent on the ceiling works went back into the local economy. More broadly, expectations are that the capacity building will allow beneficiaries (with support from the Cities Livelihoods department, a Branch within the Environmental Resource Department of the City of Cape Town) to set themselves up as service providers within the local area.

Promising practice (4): Monitoring and replication

Monitoring outcomes: The sharp contrasts in weather patterns (extreme south-east winds in the summer and very uncomfortable and unpleasant cold and wet weather in the winter) called for seasonal surveys to gauge the effect of ceilings on living conditions in Mamre. Members of the community committee conducted comparative surveys in both retrofit and non-retrofit houses before and after the summer and winter seasons. It takes several rounds to ascertain the results but early survey findings have been encouraging. Potential effects include improved health, better thermal efficiency (warmer homes and/or reduced energy consumption), and enhanced household resilience to weather conditions. A third survey will lead to a detailed analysis by ICLEI in late 2011 (final report available on request from ICLEI). The final assessment will include evidence of the improvements in quality of life, sense of self, ownership and livelihoods, in the hope that the remaining 140 RDP houses in Mamre can be retrofit with ceilings.

Replication: The City of Cape Town will use the full report when turning to the national government and donors for the replication of the Mamre pilot project in the area, where some 40,000 RDP houses would need retrofitting. The Western Province is also keen to replicate the scheme in other locations. Donor involvement is indispensable: once completed, a government-built house becomes the property of the beneficiary household, and it is next to impossible for the municipality to allocate taxpayer money to privately-owned property.

Sub-Saharan African Cities:

Five-City Network to Pioneer Climate Adaptation through Participatory Research and Local Action

Lessons learned: After a recent change in regulations, new houses built under government programmes must come equipped with healthier or energy-saving fixtures like solar panels, insulation, plastered walls, ceilings, water-saving shower heads, etc.

Institutional features

- Under the Constitution, local government is in charge of housing (planning and implementation)
- the project was decided and supervised by the Environmental Resource Management Department of the City of Cape Town
- in Mamre, the municipality leads the retrofitting scheme, having allocated the budget for the ceilings and the skills development programme
- ICLEI will provide a thorough survey-based assessment of the outcomes, which will hopefully trigger support for replication both in Mamre and elsewhere in Cape Town.

Partners

- The Mamre scheme was part of a three-year project formally known as *Sub-Saharan African Cities: A Five-City Network to Pioneer Climate Adaptation through participatory Research and Local Action* launched by the African section of ICLEI (International Council for Local Environmental Initiatives), which was funded by DfID and the International Development Research Centre under the *Climate Change Adaptation in Africa* programme.
- In Mamre, funding was provided by DANIDA.

Conclusion

Mamre's experience shows that in their worthy efforts to provide affordable housing to expanding populations, municipalities must not overprivilege quantity over quality. Poverty reduction and adaptation in the face of more frequent extreme weather events call for a degree of energy efficiency from which other benefits are to be derived in terms of energy savings and health. Sustainability requires a participatory process and capacity-building among the community.

For further information

<http://www.iclei.org/index.php?id=11470>