



Supporting South Africa's WATER FACTORIES

A nationwide project is demonstrating how corporate water users can plough back income from freshwater, for freshwater.

Article by Petro Kotzé.

It is well known that South Africa is a water scarce country, and one with an almost constant battle being waged between the goals of economic development, ecosystem conservation and mitigation of the damage that has already been done to most of our freshwater ecosystems. It is also widely accepted that most of these issues cannot be solved by traditional engineering solutions or infrastructure development alone.

Rather, innovative solutions need to be found that call for a balance between these goals of economic development and ecosystem conservation. The Water Balance (WB) Programme, under the auspices of the World Wide Fund for Nature (WWF) aims to do just that. The programme literally gives corporates

the opportunity to 'balance' the amount of freshwater they use with a monetary investment that will result in the approximate amount of water to be returned to the country's critical catchments. The high-water yield areas, also known as 'water factories', are recognised as such because they contribute significantly to the overall water supply of the country, often supporting the country's economic hubs with water.

Helen Gordon, the WWF Water Balance Programme Development Manager says that by supporting the WB, corporates who are big consumers of water are investing back into the country's (and their own) present and future water security. The programme started in 2008 with a two-year limited pilot phase ending mid-2010, but the "WWF plans to run this programme for many years to come," says Gordon. Since its inception, the programme has already resulted in promising achievements, both in the areas of corporate participation and on-the-ground results.

SUPPLY-SIDE INTERVENTIONS

As a start, the WWF is concentrating its efforts on the quantification of water made available through the removal of invasive alien plants. Not only does the National Water Resource Strategy of 2004 identify the clearing of invasive alien plants as one of the most important water supply-side interventions that can be made at a national scale, but the large amount of data available on the topic through the current and historic experiences of the Working for Water Programme has made this an obvious first choice. Currently, WB is also exploring the possible expansion of their implementation to include restoration in cleared sites in dire need of active restoration.

There are numerous benefits associated with the removal of alien plants. Environmentally speaking, it results in better water quality and availability by contributing to

the healthy functioning of riverine systems. The removal of invasive alien plants also reduces wildfires, while enabling the re-establishment of natural vegetation. Economically speaking, decreasing amounts of water in a catchment places economic development at risk. On a social level, jobs are created through the clearing work but, perhaps more importantly, a contribution is made to the continued provision of water.

The clearing work done through the WB will be focused on the said 'water factories'. The WWF has identified five nodes in which these catchments lie, says Gordon. She adds that the prioritisation is based on several other factors, including high biodiversity benefits, willingness of landowners to enter stewardship agreements, other existing WWF initiatives which can be leveraged and any additional social benefits that can be achieved, like using biomass (plant debris after clearing) to create secondary markets. "Having a focused effort will have greater results where it counts the most for the entire country," she says.

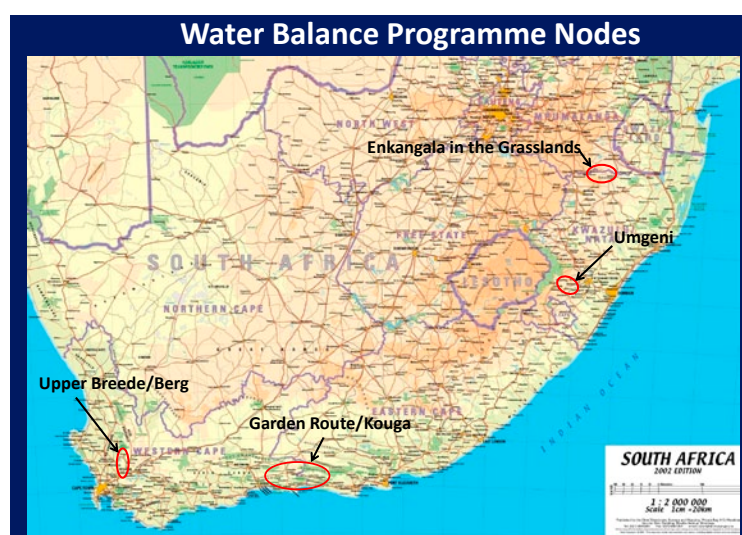
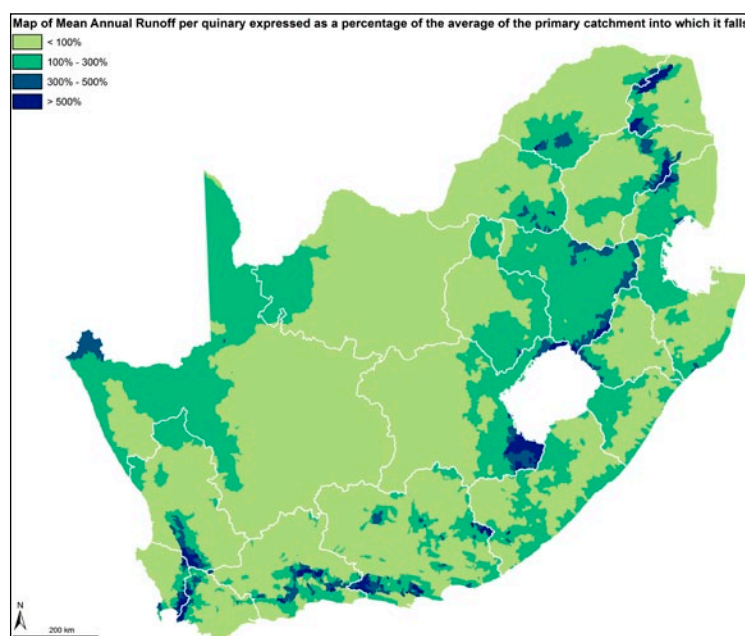
The prioritised nodes are:

