BID and BIOPAMA

Use of primary biodiversity data and linkages

Andrew Cottam

BID Closing meeting 13th Nov 2019

▶ **Joint Research Centre**

- European Commission's science and knowledge service
- Research on agriculture, energy, transport, health, environment, IT
- 1500 post-docs over 5 sites

▶ **Joint Research Centre**

- Ispra, Northern Italy

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▶ Joint Research Centre

- Digital Observatory for Protected Areas
  (with UNEP-WCMC)
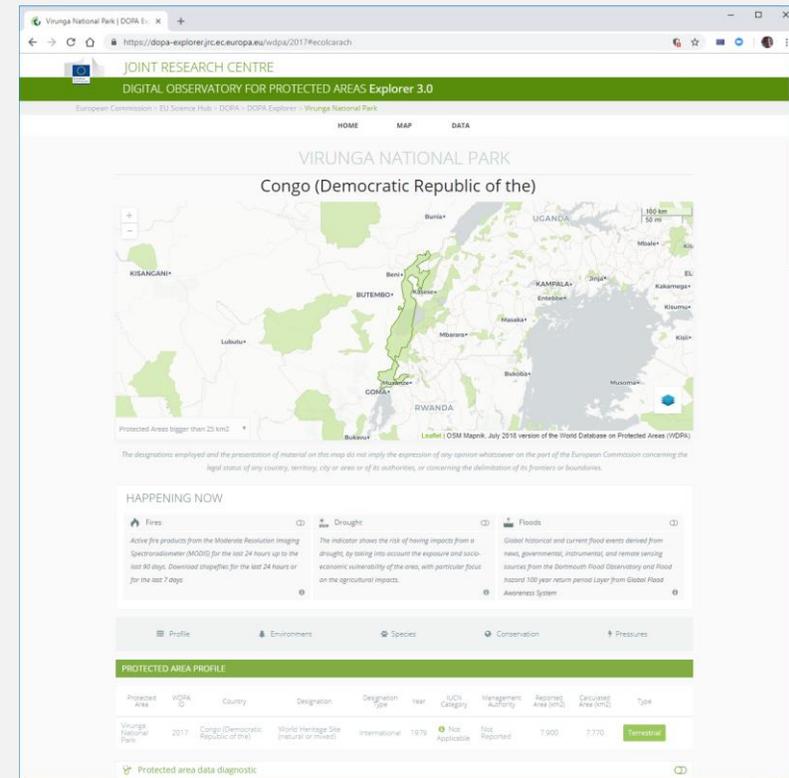
Dubois, G., Bastin, L., Bertzky, B., Mandrici, A., Conti, M., Saura, S., Cottam, A., Battistella, L., Martínez-López, J., Boni, M., Graziano, M. (2016) Integrating multiple spatial datasets to assess protected areas: Lessons learnt from the Digital Observatory for Protected Areas (DOPA). ISPRS International Journal of Geo-Information 5: 242.

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▶ **Joint Research Centre**

• Global Surface Water Dataset

Ob River, Western Russia
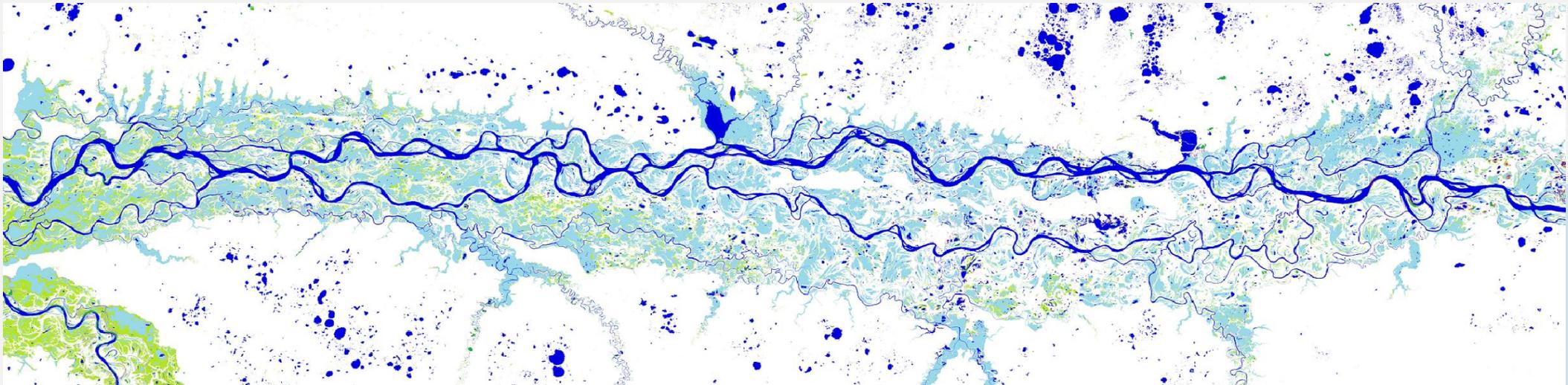
Jean-Francois Pekel, Andrew Cottam, Noel Gorelick, Alan S. Belward, High-resolution mapping of global surface water and its long-term changes. *Nature* 540, 418-422 (2016).

