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

01 Background
02 Scope of the project and deliverables
03 Policy and regulatory framework
04 The strategy and recommendations
05 Conclusion
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
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 Spatial Planning Act, 2018 (Act No. 16 of 2018)
- Integrated Coastal Management Act, 2008 (Act No. 24 of 2008)
- 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)
- Spatial Planning and Land Use Management Act, 2013 (Act No. 16 of 2013)
Criteria for identification of a base 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.

1. **Diversity of users** from different sectors derive significant benefit from its use (Compulsory).
2. **Authoritative reference source** with sufficient detail and accuracy for widespread use. (Compulsory).
3. Produced as a result of the core mandate of the custodian (Conditional).
4. **Complete coverage** of an area of interest (Conditional).
Criteria for identification of a base data 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

<table>
<thead>
<tr>
<th>#</th>
<th>Theme</th>
<th>Coordinator</th>
<th>Data sets</th>
<th>Custodians</th>
<th>Data Access Link / Contact Person</th>
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<tbody>
<tr>
<td>1.</td>
<td>Administrative Boundaries</td>
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<tr>
<td></td>
<td>1.1. Administrative boundaries I</td>
<td>Department of Agriculture, Land Reform and Rural Development</td>
<td>High Water Marks</td>
<td>Not yet finalized</td>
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<td>Low Water Marks</td>
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<td>National and International Boundaries</td>
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<td>Provincial Boundaries</td>
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<td>Local Municipalities</td>
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<td>District Municipalities</td>
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</tbody>
</table>

## Theme

- **1.1. Administrative Boundaries I**
- **1.2. Administrative Boundaries II**
- **1.3. Regulatory Boundary**
- **1.4. Activity Boundary**

## Dataset

- **1.1. Administrative Boundaries I**
- **1.2. Administrative Boundaries II**
- **1.3. Regulatory Boundary**
- **1.4. Activity Boundary** - Fishing Area
## Short Term Strategy (within a year)

### STAGE 1 – Year 1

<table>
<thead>
<tr>
<th>Step 1 - Governance</th>
<th>Step 2 - People</th>
<th>Step 3 - Technology</th>
<th>Step 4 - Governance</th>
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</thead>
</table>
| • Present study results to Committee for Spatial Information & get support | • 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 | • 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 | • 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 |

- **Knowledge of marine & coastal sphere & industry**
- **Marine & Coastal Office - set up in Secretariate**
- **Socialize SDI, SASDI & MCSDI**
- **Review of base datasets**
- **Engage with potential data custodians**
- **Review of geoportals**
- **Engage with key stakeholders on Advisory Body & CSI**
- **Socialize SDI, SASDI & MCSDI**
- **Review of base datasets**
- **Engage with potential data custodians**
- **Review of geoportals**
- **Engage with key stakeholders on Advisory Body & CSI**
### Medium Term Strategy (2-5 Years)

#### 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)

<table>
<thead>
<tr>
<th>Step 8 - Governance</th>
<th>Step 9 - People</th>
<th>Step 10 - Technology</th>
<th>Step 11 - Governance</th>
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<tr>
<td>• Review of SDI Act and SASDI</td>
<td>• Establish sufficient, domain relevant capacity in Secretariate</td>
<td>• Establish analytical &amp; knowledge platforms</td>
<td>• Conduct monitoring &amp; evaluation</td>
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<td>➢ Aligning to relevant international framework</td>
<td>• Establish partnerships with local, regional, international organizations</td>
<td>• Facilitate innovative technologies for data collection</td>
<td>• Conduct cost-benefit analysis</td>
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<tr>
<td>➢ Review legislation &amp; policy</td>
<td>➢ Parliamentary accountability</td>
<td>➢ Citizen Science</td>
<td>• Policy to include mandate for geospatial data in legislation</td>
</tr>
<tr>
<td>➢ Parliamentary accountability</td>
<td>➢ Review governance &amp; operational framework</td>
<td>➢ Digital Twin (SAEON Sentinel sites)</td>
<td>• Formalize budget allocation for custodial function</td>
</tr>
<tr>
<td>➢ Review governance &amp; operational framework</td>
<td>➢ Formalize budget allocation</td>
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The Governance structure

Current

The future
Recommendations

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

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

• This is not only the standpoint from an international perspective but also from stakeholders in the marine and coastal spheres in South Africa.

• There is a change in the terminology from describing it as the “Marine and Coastal SDI (MCSDI)” to the “integration of the marine and coastal spheres into SASDI”.
This project would not have been possible without the support from the:

- Department of Agriculture, Land Reform and Rural Development
- Department of Forestry, Fisheries and Environment
- South African National Defence Force (SANHO)
- South African National Biodiversity Institute
- Council for Industrial and Scientific Research
- GeoScope South Africa