Towards identifying fundamental datasets and associated data custodians for the marine and costal spheres in South Africa – An Integrated Geospatial Information Framework approach

agriculture, land reform
& rural development

Department:
Agriculture, Land Reform and Rural Development
REPUBLIC OF SOUTH AFRICA

NDP 2030

Presentation Overview

Background

The marine and coastal environments are large and important part of South Africa's territory.

The EEZ stretches 200 nautical miles (an area of 154 km2) into the sea from the coastline, including the Indian and the Atlantic oceans islands under its authority.

It contributes approx. R20 billion to SA's economy with a potential to generate more than 1 million jobs.

Scope of the project and deliverables

Phase 1:
Project Inception

Deliverable:
Inception Report

Phase 2:
Literature Review

Deliverable:
Literature Review Report

Phase 3:
Stakeholder interviews and user workshops

Deliverable:
Stakeholder interviews and user workshops

Phase 4:
Criteria identify base data sets & data custodians for MCSDI

Deliverable:
Report & register on criteria, base dataset, themes & custodians for MCSDI

Phase 5:
Comprehensive study of MCSDI

Deliverable:
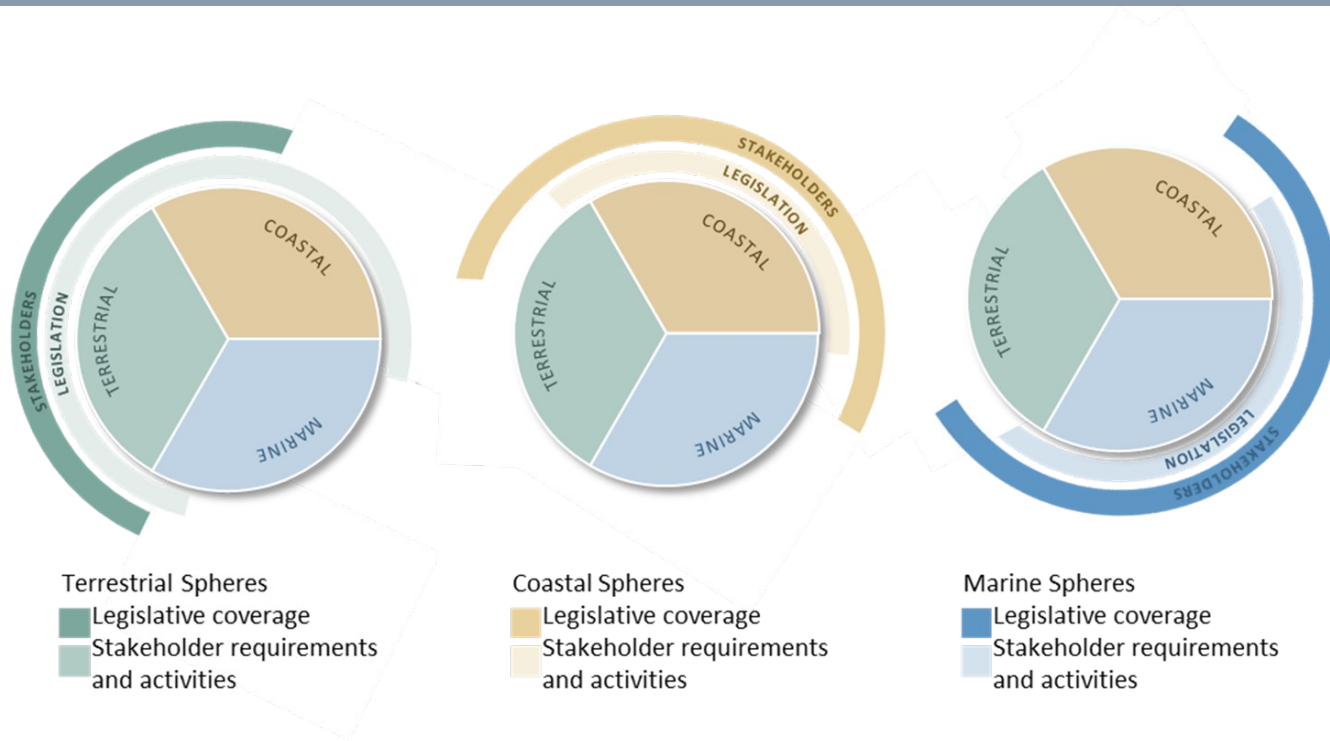Report on benchmarks, best practices, current & future trends

Phase 6:
Positioning and fit-for-purpose structure of MCSDI within SASDI

Deliverable:
Reports on integration, governance & management structure

Phase 7:
Final report

Deliverable:
Final report in the form of a Guideline

Policy and regulatory framework

Terrestrial Spheres
- Legislative coverage
- Stakeholder requirements and activities

Coastal Spheres
- Legislative coverage
- Stakeholder requirements and activities

Marine Spheres
- Legislative coverage
- Stakeholder requirements and activities

The Spatial Data Infrastructure Act, 2003 (Act No. 54 of 2003) Crosscuts - various spatial domains (terrestrial – coastal – marine), interdisciplinary (spatial management, scientific expert domains), has to consider at least four dimensions (geographic, depth/elevation, resolution and time) and various levels of government.

