

Ehlanzeni, South Africa

The Integrated Water Harvesting Project for food security and income generation

The Ehlanzeni district Integrated Water Harvesting Project targets four of the poorest communities in Mpumalanga Province, sustainably improving local livelihoods through a water - food - health NEXUS that aims to boost agricultural production and community income.

Urban NEXUS Case Story 2014 - 12

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The project in brief

Ehlanzeni district has a high unemployment rate of 76% and four out of five people live below the government's official poverty line on less than \$US 60 cents per day. Simultaneously, Ehlanzeni is faced with significant resource strains. The district is void of surface water streams, while groundwater sources have run dry, leaving rainwater capture and storage the only viable option to sustain local food production. Only eight percent of households have household connections to drinking water and residents typically rely on roof runoff storage in tanks, bi-monthly communal tapstands and water purchases from hand-carts and vendors.

For the last fourteen years, groups of women and youth, have been established as legal entities and have come together in four regional target communities, Luphisi, Mbonisweni, Dwaleni and Mjejane, to address basic livelihood concerns related to food production, health management and income. Water was identified as the main factor limiting the expansion of small-scale enterprise, employment and other entrepreneurial activities that could increase income and positive self-esteem. While the district receives an above average annual rainfall of 746 mm, the majority falls between October and April, allowing only one crop harvest per year, which produces a limited supply of food to sell.

In order to extend the growing season beyond the wet-season, which has the potential to more than double food production, a partnership was formed between six community groups comprised of 100 people, the local NGO, Ecolink, government, research institutions and civil society to develop the Integrated Water Resources Management (IWRM) project. The multi-stakeholder IWRM project is expected to deploy rainwater harvesting infrastructure, build community capacity to boost food security and income generation (with an annual average return of \$US 1855 per hectare) while empowering the women, men and youth involved. Ultimately knowledge and capacity building will be shared with a further 483 direct dependents of the 100 original participants.

What makes it "Urban NEXUS"?

The IWRM project not only enhances the deployment of technology for food production to improve nutritional health, it also reduces poverty and empowers individuals with new skills at an inter-community scale to meet the sustainable and equitable resource targets stipulated in the 1998 National Water Act (AWF, 2009).

To facilitate integrated collaboration, the IWRM Project Steering Committee (PSC) was



Date	2009-ongoing
NEXUS Sectors	Water-Food-Health-Social
NEXUS Innovations	Institutions, Communication + User Behavior, Design and Technology
Scale	District/region
Budget	\$US 500,000

Urban NEXUS Definition

The Urban NEXUS is an approach to the design of sustainable urban development solutions. The approach guides stakeholders to identify and pursue possible synergies between sectors, jurisdictions, and technical domains, so as to increase institutional performance, optimize resource management, and service quality.

It counters traditional sectoral thinking, trade-offs, and divided responsibilities that often result in poorly coordinated investments, increased costs, and underutilized infrastructures and facilities. The ultimate goal of the Urban NEXUS approach is to accelerate access to services, and to increase service quality and the quality of life within our planetary boundaries.

ICLEI / GIZ 2014

Further Reading

African Water Facility (AWF), 2009, Integrated Water Harvesting Project Mpumalanga, South Africa, Appraisal Report: <http://www.africanwaterfacility.org/fileadmin/uploads/awf/Projects/AWF-Project-appraisal-report-SOUTHAFRICA.pdf> (20 Aug 2014)

GIZ and ICLEI, 2014, Operationalizing the Urban NEXUS: towards resource efficient and integrated cities and metropolitan regions, GIZ Study: www.iclei.org/urbanexus

formed to oversee and manage the IWRM. The PSC includes members of the Department of Water and Environmental Affairs (DWAF), local government such as the Inkomati Catchment Management Agency (ICMA), the Beneficiary Community Groups, Ecolink and academic research institutions. The PSC oversees the Project Coordination and Management Team (PCMT) composed of women and youth groups to offer analysis, design materials, tools, training and assistance for IWRM to the greater communities. The provision of suitable land and security of land tenure is stipulated by local Tribal Authorities, local and regional government through Ecolink's facilitation.

Scope for improvement

The project efficiently integrates design and technology alongside social relations and behaviors, however, is weaker in terms of service delivery. For instance, the water harvesting project could be expanded to incorporate wastewater management and treatment to further increase resource efficiency. A more capital intensive project such as this might also seek to expand the institutional role of government, to enhance the projects chances of success. Despite use of capture systems according to the African Water Facility (2009), the region's food production nevertheless depends on sufficient annual rainfall to support year-long agricultural irrigation. Food production systems requiring little water demand, such as hydroponic agriculture could be considered as an additional technological component worth considering.

Replication

The 100 project beneficiaries will disseminate new skills, knowledge and vocational techniques within their immediate family structures and respective communities, which should ultimately amount to 11,000 people. It is expected the scheme will be replicated within the broader community, from the scale of a single dwelling to larger scale farming projects. Although this project was designed to cater to the specific needs of the Ehlanzeni district, it could be replicated elsewhere with similar climatic, geographic and socio-economic circumstances.

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On behalf of:



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