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Spatial Data & the 6NR

Country Spatial Data Needs Assessment & the Spatial Data Summit

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Country Spatial Data Needs Assessment

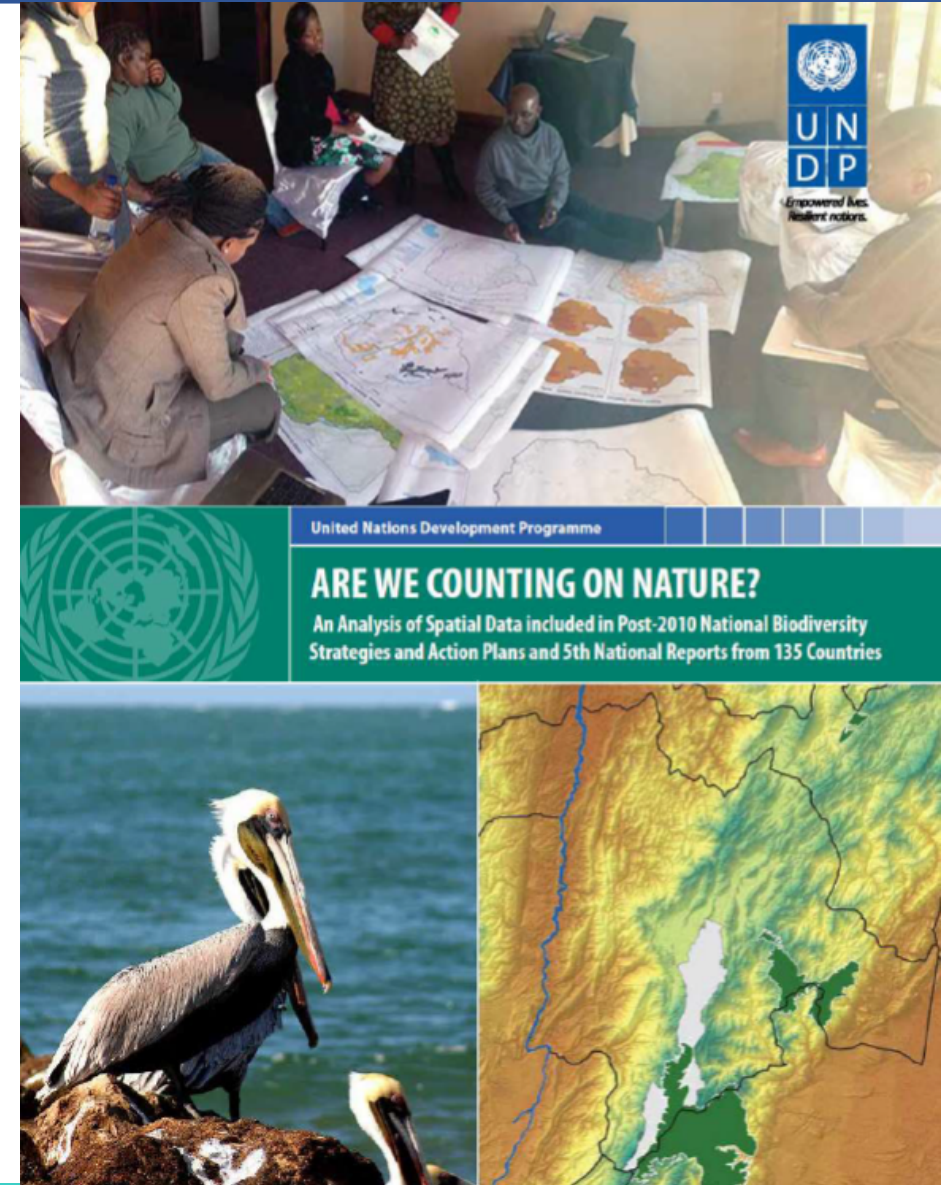
Spatial Data for Biodiversity Conservation

Why spatial data for biodiversity planning and reporting?

- Powerful tool to make accurate & impactful decisions
- Can identify priority zones for conservation, mixed land-use and development

However, countries are not utilizing spatial data:

- In the 5NR the average # maps = <5
- 80% of all NRs had no actionable maps
- 0% addressed all Aichi Targets fully



Country Needs Assessment Questionnaire

Spatial Data

>**88%** of respondent countries have a country spatial lab/organization

Yet...