- Section 24 of the Constitution of the Republic of South Africa, provision is made for the role and of the responsibilities of the State as it pertains to the coast.
- Marine Living Resources Act, 1998 (Act No. 18 of 1998)
- Marine Spatial Planning Act, 2018 (Act No. 16 of 2018)
- Integrated Coastal Management Act, 2008 (Act No. 24 of 2008)
- National Environmental Management Act, 1998 (Act No. 107 of 1998)
- Land Survey Act, 1997 (Act No. 8 of 1997)
- National Environmental Management: Biodiversity Act, 2004 (Act 10 of 2014)
- The Hydrographic Act 2019, (Act No. 35 of 2019)
- The Constitution of the Republic of South Africa, 1996 (Act No. 108 of 1996)
- Nature Conservation Board Act 1998, (Act No. 15 of 1998)
- Spatial Planning and Land Use Management Act, 2013 (Act No. 16 of 2013)

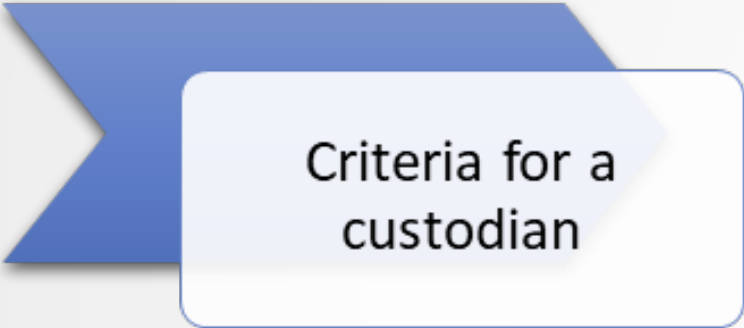# Criteria for identification of a base dataset

Definition of a Geospatial dataset

Geospatial base datasets are the minimum set of **essential** datasets **widely used** as **reference** dataset at various administrative levels to accomplish South Africa's national and international priorities.

Implementation Conditions

i. **Diversity of users** from different sectors derive significant benefit from its use (Compulsory).

ii. **Authoritative reference source** with sufficient detail and accuracy for widespread use. (Compulsory).

iii. Produced as a result of the **core mandate** of the custodian (Conditional).

iv. **Complete coverage** of an area of interest (Conditional).

Criteria for identification of a base data custodian

Criteria for a custodian

i. **Mandated responsibility**

Conditional criterion depend on the **formal appointment by the CSI**, implementing Department and organization to provide the legal basis for the appointment.

i. **Sufficient capacity**

Compulsory criterion, extended to include (but not limited to) resources to manage and maintain a dataset over the entire data life cycle in a standardised manner that should aspire to FAIR Data Principles (**Findable, Accessible, Interoperable, and Reusable**). Where a custodian does not have the required resources, said custodian, in conjunction with the implementation Department, shall develop, implement, and monitor a capacity plan to access and or develop the resources necessary to fulfil the requirement of a custodian.

Marine and Coastal Themes and Datasets

#	Theme	Coordinator	Data sets	Custodians	Data Access Link / Contact Person
1.	**Administrative Boundaries**				
1.1.	**Administrative boundaries 1**	Department of Agriculture, Land Reform and Rural Development	High Water Marks	*Not yet finalized*	
			Low Water Marks	*Not yet finalized*	
			National and International Boundaries	*Not yet finalized*	
			Provincial Boundaries	*Not yet finalized*	
1.2.	**Administrative boundaries 2**	Municipal Demarcation Board (MDB)	Wards	MDB	http://dataportal-mdb-sa.opendata.arcgis.com
			Local Municipalities	MDB	
			District Municipalities	MDB	
			Magisterial Districts	Department of Justice and Constitutional Development	https://www.justice.gov.za/maps/maps.html

Theme	
1.1. Administrative Boundaries I	
1.2. Administrative Boundaries II	
1.3. Regulatory Boundary	New sub theme
1.4. Activity Boundary	New sub theme

Theme	Dataset
1.1. Administrative Boundaries I	
1.2. Administrative Boundaries II	
1.3. Regulatory Boundary	
1.4. Activity Boundary	**Fishing Area**

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Short Term Strategy (within a year)

