The NSDI:
A recent Achievement in Namibia

The National Spatial Data Infrastructure for Namibia: Benefits and Potentials
OUTLINE

- Problem Definition
- What is a National Spatial Data Infrastructure?
- Benefits of a spatial data infrastructure: Namibian examples
- Namibia Statistics Agency .... Mandate
- NSDI Strategic Plan
Almost 80% of government data has a spatial component: the “Where” what is. The “where” is neglected, small “hot spots” of problems, risks or opportunities remain unknown.

New, low cost technology not used, sometimes resulting in loss of life and slow response to disasters.

Data quality and currency unknown and undocumented metadata.

Lack of public awareness of availability of data.

Different data standards making data incompatible.

Uncoordinated data collection: various line ministries collect the same data at high cost, unknown to each other, resulting in millions of N$ wastage.

...etc.
It costs approximately N$50 million to acquire aerial imagery of the whole country.

N$300 million required if done differently by 6 agencies— all coming from same source, treasury.

If coordinated and shared, only N$65 million will be spent, saving N$235 million.

Solution: A Namibia Spatial Data Infrastructure that places value on the use of spatial data, avoiding wastage, improving coordination and increasing use of spatial data for a knowledge based society.
2. WHAT IS A NSDI?

An information infrastructure built on ICT.

“...the set of policies, standards and procedures under which organisations and technologies interact to foster more efficient production, management, access and use of spatial data in a country.”

2. WHAT IS A NSDI?

1. In summary the NSDI will:

1. clarify the value placed on spatial data in Namibia;
2. link the impact of spatial data sharing to the ultimate utilisation of spatial data;
3. establish guiding principles and strategies to enhance quality and accessibility;
4. avoid duplication of efforts and wasteful use of limited resources;
5. increase the frequency of updating where this is required to maximise usefulness; and
6. ensure that users including the general public are aware of the availability of spatial information.

Rajabifard et al., 2002
3. BENEFITS OF A SPATIAL DATA INFRASTRUCTURE:

NAMIBIAN EXAMPLE 1: “WHERE” exactly are severely poor households in Namibia?

- A dot represents homesteads in rural areas and dwelling structure in urban.
NAMIBIAN EXAMPLE 2: **WHERE** exactly is the next clinic needed?
Example 4: THE POWER OF KNOWING THE “WHERE”...

Case study of Windhoek Aquifer

The position of the aquifer is based on an image from an article titled "Management of City aquifers from anthropogenic activities, soil dynamics and challenges for the future: An example of the Windhoek aquifer, Namibia." by B.S. Mapani, A.F. Kamona (both UNAM) and U. Schreiber (Geological Survey of Namibia)
NAMIBIAN EXAMPLE 3: THE POWER OF KNOWING THE “WHERE”...

Flooding in Eastern Kavango in 2012, the dots represent homesteads.
NAMIBIAN EXAMPLE 4: WHERE is Bush Encroachment most severe?

Risks that bush encroachment reduces livestock production in 2015

- high risk
- low risk

Same approach can be used for monitoring important agricultural and other natural resources.
Objectives of the Statistics Act, No. 9 of 2011 are to:

- Provide for the development of the National Statistics System and provide for its components and objectives;
- To establish the Namibia Statistics Agency and the Board of the Namibia Statistics Agency and provide for their powers and functions;
- To establish the National Spatial Data Infrastructure and provide for its objectives;
- To establish the Committee for Spatial Data and provide for its functions;
- To provide for incidental matters.

Establishment of the NSDI is covered in detail in the Statistics Act, Sections 47 – 49.
The Objectives for NSDI as set out in the Statistics Act 47 (2):

- facilitate the capture of spatial data through cooperation between government bodies and other organs of state;
- promote effective management and maintenance of spatial data;
- promote the use and sharing of spatial data in support of spatial planning, socioeconomic development and related activities;
- create an environment which facilitates coordination and cooperation among stakeholders regarding access to spatial data;
- eliminate duplication in the capturing of spatial data; and
- facilitate the protection of copyright of the state in works relating to spatial data.
Key NSDI Stakeholders

Ministry of Urban and Rural Development

Ministry of Safety and Security

Ministry of Education

Ministry of Land Reform

Office of the Prime Minister (DRM)

Ministry of Economic Planning and National Planning Commission

Polytechnic of Namibia

University of Namibia

Roads Authority

Telecom Namibia

Mobile Telecommunication Company (MTC)

NamWater

NamPower

Trans Namib

NAMIBIA STATISTICS AGENCY (coordinating body)

Ministry of Works and Transport

Ministry of Mines and Energy

Polytechnic of Namibia

University of Namibia

Roads Authority

Telecom Namibia

Mobile Telecommunication Company (MTC)

NamWater

NamPower

Trans Namib

Ministry of Education

Ministry of Health and Social Services

Ministry of Environment and Tourism

Ministry of Agriculture, Water and Forestry

Policies

Standards

Human Resources

Partnerships

ICT Networks
5. NSDI STRATEGIC PLAN

5.1 NSDI MISSION STATEMENT

– To coordinate, facilitate and support the implementation of an information infrastructure that ensures efficient production, use, maintenance and dissemination of relevant, quality and accurate spatial information that is fit-for-purpose, particularly in providing evidence-based decision making at all levels of society.