▶ BIOPAMA Project

- €20 million project with IUCN (ends in 2023)

- Biodiversity and Protected Area Management

- Regional knowledge centres in Nairobi, Dakar, Yaoundé, Bridgetown, Apia

- Improve protected area management effectiveness

▶ JRC Role

- Knowledge products and tools
- Policy-relevant indicators

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▶ IUCN Role

- Development of regional resource hubs
- Funded activities in protected areas

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- *Map of BIOPAMA Regional Observatories*

▶ **Importance of primary biodiversity data**

- 8 areas where primary biodiversity data are used

- Example analyses and tools are taken from broader JRC work

- BID data will be used as it is published (either as occurrence data or Species Distribution Models) and RO are fully functional

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▶ **Valuation of biodiversity**

- The assessment and quantification of the biodiversity value for specific geographic regions or places (e.g. protected areas)
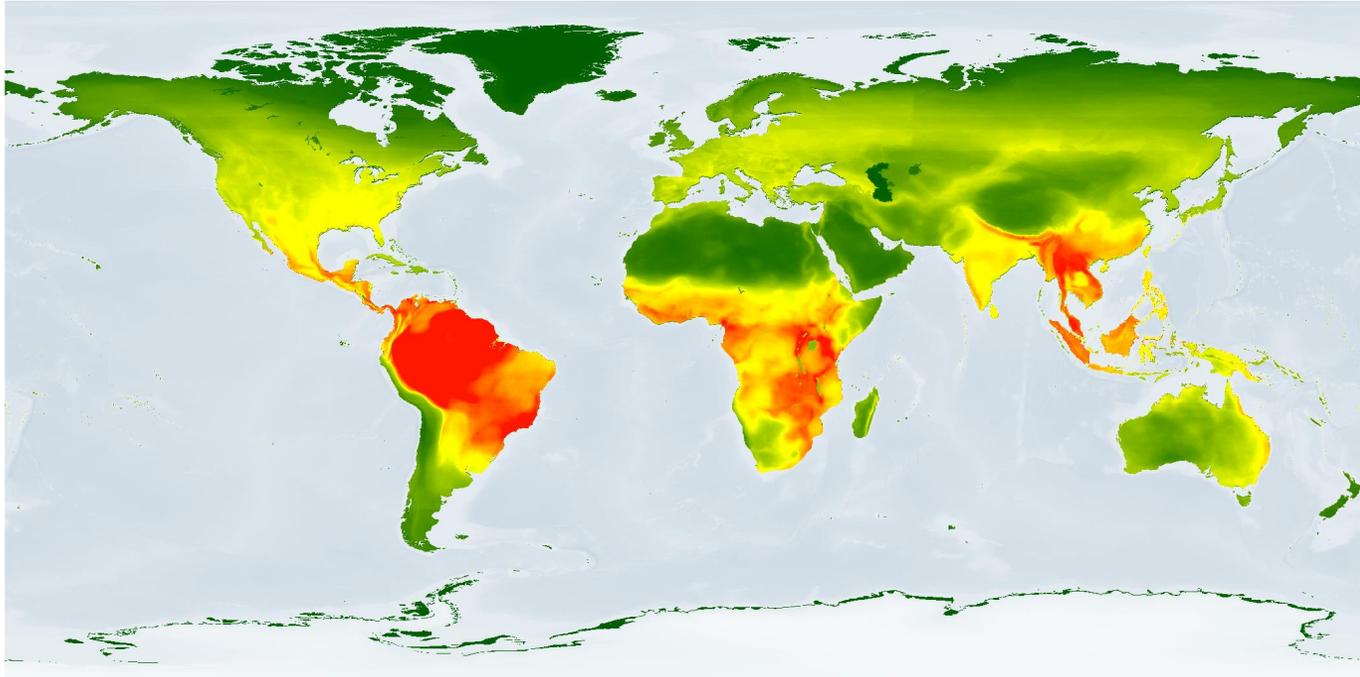
	All Species			Threatened Species		
	x	✓	TOTAL	x	✓	TOTAL
American Samoa	21	4	25	4		4
Cook Islands	8	13	21	4		4
Fiji	83	2	85	27		27
French Polynesia	7	10	17	1		1
Guam	5	2	7	1		1
Kiribati	7	2	9	2		2
Marshall Islands	11	3	14	2		2
Micronesia (Federated States of)	36	1	37	14		14
Nauru	3		3	1		1
New Caledonia	13	11	24		1	1
Niue	9	2	11	2		2
Northern Mariana Islands	8	2	10	3		3
Palau	22	7	29	6		6
Papua New Guinea	479	6	485	83		83
Pitcairn	2	6	8			
Samoa	31	3	34	8		8
Solomon Islands	162	8	170	46	2	48
Timor-Leste	1		1	1		1
Tokelau	2		2			
Tonga	29	2	31	6		6
Tuvalu	4		4			
Vanuatu	57	8	65	16	1	17
Wallis and Futuna	13	1	14	3		3
Grand Total	**1013**	**93**	**1106**	**230**	**4**	**234**