STAGE 1 – Year 1

Step 1 - Governance

- Present study results to Committee for Spatial Information & get support
- **Present results to Minister & get political support**
- Marine & Coastal Office - set up in Secretariate
  - ➤ Knowledge of marine & coastal sphere & industry

Step 2 - People

- User requirement assessment (workshop)
  - ➤ **Socialize SDI, SASDI & MCSDI**
  - ➤ **Review of base datasets**
  - ➤ Engage with potential data custodians
  - ➤ Review of geoportals
  - ➤ Engage with key stakeholders on Advisory Body & CSI

Step 3 - Technology

- Establish WG on priority base datasets in marine & coastal spheres
  - ➤ **Define & delineate high-water mark, low-water mark & low-water line**
- Establish catalogue of marine and coastal base datasets
- Establish federated data discovery portal for marine and coastal spheres
  - ➤ Agreements with organizations selling data & on pricing policy

Step 4 - Governance

- Develop strategy for integrating the marine and coastal spheres into SASDI
  - ➤ Identify champions
  - ➤ **Monitoring & evaluation (DPME)**
  - ➤ Define ecosystem
- Develop Action Plan
  - ➤ Objectives
  - ➤ Guiding principle
  - ➤ Goals
- **Establish Advisory Body for marine & coastal spheres**

Medium Term Strategy (2- 5 Years)

YEARS 2-5

Step 5 - Technology

- WG on base datasets in marine & coastal spheres
  - ➤ Formalize base datasets, themes & sub-themes
- **Officially recognize base dataset custodians**
  - ➤ **Publish in Government Gazette**
  - ➤ Amend data custodianship policy to include procedure for appointing data custodian

Step 6 – Governance

- Formalize policy for integrating of marine & coastal spheres into SASDI
  - ➤ **Assess applicability of current policy against marine & coastal spheres**
  - ➤ Assess alignment to relevant marine and coastal legislation
- Appoint coastal and marine representatives to CSI
- Set up marine & coastal Advisory Body

Step 7 - People

Establish MCSDI Forum & network of marine & coastal stakeholders

Long Term Strategy (3 – 5 Years)

YEARS 3-5

Step 8 - Governance

- Review of SDI Act and SASDI
  - ➢ Aligning to relevant international framework
  - ➢ **Review legislation & policy**
  - ➢ Parliamentary accountability
  - ➢ Review governance & operational framework
  - ➢ Formalize budget allocation

Step 9- People

- Establish sufficient, domain relevant capacity in Secretariate
- **Establish partnerships with local, regional, international organizations**
  - ➢ Data providers

Step 10 - Technology

- Establish analytical & knowledge platforms
- **Facilitate innovative technologies for data collection**
  - ➢ Citizen Science
  - ➢ Digital Twin (SAEON Sentinel sites)
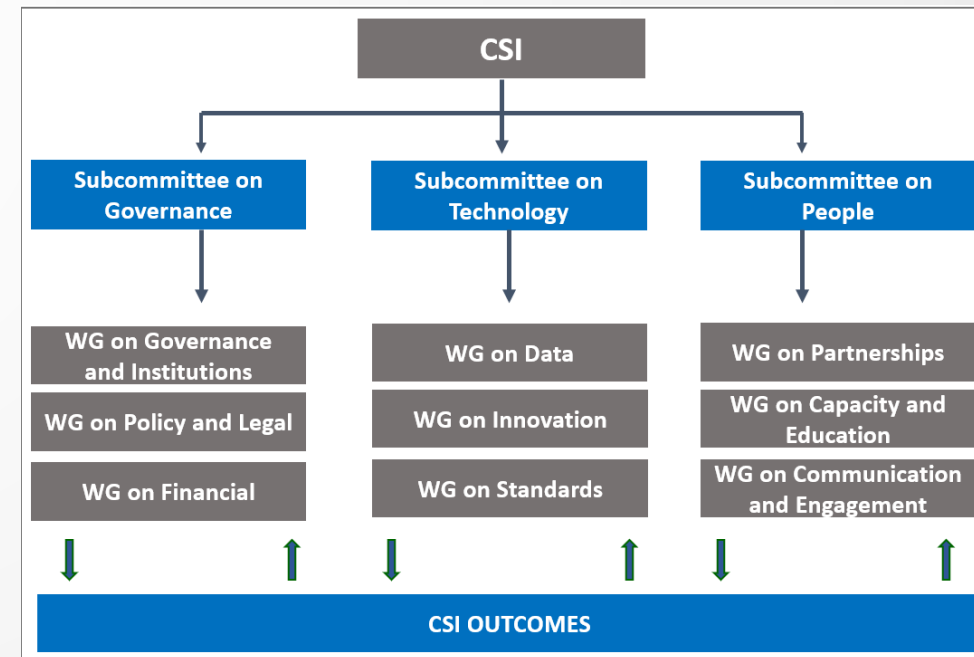
Step 11 - Governance

