

## **Closing Report**

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### **Project: The effect of proposed urbanisation on the Mpushini/Mkhondeni areas in KwaZulu-Natal on hydrological natural resource flows**

Compiled by: Stefanie Schütte  
in Association with the PMMB Trust

The CEPF Small grants project was used to support research on the influence that the proposed urbanisation of the Mpushini/Mkhondeni areas in the Msunduzi/Mkhambathini area in KwaZulu-Natal has on the hydrological resource flows, as well as enable various meetings with environmental and/or municipal forums. The author wishes to thank CEPF for this contribution.

#### **Main Findings**

The research findings were that urbanisation would greatly increase the flows in the small streams and steady the low flows. This is because of the envisaged import of potable water from outside the study area for urban use, as well as impervious areas causing a shift from evapotranspiration towards runoff in this semi-humid area.

While more water would flow down the small streams, the water quality (which was not part of the research) is likely to be of lower quality, which can have serious effects on the ecology and downstream hydrological ecosystem services. In addition, from an ecological perspective, life within the streams has evolved to the natural conditions, which include certain low (or no-flow) periods. Therefore the biodiversity in the small streams is likely to reduce with urbanisation.

#### **Lessons learned:**

Urbanisation can greatly influence the natural resource flows, especially in relatively dry areas with small streams. While these effects are mainly negative, there is also the opportunity of allowing excess water (storm flows and possibly grey water) to infiltrate the ground where possible, which could augment low season flows and thereby downstream water provision during dry times.

Recommended mitigating measures include:

- keeping impervious urban areas to a minimum
- water harvesting from roofs and other impervious areas
- allow stormflows to infiltrate where possible, rather than transporting is quickly to the streams
- using of grey water in urban gardens where possible

#### **Input of this project into developments plans/local government**

The key findings of this research were passed onto the Msunduzi Environmental Unit as well as included in comments for various development planning tools.

In the author's opinion, the drive for land transformation for this region is very strong and seen by local and national government to be essential for job creation, as well as a promise of

rates for the local municipality. Concerns with regards to ecosystem services and biodiversity are seen to be less important, and there seems to be a development-at-all cost approach. This can be seen because every single application for this area has been approved. On the positive side, however, there is now a draft local area development plan, as well as a draft SDF, which for the first time shows connected conservation zones along the river network. While these conservation zones are not as big and connected as we would like, it is still a step in the right direction.

We believe that the PMMB Trust, with the constant input into development frameworks and environmental forums has made a contribution towards the establishment of this local open system.