

## Summary Report

### Freshwater Ecosystem Network

29 June 2017 @Birchwood Hotel

#### Welcome and purpose

**Deshni Pillay**, SANBI's Director of Biodiversity Assessment and Monitoring (BAM) opened proceedings. She noted the changes in the Freshwater Work at SANBI. Previously FEN was coordinated through John Dini, and it will in the future be run out of the Biodiversity Assessment and Monitoring division. She also noted that some of SANBI's work around Biodiversity and water security will run out of the Biodiversity Information and Policy Advice Division through the GEF 6 programme. This will stimulate further partnerships with the sector, and SANBI is looking forward to fine scale planning and stakeholder engagement as that project kicks off. She introduced Tanya Layne as chair of the meeting.

**Namhla Mbona**, Freshwater Biodiversity Planner at SANBI gave an outline of the programme and the purpose for the meeting. She put forward a tentative set of aims for the FEN:

- Provide a platform for joint learning, coordination and networking around freshwater ecosystems practitioners.
- Identify key needs in the sector and what can be done to support these

The programme mostly comes from topics discussed in previous years. An effort has been made to include also there suggested topics where possible. Some topics have been kept for next year as time was not enough, including:

- National status report on invasive by Sebataolo Rahlao
- Strategic Water Source Areas by David Lemaitre
- WRC research projects by Bonani Madikizela or John Dini
- SAIB and DST fish project by Albert Chikona

**Department of Water and Sanitation updates Ndivhuwo Netshiendeulu** and **Lerato Molokomme** presented on the strategic objectives and progress with implementing of Chapter 5 of the Second National Water Resource Strategy (NWRS2). South Africa is the 30<sup>th</sup> water scarce country in the World and therefore requires effective water management. Chapter 5 (NWRS2) was

developed in order to ensure the protection of water resources and it consists of nine strategic objectives. Progress on the activities and targets were addressed for each strategic action. A draft for the National groundwater report, framework for delineating riparian areas and a draft on policy for conservation of wetlands is available on the DWS website (<http://niwis.dwa.gov.za>). R2.5 million is allocated for the Breede Gouritz River rehabilitation project. DWS compiles a state of Water Report annually. The National Wetland Monitoring programme is available on the WRC website.

Key outcomes:

- FEN participants were encouraged to be active in filling the quarterly spreadsheet that feeds into DWS reports. This spreadsheet is circulated through the FEN mailing, participants to ensure that their email addresses are legible on the attendance register. Participants who are not receiving emails must contact Namhla Mbona.
- DWS to consider circulating a concise report through the FEN at least a week or two before the FEN meetings. Members can then work with the reports and engage in discussions at FEN meetings. FEN meetings would need to allocate more time for discussion.
- The integrated water quality strategy is finalized and available on the DWS website. The policy will be gazetted in the next few months.

**Elijah Mogakabe** presented on DWS monitoring.

There are different spatial scales of monitoring that can be done: national, regional and local monitoring. DWS is using 22 sites in the country to report internationally to UNEP GEMS. DWS monitoring network generate information required for performing its custodian role. It also generates information to local, provincial and national government levels, and in terms of international/regional/trans-boundary agreements and national level water resources strategy and development planning (NDP). Monitoring on a national scale is challenging, due to budget constraints for running the programmes and continual pressure to expand the networks. There is a need for a consolidated network in the future where all the programmes will fall under one umbrella.

Key outcomes:

- There is a potential in using local people (farmers; land owners; residents) for feeding into monitoring. This kind of information can be useful and more frequent but it needs to be curated carefully. Also, the option to partner with private consultant is viable. DWS will need to set up a

system where information can be submitted if the client agrees. An example of eutrophication monitoring (EONAMP) in dams for the WRC is available on the website.

- Participants were encouraged to visit the National Integrated Water Information Systems (NIWIS) for key water quality indicators. NIWIS is hosted on the DWS website. It is advised the D.A.M.S section presents the strategy at next year FEN
- The Department of Environmental Affairs and DWS are considering forming a partnership for monitoring areas of mutual interest such as rehabilitated wetlands.

## Other projects of interest

**Gordon O'Brien** from the Centre for Water Resources Research gave a brief overview of the SASAQ's conference that was held prior the FEN, and encouraged participants to get more involved with SASAQ's in the future. He then presented on the Fish Swimways programme. Fragmented rivers, altered processes and river processes are a key focus here, as it links to services that people depend on. Fishways - connecting fish, rivers and people - started in 2014. A national world Fish migration day event was hosted in 2016 at the Kruger National Park.

Key outcomes:

- Heidi would like to pull the work done on this project into the NBA freshwater species chapter.