- Conduct monitoring & evaluation
- Conduct cost-benefit analysis
- Policy to include mandate for geospatial data in legislation
- **Formalize budget allocation for custodial function**

The Governance structure
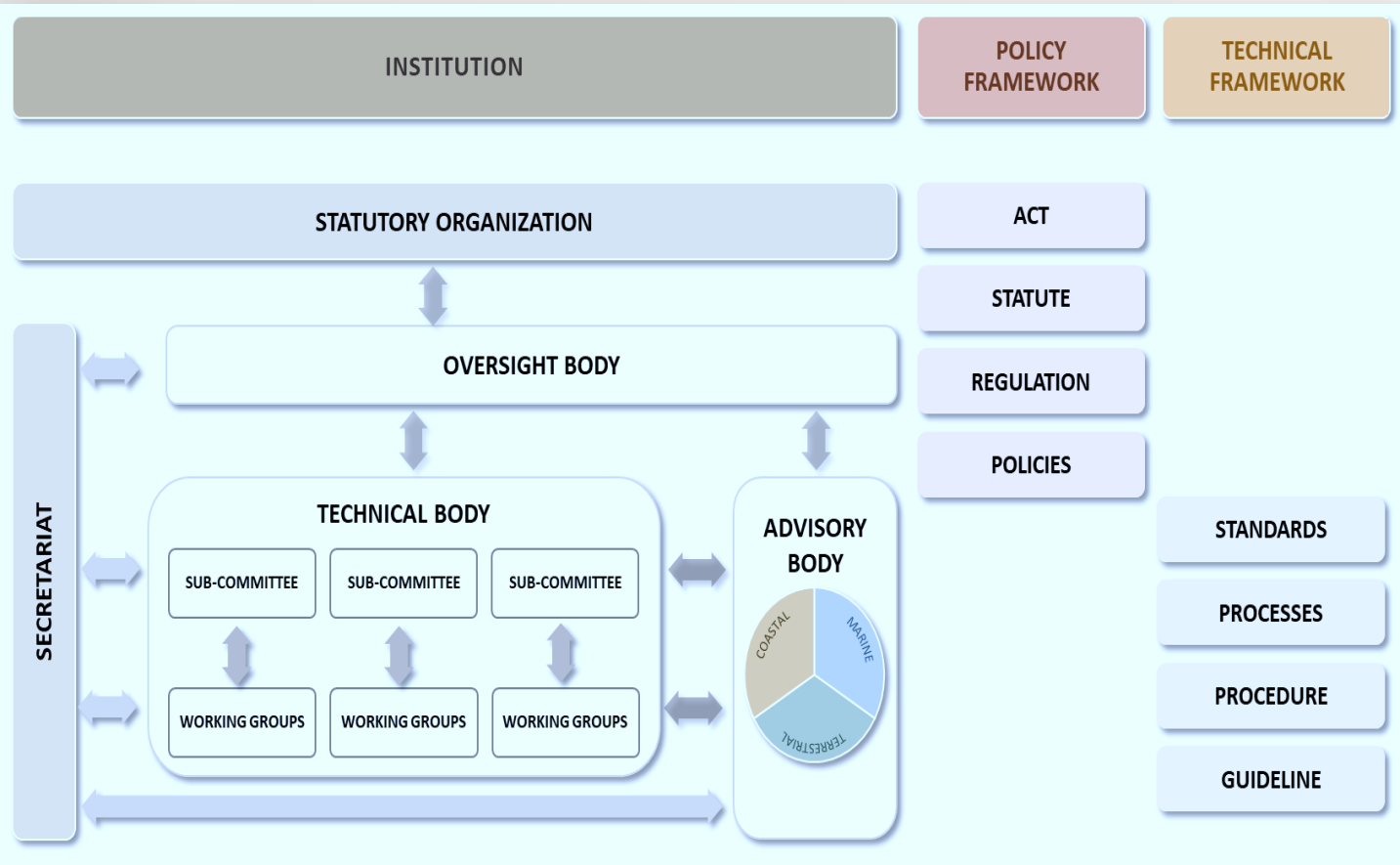
Recommendations

- To ensure alignment to and compatibility between SASDI and MCSDI, it is recommended that the <u>strategy for marine and coastal spheres</u> is to <u>integrate</u> them into the existing <u>South African Spatial Data Infrastructure (SASDI)</u>.

- There will not be a separate marine and coastal SDI to that of the terrestrial or South African SDI.

- This is not only the <u>standpoint from an international perspective</u> but also from <u>stakeholders</u> in the marine and coastal spheres in South Africa.

- There is a <u>change in the terminology</u> from describing it as the "Marine and Coastal SDI (MCSDI)" to the "integration of the marine and coastal spheres into SASDI".

THANK YOU

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