- **Upper reaches of the Berg and Breede catchments:** This is the heart of the Western Cape water supply system, catering for the City of Cape Town, urban water users and irrigators along the Berg, Eerste, Lourens, Steenbras and Palmiet rivers, domestic and industrial users on the West Coast, as well as irrigators and urban users in the Riviersonderend catchment of the Breede water management area.
- **Garden Route from George to Plettenberg Bay in the Western Cape:** A highly water stressed area; it is also one of the country's biggest tourist attractions.
- **The Kouga River catchment in the Eastern Cape:** An important water resource for the Nelson Mandela Metropole, this catchment has also been identified as a priority catchment by the

River Health Programme's State-of-the-Rivers Report.

- **The Umgeni catchment in KwaZulu-Natal:** This is the heart of the province's water supply, catering for Durban, Pietermaritzburg and surrounds.
- **The Mpumalanga Grasslands:** Water runoff from Mpumalanga's southern highland grassland catchments supplies most of the water used for electricity production in the Highveld power stations and the Secunda petrol-from-coal plant. It also supplies water to north central KwaZulu-Natal and Gauteng.

Within these catchments, says Gordon, the WB programme will clear the tributaries, especially in areas where their work overlaps with that of Working for Water (WfW), which tends to focus on the main stem of a river. "However," she adds, "the WB sites are on private land within the prioritised nodes where WfW is not currently clearing." In such cases the WB focuses on clearing efforts in the riparian zone and requires landowners to cover the cost of clearing other terrestrial infestations. This support serves as an incentive for landowners to conserve biodiversity through stewardship agreements in order to



Top left: The water balance priority nodes.

Bottom left: Mean Annual Runoff per quinary expressed as a percentage of the average of the primary catchment into which it falls.

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Helen Gordon/WWF

receive financial assistance to subsidise their invasive alien plants clearing costs while achieving long-term commitment to maintaining their land free of invasive alien plants.

The collaboration between WWF, WfW and private landowners is seen as an integral ingredient to the success of the WB. “We recognise that an impact on the landscape can only be made with close collaboration and partnerships,” says Gordon. There is a particularly close relationship with WfW where clearing areas overlap. In addition, the WWF has

a memorandum of agreement with the Natural Resource Management Programme regarding the provision of herbicide to relevant landowners. Other implementing agents or partners include CapeNature, LandCare, Cape Winelands District Municipality and Working for Wetlands.

In order to work out the amount of corporate funds that need to be invested, the WWF has collaborated with scientists to estimate the water used by various invasive alien plant species and the national norms for the costs to clear such species. This information has been used to calculate the proportionate investments to be made by the water user. Notably, the WWF sees this private sector investment not as a benevolent act, but rather as “a sound decision to contribute towards risk mitigation.”

THE VALUE OF CORPORATE INVESTMENT

By investing in the WB Programme, water users are encouraged to take ownership of South Africa’s common water challenge by going beyond reducing their own water demand to also making an investment back into water provisioning ecosystems.

As such, each corporate or participant involved with the WB Programme, explains Gordon, is required to commit themselves to the ‘triple R’ process of review,

reduce, replenish. They are required to accurately measure and provide their operational water use, including not only their municipal bills, but also borehole water or any water used directly from the river. Secondly, participants are required to develop and implement a water reduction and efficiency strategy. Lastly, they are required to invest in projects that will cause ‘new’ water to be made available into freshwater ecosystems, estimated to be in proportion to their water use.