5.2 NSDI VISION STATEMENT

– To be a leader for quality spatial data delivery in Africa in accordance with international standards and best practices.
5.3 NSDI CORE VALUES

1. *Focus on service delivery to all stakeholders.*

2. *Transparency of spatial data practices and procedures with all Custodians.*

3. *Accuracy in spatial data and metadata.*

4. *Timeliness in provision of spatial data and metadata.*

5. *Extensive stakeholder engagement.*

6. *Supporting spatial data partnerships within government and other sectors of society.*
5.4 NSDI Links to other Government Initiatives:

1. Links to National Development Plans (NDP4)

2. Links to e-Government Strategy (eGASP)

3. Links to Vision 2030
5.5 NSDI performance indicators

1. user satisfaction,
2. timeliness of information dissemination,
3. effectiveness of NSDI services, e.g. number of spatial data requests serviced by the NSDI,
4. availability and accessibility of the NSDI Website and NSDI Geoportal,
5. website statistics of user accesses to the NSDI Website and NSDI Geoportal, and
6. activeness of NSDI user group(s),
7. GIS adoption rate and NSDI implementation in government entities,
8. employment of staff with degrees in geospatial sciences.
5.6 Critical success factors for the NSDI

1. achieving harmonised data and information policies relating to spatial data, across government, including protection of state copyright and confidential, privileged or sensitive information,

2. achieving quantifiable cost savings by avoiding duplication of spatial data collection work,

3. achieving capacity building goals for all agencies to be able to implement NSDI standards efficiently and effectively,

4. achieving wide stakeholder engagement both inside and outside government, including businesses and civil society,

5. achieving more open and widespread data sharing across government departments.
NSDI STRATEGIC PLAN cont...

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<thead>
<tr>
<th>ITEM</th>
<th>TOTAL</th>
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<td>STRATEGIC OBJECTIVES</td>
<td>12</td>
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<td>KEY ACTIONS</td>
<td>65</td>
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### Some Key Actions

<table>
<thead>
<tr>
<th>S/N</th>
<th>ACTION</th>
<th>TIME FRAME</th>
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<tbody>
<tr>
<td>1.</td>
<td>Justify, secure and manage the NSDI Fund as per Section 17 of the NSDI policy;</td>
<td>2015 – 2020</td>
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<td>2.</td>
<td>Establish and administer over 2 working groups (technical standards and governance working groups)</td>
<td>2016 - 2020</td>
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<td>3.</td>
<td>Implement standards, guidelines and regulations for a standards compliance program;</td>
<td>2015 – 2018</td>
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<td>4.</td>
<td>Administer over partnerships agreements with NSDI partners/data custodians</td>
<td>2015 – 2017</td>
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<td>5.</td>
<td>Establish and operate a NSDI Help Desk at NSA</td>
<td>2016 - 2020</td>
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<td>6.</td>
<td>Prepare online information services (geoportal for discovery, view and download facilities)</td>
<td>2016 – 2018</td>
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<td>7.</td>
<td>NSDI licensing and pricing policies</td>
<td>2016 – 2017</td>
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<td>8.</td>
<td>Implement NSDI communication plan</td>
<td>2015 – 2020</td>
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<td>9.</td>
<td>Ensure adequately trained personnel of the NSDI Secretariat to effectively perform technical functions of the NSDI</td>
<td>2016 – 2020</td>
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<td>10.</td>
<td>Provide support services to GRN departments/agencies</td>
<td>2016 – 2020</td>
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<td>11.</td>
<td>Facilitate collection of near real time data for disaster risk management, food security, and environment</td>
<td>2017 – 2020</td>
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<td>12.</td>
<td>Implement an advance data collection calendar (ADCC)</td>
<td>2016 – 2018</td>
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<td>13.</td>
<td>Facilitate GIS adoption rate by government</td>
<td>2016 – 2020</td>
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<td>14.</td>
<td>Develop and provide educational and awareness materials</td>
<td>2015 - 2020</td>
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5.8. Critical success factors for the NSDI

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<tr>
<th>STRATEGIC YEAR</th>
<th>AMOUNT (NAD)</th>
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<tbody>
<tr>
<td>2015 / 16</td>
<td>849 000</td>
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<tr>
<td>2016 / 17</td>
<td>10 400 500</td>
</tr>
<tr>
<td>2017 / 18</td>
<td>12 514 500</td>
</tr>
<tr>
<td>2018 / 19</td>
<td>11 033 500</td>
</tr>
<tr>
<td>2019 / 20</td>
<td>9 866 500</td>
</tr>
<tr>
<td>TOTAL</td>
<td>44 664 000</td>
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THANK YOU!