82% have a **HIGH** need for land, resource use & human footprint data layers

73% have a **HIGH** need for basic socio-demographic data layers

50% have a **HIGH** need for land cover, bio-geographic data layers

Spatial data platforms:

- *Include* national institutions in design & provide training
- Have ease of use
- Share lessons and insights for data collection, analysis and use

Country Data Capacity to Provide Maps

	Basic socio-demographic (3 data layers)	Land, resource & human (11 data layers)	Land cover, bio-geographic (12 data layers)
Average % of the data layers countries have capacity to provide maps	43%	49%	48%
Average % of the data layers included in NBSAP, NR & development plans	35%	30%	36%

Data Layers Needed for Actionable Maps

>80% identified the following data layers as most needed for developing actionable maps for national biodiversity reporting:

1. Habitat and habitat fragmentation
 - intactness and degradation of wetlands, forests and grasslands
2. Climate vulnerability
 - vulnerability of ecosystems & species to climate
3. Land cover & change
4. Land use & change

Spatial Data Barriers

Technical barriers

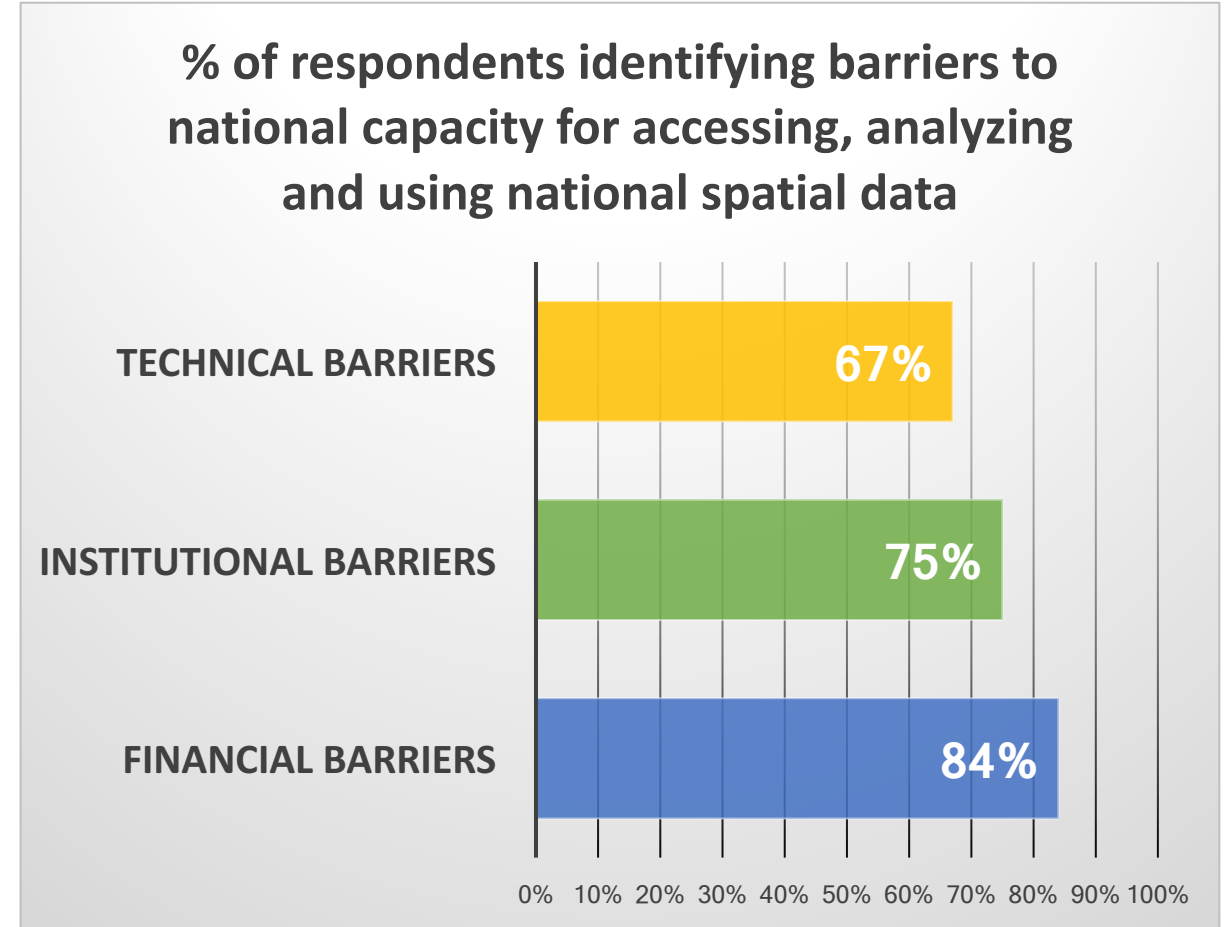
- “Lack of technical skills and tools.”

Institutional barriers

- “Lack of coordination/cooperation among institutions”
- “Lack of institutional will”
- “Information fragmented between institutions.”

Financial barriers

- “Lack of funding for spatial data projects.”



