Strategic Water Source Areas (SWSAs) are the 10% of the land area that delivers more than 50% of the country’s water supply – they are national ecological infrastructure assets for water security. The concept of SWSAs emerged almost two decades ago, and has gradually gained attention within national plans and policies. Efforts to provide additional security to SWSAs have escalated notably within the last five years. To this end, the Biodiversity and Land Use (BLU) project has enabled a fine-scale delineation of SWSAs. It also received definitive advice on the most appropriate legal provisions to use and established co-ordination committees to ensure that all stakeholders are on board. Ever increasing steps are being taken to ensure that SWSAs receive the protection that will recognise their strategic importance.

Case study series:

Biodiversity and Land Use project

Strategic Water Source Areas: Progress towards increasing mainstreaming impact
Mainstreaming biodiversity refers to “the process of embedding biodiversity considerations into policies, strategies and practices of key public and private actors that impact or rely on biodiversity, so that it is conserved and sustainably used both locally and globally”. Incremental mainstreaming successes are achieved in the form of products co-produced, changes in awareness, and increasing integration into policy, although seldom in a linear manner. The ultimate outcome, often seen only after several decades of dedicated mainstreaming effort, is better management of biodiversity and ecological infrastructure.

Mainstreaming is not a single once-off project, rather, it is a long-term process that is strongly layered on previous efforts and relationships built over time. The concept of SWSAs has made and continues to make significant mainstreaming inroads into policy that has the potential to bring the practice of mainstreaming closer to its ultimate aim of improving the management of biodiversity and ecological infrastructure for human wellbeing.

Recent progress in mainstreaming SWSAs

Over the course of the BLU project, further progress was made in integrating SWSAs into several high-level national policies.

**National Spatial Development Framework (NSDF)**
SANBI’s engagement with the development of the NSDF resulted in the introduction of the concept of a National Ecological Infrastructure System as a national spatial development lever to support spatial transformation. The NSDF states that “land-uses that reduce run-off or stream flow, or affect water-quality (e.g., mining, plantations, crop production and overgrazing) should be avoided in SWSAs…” This places biodiversity and ecological infrastructure as a core element of the spatial vision for the country.

**National Water and Sanitation Master Plan**
The Master Plan, finalised in 2018, is based on the recognition that South Africa faces a water crisis from failing built infrastructure, severe droughts, deteriorating condition of rivers and wetlands, and persistent inequalities in access to water. It states that “the protection of the ecological infrastructure of our natural aquatic ecosystems is crucial for economic development, water and food security and the assurance of healthy and functional water resources that will support future sustainable development”.

**Medium-Term Strategic Framework**
SWSAs have been included government’s Medium-Term Strategic Framework for 2019 to 2024, with the target of securing 11 of the 22 SWSAs within five years.
The origins of the SWSA concept

The idea of mapping SWSAs arose almost two decades ago. Over the intervening years, it has been refined and updated to improve the methodology and create a product that is increasingly suitable for robust implementation. At each stage, the maps and concept of SWSA gained ground and were increasingly integrated into policies in the biodiversity and water sectors. It became clear that biodiversity priorities would be taken more seriously by high-level stakeholders and other sectors if they were also aligned with national developmental imperatives, like water security. By combining the priorities for biodiversity and water into a focussed set of areas that would deliver returns for both sectors, more attention was gained and there was stronger motivation for actions to protect these areas. In doing so, it reiterated the need for truly co-operative governance.

The National Spatial Biodiversity Assessment took the first step towards defining Strategic Water Source Areas when it identified high water yield catchments at tertiary and quaternary catchment scale. It was noted that these areas yield approximately 50% of the country’s water supply.

The National Freshwater Ecosystem Priority Areas project refined the high water-yield areas to the scale of sub-quaternary catchments. This map received a lot of attention from a variety of users, because water was understood as a scarce resource in the country and information regarding the supply of water was highly relevant.

A short, focussed project sought to refine the methodology used in NFEPAs, and address methodological concerns that had been raised by users. This was the first time the term “Strategic Water Source Areas” was used. Efforts were made to group these areas geographically and give them recognisable names to draw attention to them.

SWSAs proved to be such a powerful concept that they were again updated in 2018. The purpose of the update was to refine the understanding about the hydrological processes of water runoff, to define clearer boundaries and expand the SWSAs to include groundwater. Further research showed that SWSAs provided water to more than 50% of the country’s population, 90% of urban water users, 67% of economic activity, and 70% of the water used for irrigated agriculture.
Steps to securing SWSAs

The need to secure SWSAs became a focus of the BLU project, led by SANBI in collaboration with a range of partners. Although not initially part of BLU project planning, the work on SWSAs was an emerging opportunity, in line with the project’s goals for better environmental management.

Legal advice

The BLU project helped to compile a joint request, on behalf of government stakeholders, to the office of the state law advisor for guidance on which was the best legislative option to secure SWSAs. The resulting recommendation was that, amongst other legislative amendments, the most appropriate legal tool was section 24 (2A) of the National Environmental Management Act 107 of 1998.

Co-operative governance

The work on SWSAs occurs at the intersection between the biodiversity, water and development sectors. An important role for the BLU project was to build consensus and co-ordinate engagement between the many stakeholders involved. Three government committees were established to provide structure to the SWSA engagements. The government authorities committee would convene all the organs of state, including the Department of Water and Sanitation, that would need to be involved. Beneath this, a technical task team was assembled from those involved in the scientific methodology, and an Environmental Impact Assessment task team brought together those who would develop the restrictions or listing activities. These structures have brought together government, researchers and non-governmental organisations, working together collaboratively. Co-operative governance will continue to be one of the most important aspects of this work in the future.

Fine-scale delineation

It was realised that to be legally gazetted, SWSAs would have to be defensibly delineated at an even more precise resolution. A methodology for fine-scale delineation of the boundaries of each individual SWSA was developed, using a newly developed geostatistical methodology. The result was the most fine-scaled delineation of SWSAs to date – and a noteworthy improvement to the methods for rainfall interpolation in the country.

Prioritisation

The next step was to prioritise which SWSAs would be the focus of the MTSF target. To do this, a set of 40 metrics was gathered across six themes for each SWSA and a prioritisation was performed. The result is that the 11 SWSAs to be secured by 2024 have been identified through a robust selection process.


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