- *Examples*: Species inventories, richness maps and gap analyses

PROJECT | IN PROGRESS

Establishing Metadata of Biodiversity Data Generated from Ramsar Sites in Tanzania

📅 30 Oct 2017 - 31 Mar 2019   € 18,500

ABOUT   DATASETS

Panthera pardus subsp. pardus, Tanzania, United Republic of. Photo by Allan Hopkins licensed under CC BY-NC-ND 2.0

Monitoring of biodiversity

- The monitoring and surveillance of species and habitats to detect changes to the populations, ranges or statuses.

- *Example*: SMART (Spatial Monitoring and Reporting Tool)

PROJECT | IN PROGRESS

Tracking the red lionfish invasion in Barbados

📅 1 May 2017 - 1 Dec 2018   € 5,000

ABOUT   NEWS & EVENTS   DATASETS

Lionfish (*Pterois volitans*), Curaçao. Photo by Laszlo Ilyes via Flickr, licensed under CC BY 2.0.

► **Systematic conservation planning**

- The design of protected areas networks and strategies to maximize the protection of biodiversity.
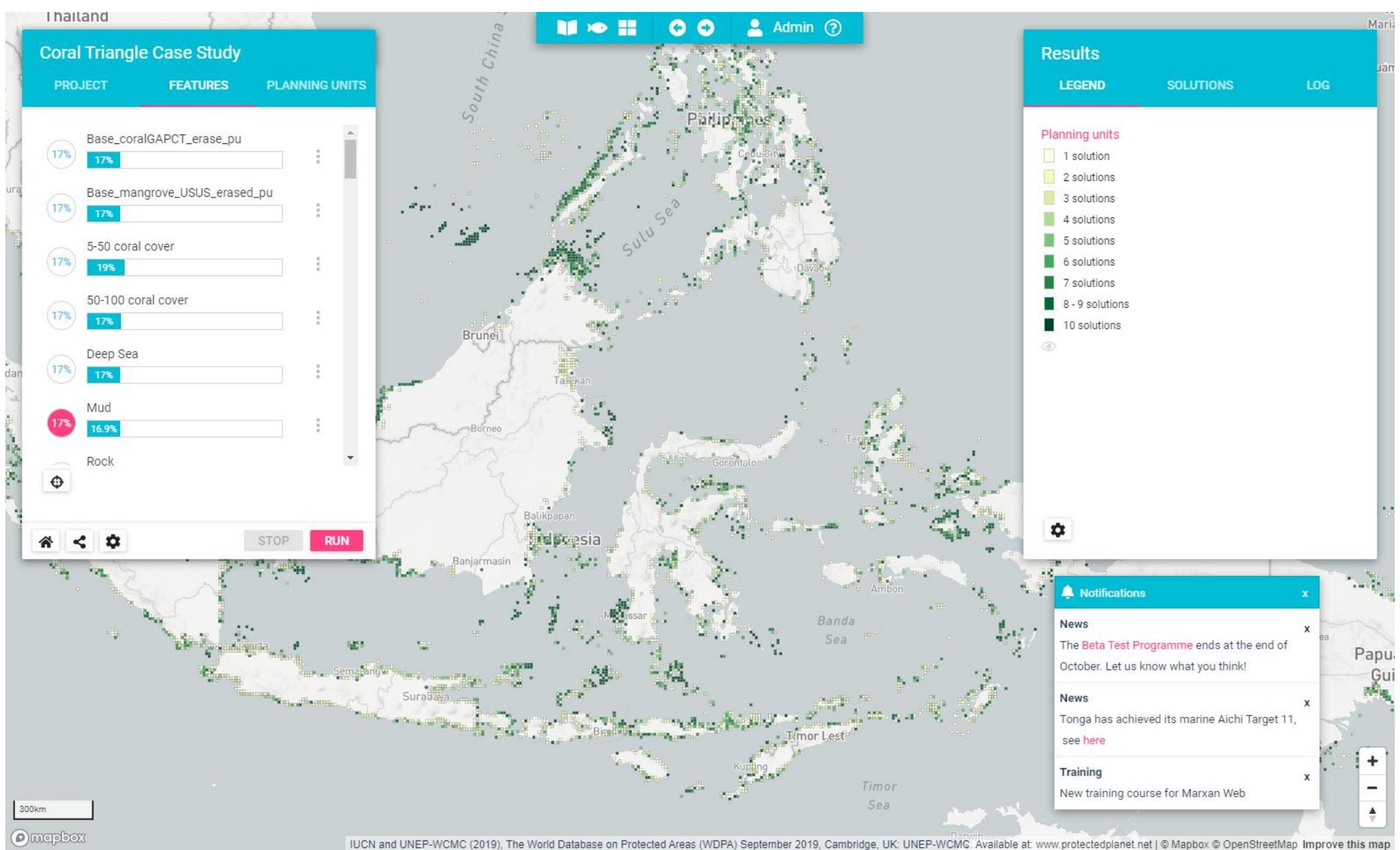
- *Example*: Marxan Web