Spatial Data Limitations

- Coarse spatial resolution
- Gaps between data and national statistics
- Absence of resources (human, finance, technology)
- Expensive ground check
- Lack of information at local scale
- Lack of culture to use data
- Lack of standardization of information
- Need for modernization of data processing
- Lack of funding*

***Financial resources identified as the resource that could have the greatest impact on country spatial data capacity**

Spatial Data for Conservation Questions

- Biodiversity vulnerability, status of biodiversity
- Ecosystem conservation priorities and opportunities
- Factors controlling ecosystem degradation
- Deforestation, coverage of forest and change in coverage
- Water resources
- Human footprint
- Protected Areas
- Habitat fragmentation, degradation & loss
- Threatened species
- Carbon content and CO₂ emissions
- Advancement of the agricultural frontier and agricultural dynamics;
- Resilience
- Surveillance

Main takeaways from survey



- Varying spatial data capacity
- Broad need for all data layer types
- Shared concerns about technical, institutional and financial barriers
- Common goal for data tools and platforms to engage countries



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Forest Integrity & The Nature for Development Spatial Data Summit

**25-27 October 2017
Washington D.C.**

Forest Integrity for Sustainable Development Project

25 October, Washington D.C.

Objective: NASA remote-sensing data for forest cover & connectivity, and human pressure.

Outcome: Identification of forest data layers for biodiversity conservation.



- **Eight pilot countries:**
- Democratic Republic of Congo
- Brazil
- Colombia
- Ecuador
- Indonesia
- Peru
- Viet Nam
- Costa Rica



Forest Spatial Data Layers

- 1. Human footprint:** the extent of human modification of natural habitats.
- 2. Forest condition:** analyze trends in disturbances and loss, identify drivers in particular landscapes, assess when change is caused by humans.
- 3. Forest Fragmentation & Forest Connectivity:** the status and trends of forest fragmentation and patches that are priorities for connectivity.
- 4. Forest Integrity:** the capacity of forests to maintain natural processes and associated biodiversity.



Forest Integrity Analysis - Country Data Capacity

	Human Footprint	Forest Structure Condition	Habitat & Fragmentation	Habitat Connectivity
capacity to provide a spatial map of these data layers	28%	31%	31%	26%
capacity to map trends over time for these data layers	23%	15%	26%	18%

Pilot Country Spatial Data Challenges & Needs

Country Spatial Data Challenges

- Data integration to link separate data systems and layers
- Quality validation and clearance
- Improved data layers such as human footprint and ecosystem services data
- Spatial data resolution
- Lack of communication & data sharing between users and providers
- Financial constraints

Country Spatial Data Needs

- Capacity building for government institutions & training for local data collection
- Partnership & collaboration to support brokering between demand & supply of data sets
- Improved data access, quality and capacity
- Tools and models to analyze trends, prioritize & scenario plan
- Data integration, validation & endorsement
- Tool that has ease of use & ability to show trends and progress
- Financial support

Forest Integrity for Sustainable Development Planning Project

1. Data layers available with instructions for pilot countries, including:
 - Canopy cover
 - Time since disturbance
 - Canopy height
 - Forest structural condition
 - Forest integrity
 - Human Footprint
 - Fragmentation of high integrity forests
 - Connectivity of high integrity forests
2. Feedback from pilot countries on data and utility
 - Requesting each pilot country download the data, review instructions, and provide feedback

Data Summit in Washington D.C.

25 October, Washington D.C.

80+ participants from UN agencies, academia, NGOs, companies, & eight pilot governments

Objective: convene stakeholders to enable full, open & shared access to spatial data.



Data Summit Activities



1. Identify key biodiversity questions
2. Identify data layers to answer questions
3. Convene data users & data providers
4. Determine functionalities of the Data Portal
5. Strategize for a Paris moment at the 15th CBD COP in 2020
6. Produce and sign a Data Declaration

Data Declaration

Developed a non-legally binding statement: the *Nature for Development Declaration on Spatial Data*.

Shared vision for a future where spatial data is:

1. Available to decision-makers
2. Supports accurate and effective decision-making
3. Reports on the effects of conservation and development policies

Endorsement is currently open!

Thank you

Additional Slides

Country Profiles

Data Layer Type	Country Capacity & Needs	Country A	Country B	Country C
Basic socio-demographic (3 data layers)	Percent of data layers for which country has capacity to provide a spatial map	0%	100%	100%
	Percent of data layers in country NBSAP, National Report and/or development plans.	unknown	unknown	66%
	Level of need for access to basic socio-demographic data layers	High	High	Low
Land, resource use and human footprint (11 data layers)	Percent of data layers for which country has capacity to provide a spatial map	0% or unknown	100%	>80%
	Percent of data layers in country NBSAP, National Report and/or development plans.	0% or unknown	100%	>50%
	Level of need for access to land, resource use and human footprint data layers	High	High	Medium
Land cover, bio-geographic (12 data layers)	Percent of data layers for which country has capacity to provide a spatial map	>40%	>80%	50%
	Percent of data layers in country NBSAP, National Report and/or development plans	>40%	75%	25%
	Level of need for access to land cover, bio-geographic data layers	High	High	Medium