When determining the Rand value of the proportionate investment that a water-user will make, three principal input values are used. Firstly, the water user’s operational water use is determined. This is then divided by the national average amount of water ‘replenished’ through the clearing of a hectare of invasive alien plants and maintaining it in a natural infestation-free state. Lastly, this is multiplied by the average cost of clearing a hectare of invasive alien plants and maintaining it in an infestation-free state.

The participants, says Gordon, enter into a five-year renewable contract with the WWF, during which time the WWF achieves the extent of invasive alien plant clearing and restoration considered necessary to balance the participant’s operational water use.

The first retailer to join the programme was Woolworths. Reflecting its annual operational water use of just over 350 000 kℓ, the company has committed R2,3-million. Under a recently refined programme model, Sonae Novobord and Nedbank also joined the programme in 2010 and 2011 respectively. Sonae Novobord has committed R2,8-million in proportion to its annual operational water use of 200 000 kℓ, while Nedbank is balancing its annual operational water use of 550 000 kℓ with a R9-million investment, which may contribute to achieving additional restoration.

Midmar Dam on the uMgeni River. The Water Balance programme is focused on strategic catchments that are of significant importance to the country’s economic hubs.



Lani van Vuuren

As the WB sites earmarked for clearing are on private land, these funds are also used as a financial incentive to support landowners in one of two ways. Either, to encourage landowners to enter their land into stewardship agreements, which is a longer term commitment beyond that of WB and involves a far greater management plan for the land, ensuring additional biodiversity gains. Or, to support landowners who have already made this impressive commitment, as is the case with five farmers in the Luneberg area in Mpumalanga. "These farmers are hard workers who have shown commendable commitment to alien plant clearing and a few of them are ahead of schedule with the clearing of the required hectares," says Gordon.

These five willing landowners, some of the first to enter contracts of this nature with the WWF, count among the highlights of the project to date. "And," adds Gordon, "a couple of these landowners are prepared to over-deliver on their contracts, with one farmer exploring active restoration at his own cost and another using his own funding to clear land that he is only leasing." More highlights in this specific area in Mpumalanga include the rejuvenation of a stream which used to only run in summer but, after four months of clearing along its banks, is now flowing in winter. Moreover, a new spring has begun flowing. "In future, the farmer now has the option to use this camp in winter," says Gordon.

In addition, Nedbank is engaging with WWF to ensure that the clearing of alien plants on their own land (while not part of WB) is done in a similar manner to that of the programme. Lastly, Gordon adds that the mentioned MoU regarding herbicide provision "shows how partnerships can extend the effectiveness of action on the ground, contributing to delivering on both WB's and government's goals."

Regardless, the programme is not without its challenges.

"Sufficient capacity to deal with the implementation needs," is one, says Gordon. As the high water yield areas in question contribute significantly to the overall water supply of the entire country, rehabilitation work requires a cross-country implementation programme. "Management of on-the-ground-implementation is also difficult from a distance." Furthermore, although costly and time consuming, regular site visits are vital to flag potential problems at an early stage.

An additional challenge of working in these areas is that they are often mountainous and the invasive alien plants are hard to access, which makes dealing with the debris after clearing especially challenging. While the most sustainable approach to WB roll-out entails the landowner managing the clearing of plants with his own staff (especially since the landowner is required to continue the alien plant control after the five-year contract with WB), managing the clearing methodologies and the environmental impact thereof is more complicated when executed on private property by the owner of that property.

Regardless of these challenges, the WB Programme is a practical example of how corporate water



Helen Gordon/WWF

Among the highlights of the WWF Water Balance Programme to date is the rejuvenation of a stream in Mpumalanga. The stream used to only run in summer but, after four months of clearing along its banks, is now flowing in winter.

users can invest funds in our common water-secure future. So far, the programme has been successful in creating a platform that links corporate private funds to responsible landowners greatly in need of financial assistance in order to confront the often overwhelming and costly challenge of invasive alien plant clearing. Even more so, WB aims to contribute to the country's future water security by achieving tangible and secured results in the landscape, while highlighting the importance of the health of catchments in the continued provisioning of water. 

The Water Balance Programme focuses on the quantification of water made available through the removal of invasive alien plants. Here is an example of how clearing is taking place along a river (the area already cleared is in the foreground).



Helen Gordon/WWF