

South Africa- Working for Water

South African pro-poor watershed rehabilitation projects

SUMMARY

This is a Government-led programme that seeks to provide environmental externalities while directly tackling poverty issues. This South African Government programme aims to alleviate poverty through the provision of temporary work and skills development on watershed enhancement projects involving mainly the removal of invasive alien plants. Environmental benefits have been confirmed and although most of the funding comes from the government's poverty relief fund, water users also contribute either through the government's water management fees or through individual regular donations.

MATURITY OF THE INITIATIVE

Programme launched in 1995 and administered by the Department of Water Affairs and Forestry.

DRIVER

Water scarcity due to low rainfall (65% of South Africa receives less than 500mm annual average rainfall) and stream flow reduction due to the growth and spread of the rapidly spreading Invasive Alien Plants (IAP's) that consume large quantities of water. These invasive plants also cause other environmental problems: increased flooding, fires, erosion, siltation and strain on indigenous species.

"A national review of potential stream-flow reduction by invading alien plants, conducted by the CSIR and funded by the Water Research Commission, found in 1997 that a total area of about 10.1 million hectares (6.8%) of South Africa and Lesotho had already become invaded to varying degrees of density. These invasions were estimated to be reducing the national mean annual runoff by about 3300 million m³ (6.7% of national runoff)"

"If we do not clear invading alien plants in 10 to 20 years we will lose 30% of our run-off to rivers. In 20 to 40 years 74% will be lost. (Working for Water Annual Report 2001/2".

Working for Water website

Beyond these environmental goals, the main driver of this programme is really poverty alleviation through the creation of employment in the programme's plant removal projects- "workfare" (DWAf, 2006)

STAKEHOLDERS

Supply

Private, communal and public land in priority mountain area catchments. Local rural contractors, funded by the programme, carry out work in 300 project sites. Unclear whether, when in private land, the landowner is involved.

In total, 10 million hectares have been identified for clearing over 20 years.

Demand

National government, local municipalities and public/private water supply companies

The Department of Water Affairs— annual contribution to the WfW programme amounts to about R58 million. The water price charged to its users (33,000 domestic, industrial, agriculture and forestry water users), includes a "water resource management fee". This fee covers clearing of alien invasive plants as well as planning and implementation, pollution control, demand management, water allocation and water use control).

The public company TCTA, the specialised liability management body for bulk water supply has also contributed R8 million to the WfW programme (over three years).

Some *Local governments*, interested in preserving or increasing water supply contribute to the programme with regular annual donations to fund the removal of AIPs in the catchment areas from



where they derive their water. In the Hermanus municipality, for example, a block rate tariff was introduced to control high water use and a significant percentage of the revenues collected are transferred to the WfW programme. Similarly, Georges Municipality has committed R400 000 per year to the programme as a parallel investment to the new augmentation scheme to supplement the capacity of its Garden Route Dam.

Intermediary

The Government directly administers the programme.

Facilitator

The Department of Water Affairs and Forestry, Department of Environmental Affairs and Tourism and the National Department of Agriculture

MARKET DESIGN

Service

Water quantity, flow regulation and erosion control

Commodity

Rehabilitation of degraded ecosystems: removal of invasive trees, like pine and eucalyptus or acacia bushes, through physical felling or uprooting, biocontrol, controlled burning or herbicides. Where appropriate, removed plants are replaced by native species (many of the areas being cleaned were originally grasslands and trees are not replanted).

Payment Mechanism

Direct negotiation (government); user fees and pooled transaction

Working for Water Programme (WfW) (Department of Water Affairs and Forestry) receives funding from several government sources and commissions local contractors to carry out the plant-clearing work.

Terms of Payment

Users contribute with cash payments;

Providers, considered here as the owners of the land where the clearing works are carried out. Unclear whether private or communal landowners contribute to the works in any way, as it is in their own interest to collaborate since it helps them comply with legislation requirements. (see legislation issues)

Funds Involved

The annual budget is currently half a billion Rand (about US\$66 million), nearly all coming from the Government's Poverty Relief Programme (R 414 million in 2003/4), while the water users contribute with R58 million a year. Turpie, 2004

ANALYSIS OF COSTS AND BENEFITS

Economic

Programme costs are: 10% in management fees, 30% in materials and transport and 60% salaries.