Capacity building and data mobilization for conservation and decision-making in the South Pacific

📅 1 Jul 2017 - 1 Oct 2018   € 61,435

ABOUT   NEWS & EVENTS   DATASETS

Spotted porcelain crab (*Neopetrolisthes maculatus*), Solomon Island by Mark Rosenstein via iNaturalist, licensed under CC BY-NC-SA 4.0.

▶ **Ecosystem service valuation**

- Many ecosystem services rely on biodiversity and therefore valuations depend on biodiversity data, e.g. tourism, fisheries management.

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- *Example*: Tourism potential based on species charisma

Willemen L, Cottam AJ, Drakou EG, Burgess ND (2015) Using Social Media to Measure the Contribution of Red List Species to the Nature-Based Tourism Potential of African Protected Areas. PLoS ONE 10(6): e0129785.

PROJECT | IN PROGRESS

Extension and management of the reference collections of bee pollinators in West Africa

📅 1 Oct 2017 - 31 Mar 2019   € 20,000

ABOUT   DATASETS

Apis mellifera scutellata, Burkina Faso. Photo by ONG OeBenin licensed under CC BY-NC 4.0

▶ **Protected Area Management**

- Local-scale biodiversity data to support the protection and preservation of species and habitats through conservation management.

- *Example*: Integrated Management Effectiveness Tool

PROJECT | IN PROGRESS

Improving natural resources management in Belize by mobilizing biodiversity data

📅 1 Jun 2017 - 1 Nov 2018   € 54,101

ABOUT   NEWS & EVENTS   DATASETS

Vermillion flycatcher (*Pyrocephalus rubinus*) in pine-oak savannah, Belize. Photo by Feroze Omardeen via Flickr, licensed under CC BY 2.0.

▶ **Environmental Impact Assessment**

- Multi-scale biodiversity data to support the assessment of the impact on biodiversity through environmental policies or local planning decisions.