**Dean Impson** presented on progress with a project using pesticides for inland water rehabilitation in the Western Cape. The Cape is one of the distinct aquatic eco-region of Africa. It has a high number of threatened species and taxa. Invasive alien fishes are a threat in the Cape and all major river systems in the Cape are invaded by 21 species. These invasive fishes are the backbone of recreational angling industry, certainly in the Cape. Cape Nature used Rotenone pesticide in some of the areas to rehabilitate the rivers. This work was funded by DEA and WRC. The rehabilitation was successful even though it was expensive. The rehabilitation at Rondegat dam costed an estimate of 2.5mil as a test. Some concerns were raised on the ethics of using this pesticide. Dean explained the training process and the clearing involved a number of people and SPCA.

Key outcomes:

- There is a draft document on pesticide Rotenone use policy by Cape Nature.

- Questions remain around how best reinvasion can be controlled as raising the barrier of the feeding streams causes fragmentation of habitat.

## **National Biodiversity Assessment (NBA) 2018: Freshwater component**

**Heidi Van Deventer** presented an update on the NBA and particularly the NBA freshwater component. The NBA focuses on a number of Ecosystem realms: terrestrial, freshwater (wetlands and rivers), estuarine and marine. The project is led in SANBI by Andrew Skowno, supported by Carol Poole. More information on the NBA can be accessed at <http://www.sanbi.org/nba> . Heidi's presentation included information on the team contributing towards the NBA 2018 Freshwater component.

**Namhla Mbona** presented about the integrated wetland data in improving the National Wetland Map 5. She gave a background to the existing wetland map versions used in other assessments. The different map versions had been produced using different mapping methods. Most of the previous map versions have been modelled rather than desktop mapping. For map version 5 some areas have been selected as focus to do desktop mapping. The selection of focus areas have been selected based on resource available. A team of 13 data capturers from contributing institution have been trained for the mapping. The datasets from the desktop mapping are being integrated with other datasets to form the map version 5.

**Lindie Smith-Adao** presented on mapping river condition with a focus on the PES 2011. Questions that needed clarity on the way forward concerning the rivers assessment included:

- How will we supplement the gaps (the missing data) in the river condition dataset? Do we supplement the gaps with modelled data using the new land cover data from SANBI or existing data from the NBA 2011 (NFEPA river condition which include modelled data)?
- Can we group/lump the PES categories as grouped in the NBA 2011 assessment?

Heidi van Deventer noted that the graphs showed the good condition rivers were significantly reduced. Lindie Smith-Adao agreed that as in the accounting project (run by Jeanne Nel in 2016) the current data showed a decline in good river condition.

Key outcomes:

Issues with datasets and modelling were raised (Nacelles method). Simply using flow generation for the wetland probability map is inadequate. This should be addressed.

Heidi - This was for valley bottom and flood plain systems – to get them better represented. There is a document in which the method for collating NGI data and additional data is detailed for basis of wetland map 5. Many people have been trying to deal with omission and commission errors from previous maps. Nacelles probability map is one of the best currently. It does need to be evaluated in a similar way to previous maps as it is not a fine scale. His data has been accurate between 30-60m – which performs better than NFEPA. We are not proposing to use his data in the assessment. Where his product becomes valuable is giving us an idea of where the original representivity is. These products cannot be used for EIAs or fine scale planning. You need to conduct a different process. There is a call to please submit data to SANBI wherever you do field work in order to improve the map and assist with accuracy assessment of these products.

For the river PES historical reference condition is needed. There will be a challenge to assign a PES for artificial systems. It's important to look at the functionality of the artificial wetland / river, and what it is contributing to the landscape. If it is declared a significant water resource, then you have to consider it and consider it a new reference resource point and set your PES from there. Using 1:500 rivers in water affairs, everything that doesn't have condition will use landcover to try to give it a condition.

These NBA reports are very important. The issue of a highly reduced aquatic capacity has huge ramifications on the quality of data. These must not be 'sweetheart' reports. We need to decide on the spaces that need to be monitored, and report on what monitoring is not happening, so that decision makers can see the capacity issues at play. There is a need to look at what is holding us back going forward.

On NFEPA's-not being meant for EIAs or fine scale planning, is this because it represents desktop planning, and is there groundtruthing necessary? In DWS, we are instructed to use NFEPA's.

Heidi – she was referring to NFEPA wetlands. They only represent 54%. The NFEPA extent is what should be used. SANBI is in the process of appointing a freshwater coordinator. They will look at an update of NFEPA.

Siya - Field verifications do enhance data sets, but this still won't apply for EIAs. Project specific work needs to be ongoing.

Namhla - The first aim on these national products is about picking up presence and absence, which will trigger the fine scale work.

## **Freshwater research programme: DEA and SANBI**

**Deshni Pillay** presented on SANBI's freshwater research programme. John Dini's Directorate used to lead and co-ordinate the FEN and now the work has moved to Deshni Directorate BAM. Freshwater works in SANBI have currently secured funding's from WRC to work on the wetland mapping. Three major work streams have been identified; National status and planning for freshwater biodiversity, wetland benefits and monitoring working for wetland interventions and information management systems to support wetland and freshwater biodiversity data management and decision support.