Benefits generated include:

- revenues from timber processing (some of the timber from larger trees is exported to Japan for the pulp industry);
- creation of secondary industries in poor rural communities in the vicinity of the projects, including charcoal making and furniture manufacturing;
- restoration of the productive potential of the land (particularly in relation to pasture lands, that due to the invasion of alien species, considerably lose their grazing value)

Avoided costs: savings for the respective water boards through reduced water management and rehabilitation costs

Environmental

About 1 million ha of invasive alien plants was cleared over the past seven years, which has yielded an estimated release of 48 –56 million cubic metres of additional water per annum. (DWAf, 2006)

Relation between invasive alien infestations and reduced aquatic ecosystem integrity and hydrological yield

- Reduction in mean annual runoff and particularly dry season low flows
- Reduction in utilisable yield from dams
- Alteration of these key hydrological cues that define the nature of stream biota
- Increases in catchment sediment supply, through the effects of "hot fires"
- Reach- and biome-specific alteration in geomorphological processes, with resulting effects on channel geometry and instream habitat quality
- Reduction in riparian and wetland plant biodiversity, through competitive displacement, shading and changes in fire regime
- Changes in the supply and timing of food sources, water chemistry and fire regime in aquatic ecosystems
- Threats to aquatic fauna and biodiversity through the combined effects of the above on the extent, distribution and quality of micro and macro habitats comprising freshwater ecosystems.

It is also known that IAP's increase the intensity of fires and exacerbates environmental damage due to its high fuel load. (DWAF, 2006)

Social

Employment benefits: the project engages mainly with the groups most affected by poverty and unemployment, focusing on women, youth and disabled individuals. It provides work for up to 24 months worth of work over a 5-year period- being the average employment period is four to eight months in every year.

According to DWAF (2006), the programme has generated the following social benefits:

- more than 20 000 beneficiaries, previously unemployed, received gainful employment and training through the programme annually.
- Over 15 million person-days of employment have been generated by WfW.
- Costs per "job" created are also the most efficient of all of the poverty relief programmes of national government.

LEGISLATION ISSUES

Although there is legislation attributing responsibility for management of AIPs to the landowners (Conservation of Agricultural Resources Act -CARA), in practice this but this is not rigorously enforced.

MONITORING

Monitoring is done through a database (WaterWorks) set up by WfW to collect data on and manage and control its in-field operations.

A Monitoring & Evaluation Unit is developing an overall M&E framework to assess performance in the achievement of the six WfW goal areas: ecological, hydrological, agricultural, institutional development, economic development and social-economic empowerment.

MAIN CONSTRAINTS

One of the main constraints of the programme is securing sustained control of invasive alien plants in cleared areas. This requires on-going follow-up or handover of land to landowners- its unclear whether, once the land has been cleared, the landowners is in any greater obligation to maintain these plants away. (DWAF, 2006)

Given that the programme is in the national government machine, bureaucracy often results in delays in payments and contract approvals, which can be especially harmful for the vulnerable groups with which the programme works. (DWAF, 2006)

MAIN POLICY LESSONS

Extensive research on the environmental impacts of alien invasive plants has provided the base for the work developed by the Working for Water programme, and real improvements in water quantity have already been realised.

In addition, the programme aims at fulfilling its environmental goals, through the provision of social benefits to the most vulnerable groups, and the combination of both has earned the programme wide



national support (and increasing funding, both from social and environmental interests) as well as 35 national and international awards.

OTHER INFORMATION

Further information on the impacts of invasive alien plant (from the South African Journal of Science) is available on the WfW website at <http://www.dwaf.gov.za/wfw/Docs/>

CONTACT

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King et al (2005) An Inventory of current ecosystem service payments, markets and capacity building in South Africa. Document presented at the Eighth Public Meeting of the Katoomba Group- Building Foundations for Pro-Poor Ecosystem Services in Africa 19-22 September, 2005, Uganda
South African Department of Water Affairs and Forestry (DWAF) (2006) Working for water strategic Plan 2004/5-2007/8, internal draft

Turpie, J.K. (2004) Maloti Drakensberg Transfrontier Conservation and Development Programme: Ecosystem Services Trading Project. Report on Ecosystem Service Trading in the Region. Payment for Environmental Services Baseline Study Final Report December 2004, appendix 12. Assessed at <http://www.maloti.org/za/progress/Appendix%2012.pdf>

WWF (no date). Working for Wetlands, South Africa. Managing Rivers Wisely Series. Living Waters Programme, World Wildlife Fund (WWF).
<http://assets.panda.org/downloads/mrworkingforwetlandscs.pdf>

LINKS

South African Government Information website- Environmental Programmes:
<http://www.info.gov.za/issues/govtprog/environ.htm#wat>

Working for Water website <http://www.dwaf.gov.za/wfw/>