▶ **Policy Support for MEAs, SDGs**

- Many of the MEAs have statutory reporting obligations that require a range of biodiversity data, including CBD (NBSAPs).
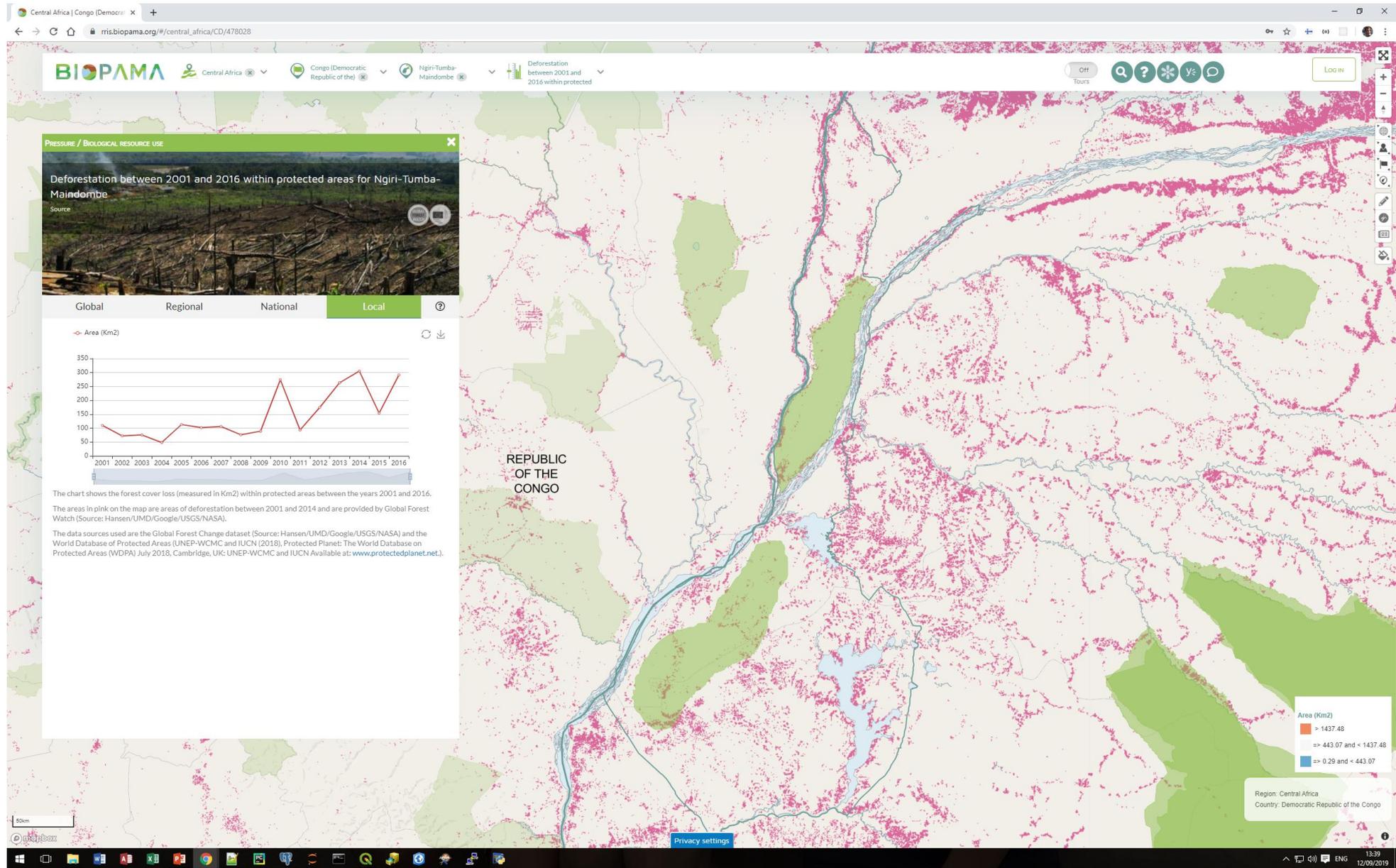
- *Example*: BIOPAMA Reference Information System

▶ Research

- Applied scientific research

- *Examples*: Knowledge gaps in flowering plants in Africa

Stropp, J. , Ladle, R. J., M. Malhado, A. C., Hortal, J. , Gaffuri, J. , H. Temperley, W. , Olav Skøien, J. and Mayaux, P. (2016), Mapping ignorance: 300 years of collecting flowering plants in Africa. Global Ecol. Biogeogr., 25: 1085-1096

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• *Example*: Research into survey effort

Current links

- Staff in BIOPAMA Regional Observatories have benefitted from BID Capacity development:
    - Data publishing and hosting an Integrated Publishing Toolkit
    - Data Use for Decision Making
- SPREP are a regional observatory and have a number of successful BID projects

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▶ Future links

- Regional Observatories to develop capacity in offering value-added services, e.g. Species Distribution Modelling

- BIOPAMA tools to use GBIF/BID data directly, e.g. Marxan Web

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www.biopama.org

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