**Farai Tererai** presented on Working for Wetlands research questions. The Working for Wetlands programme used to be within SANBI and has moved to DEA. The mandate is to protect, promote

wise use of wetlands and to rehabilitate. On average the programme rehabilitates 120 wetlands per year in all provinces. Budget is often a constraint and some wetlands need to be prioritised. Research is needed to support the prioritisation process.

Key outcomes:

- The Department of Environmental Affairs and SANBI welcomed the possibility of forming partnerships with universities and creating student masters projects to answer some of the DEA and SANBI research questions.
- There is opportunity for collaboration to meet the research agenda: Space for provinces to provide inputs on what they are doing may be a way forward for future FENs. NGOs can contribute where they are aware of what is happening across the landscape. If FEN is actively fostering collaboration, it makes the community more resilient.
- We need to engrain in communities that the point of the work is to create a sustainable environment. We need to emphasise 'wise use' and cross fertilise the science with indigenous knowledge systems. This approach is to be taken forward through the benefits component of the NBA.

## Feedback from 2016 FEN:

A note from **Boyd Escot** was read by way of feedback on **SPLUMA**

: Water features are not yet considered within KZN schemes-either as neither catchments nor linear features. There is a national initiative to develop guidelines on how schemes should be constructed into which we (EKZNW) commented, one concern being how freshwater priorities are considered. I have had no feedback on this as yet – efforts are ongoing. At the moment, EKZNW plans on developing an overlay product based on smaller catchments as a means of incorporating this data. We are still investigating the efficiency of this approach.

In addition, we are trying to strengthen the concepts of provincial and national interest within the KZN SPLUMA bill currently being drafted. The current idea is to try to identify categories which fulfil these categories, then develop norms and standards on how they should be incorporated. Without this approach some have argued that constitutionally, the local municipality has priority in land use decision planning, to the extent that these larger interests could be overruled or ignored. Norms and standards would have to be considered at a local scale.

In another initiative, a national task team has been established to see how strategic water areas (national) are mapped at a more refined scale. An initial mapping draft was completed by EKZNW and submitted to the team for consideration.

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Another approach has been developed by David Le Maitre. The task team, plans on meeting on the 19<sup>th</sup> July to discuss this further.

Finally, please note that the spatial data infrastructure (SDI) regulations have just come out. This has direct bearing on data management and custodianship among other things.

**Dean Impson** reported on aquatic capacity in provincial agencies:

There was an article in WaterSA by Dean and Hermien based on a previous survey of provincial capacity. There is a need for adequate capacity at regional levels in order to meet needs of NWRS. There were no participants from the Free State, Eastern Cape and Limpopo attending the 2017 FEN.

## Key outcome:

- Dean to create a report card on capacity and participation for next year.

## **Wrap up**

### ***Documentation and circulation of FEN proceedings***

It was agreed that the FEN register would be circulated within a week and that FEN proceedings would be circulated within a month and placed, together with presentations, on the FEN page of SANBI's Biodiversity Advisor. The Wetlands Society offered to disseminate information more widely through their mailing list.

### ***Next FEN***

The following were suggested for the next FEN: [>>>we may want to separate process and content...]

- Need space for practitioners to bring their questions
- Space for conversation on challenges emerging out of DWS NWRS
- Also an ask for Strategic Water Source Areas to be foregrounded
- Input from all the provinces (a rough show of hands indicated that only five provinces were represented, national government officials formed the largest group of participants, then practitioners followed by universities and research agencies)
- NBA feedback
- Capacity building to support making the case for freshwater work eg how do we sell stewardship more effectively to farmers? How do we develop an understanding of the value of water and soil?

There was support for tagging FEN on to other freshwater conferences to enable savings on travel.

**Ndileka Mohapi** closed the FEN, noting that the gap between research and implementation has been a problem in the past, and we are starting to bridge that gap. This means that we can start to ensure that policy is an effective remedy to the real challenges. When this network started, there

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was a lot of hesitation because of the interdepartmental platform that already exists. However, there is no duplication as this platform has a wide set of stakeholders, which means there is better cross pollination. We need to think about us being members of one sector. We need to think about not enforcing silos.

In most instances somebody starts a process, and later others come on board. We need to keep working together and improving our relationship. We recognise the wetland partners as part of our community. We must remember to not leave anyone behind, and to continue to communicate with each other.

**NOTE:**

All the presentations and shared resources of the FEN 2017 are loaded on the Freshwater Ecosystem Network Learning Network page on Biodiversity Advisor:

[http://biodiversityadvisor.sanbi.org/participation/freshwater-ecosystem-network/fen-2017/29-june/.](http://biodiversityadvisor.sanbi.org/participation/freshwater-ecosystem-network/fen-2017/29-june/)