

Unlocking SAEON's Coastal and Marine Data for Natural Capital Accounting

From environmental observation to national ecosystem accounts



Safiyya Sedick and Nicole du Plessis
NRF-SAEON Egagasini

National NCA Forum 2026 · 14–15 September · Statistics South Africa Auditorium
Session 2 · From Robust Foundations To Credible Evidence

NRF – SAEON: A strong data foundation

7

SAEON monitoring nodes spanning
terrestrial, coastal and marine ecosystems

3

Major Research Infrastructure platforms

How do we move from a strong observation base to account-ready evidence?



What SAEON has: the observation base

Long-term, systematic observation spans the full coastal-to-offshore gradient:

Open-access, quality-assured datasets and observation systems that support research, monitoring and collaboration.

Rocky shores

Coral reefs

Kelp forests

Pelagic systems

Estuaries

Sandy beaches

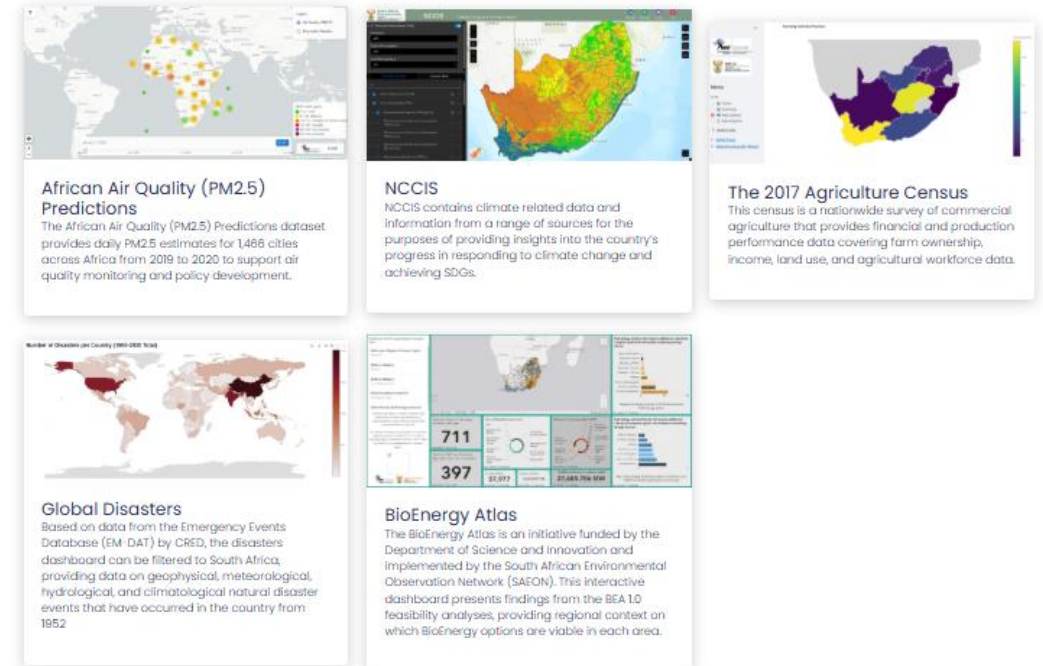
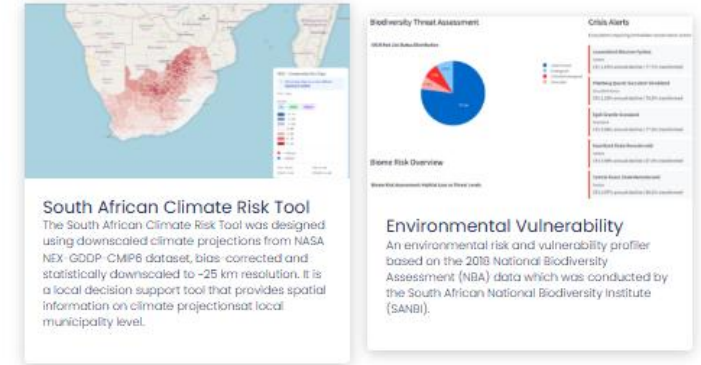
Mangroves

Offshore seafloor

Featured Products

SARVA is home to a growing number of themed based atlases that investigate the spatial characteristics of risks and exposure.

[Know More](#)



5,488

Open Datasets

4

Risk Profiles

53

Vulnerability Indicators

49

Data + SDG Indicators

Where we left off in 2024

NRF Community of Practice: Ocean Accounts Framework

WP2 moved from understanding the role of oceanographic research and large datasets towards testing existing observations for ecosystem accounting.

2020–2022 | Oceanographic research + large datasets

2023–2024 | Earth observations for ecosystem accounting

1

Explored how existing observations could support ecosystem accounts.

2

Learned what translation requires

FAIR data, metadata, spatial/temporal consistency and multiple indicators matter.

3

The question now is: what makes environmental observations account-ready?

What accounts need: the SEEA-EA structure

Under the UN's System of Environmental-Economic Accounting - Ecosystem Accounting (SEEA-EA), a credible account needs three components:

Extent

How much of an ecosystem exists, and where — mapped spatially and consistently over time.

Condition

The state of the ecosystem, tracked against a reference condition.

Services

The flows of benefits people receive from the ecosystem, quantified.

Each requires appropriate spatial units, temporal consistency, classifications and documented methods — requirements that observation data must be translated to meet.

Mapping SAEON data against account requirements

Maps well

Long-term temperature, salinity, oxygen and related time series can inform condition assessment.

Maps partially

Some habitat/extent datasets require alignment with account boundaries and classifications.

Does not yet map

Open-ocean observations raise questions about spatial units, boundaries and how ecosystem extent is defined.

The challenge is connecting observation systems to the spatial, temporal and classification structures used by accounts.

Technical barriers to translation

1

Resolution & representativeness

Observation scales may not align with the spatial units, reference periods or reporting frequency required by accounts.

2

Standards, metadata & interoperability

FAIR principles, metadata, classifications and interoperable formats are essential for reuse and integration.

3

Marine spatial boundaries

Coastal and marine systems cross administrative, ecological and jurisdictional boundaries, complicating account design.

Who owns translation?

- The translation step between observation and compiled accounts needs clearer coordination and ownership in the marine/coastal space.
- SAEON and partners have built an Ocean Accounts Framework Community of Practice and contributed to wider ocean-accounting efforts.

What can be done?

- Use the 2026/2027 NCA Strategy review to strengthen the observation
- Make marine and coastal ecosystem accounting an explicit area for development.

Define coordination

Clarify roles across data providers, technical experts and statistical compilers.

Identify who convenes the translation work and maintains the methodological pathway.

Pilot the pathway

Use an existing, well-observed system such as to test the full workflow.

Observation → QA → standards → indicators → account → policy use

Enkosi, Thank you,
Re a leboga, Siyabonga, Dankie



SARAO
South African Radio
Astronomy Observatory



SAAO
South African
Astronomical Observatory



SAEON
South African Environmental
Observation Network



SAIAB
South African Institute
for Aquatic Biodiversity



**iThemba
LABS**
Laboratory for Accelerator
Based Sciences



SAASTA
South African Agency for Science
and Technology Advancement



RISA
Research and Innovation
Support and Advancement