



“Biodiversity and Protected Areas Management” (BIOPAMA)

Nicolas Hoepffner

Institute for Environment & Sustainability
EC - Joint Research Centre



Outline

- 1. Presentation of the JRC*
- 2. Introduction to BIOPAMA*
- 3. JRC contribution to BIOPAMA*
 - learning from the past
 - *the DOPA system*
 - *A look at the toolbox (thematic applications)*
 - *the eStation*
- 4. BIOPAMA next steps*

1. JRC presentation



Joint Research Centre

The European Commission's in-house science service

www.jrc.ec.europa.eu



*Serving society
Stimulating
innovation
Supporting
legislation*



Who are we and what do we do?

JRC is the European Commission's in-house science service. It provides the science for policy decisions, with a view to ensuring that the EU achieves its Europe 2020 goals for a productive economy as well as a safe, secure and sustainable future.

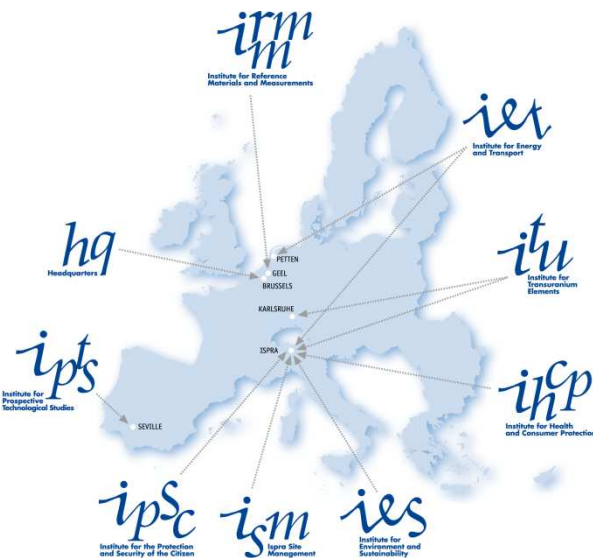
The JRC plays a key role in the European Research Area and reinforces its multi-disciplinarity by networking extensively with leading scientific organisations in the Member States, Associated Countries and worldwide.

1. JRC presentation



Established 1957

7 institutes in 5 countries: Italy, Belgium, Germany, The Netherlands, Spain
2,845 permanent and temporary staff in 2010
1,398 scientific publications in 2010
125 instances of support to the EU policy-maker annually
Budget: €356 million annually, plus €62 million earned income



Where you can find us

Corporate Services – Brussels

IRMM – Geel, Belgium

Institute for Reference Materials and Measurements

ITU – Karlsruhe, Germany and Ispra, Italy

Institute for Transuranium Elements

IE – Petten, The Netherlands and Ispra, Italy

Institute for Energy

IPSC – Ispra, Italy

Institute for the Protection and Security of the Citizen

IES – Ispra, Italy

Institute for Environment and Sustainability

IHCP – Ispra, Italy

Institute for Health and Consumer Protection

IPTS – Seville, Spain

Institute for Prospective Technological Studies



Main competence areas

- *Energy*
- *Clean transport*
- *Environment & Climate change*
- *Agriculture & Food security*
- *Health & Consumer protection*
- *Safety and security, including nuclear*
- *Information and communication technology*





BIOPAMA: General Information

Funded (10th EDF) under EC/ Intra ACP Envelope for Biodiversity; thus the geographical focus limited to ACP Countries.

4-year Programme (2011-2015) recognizing Protected Areas as a key tool for in-situ conservation and for maintaining ecosystem services.

It also recognizes challenges of biodiversity conservation in ACP countries.





Rational behind BIOPAMA

CBD Strategic Plan 2011-2020 - Goal C: To improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity

Target 11

By 2020, at least 17% of terrestrial and inland water, and 10% of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscapes and seascapes.

(Also Targets 1, 2, 5, 6, 9, 12, 14, 15, 16, 17, 19)





General Objective: *To improve long-term conservation of biodiversity in ACP regions and reduce the poverty of populations surrounding PAs.*

Specific objective:

*- Enhance existing institutions and networks, **based on the best available science and knowledge, by building their capacity** to strengthen policy and to implement well informed decisions on biodiversity conservation, protected areas management and **Access and Benefit Sharing.***





Structure of the Project

Two main components:

1. *The Protected Areas Component* (support CBD Targets 1, 2, 11, 14, 17, 19) :

Result 1 - The effective planning/management of PAs is improved by using the best available scientific and policy information (JRC).

Result 2 – Establishing a “Centre for PAs & Biodiversity” (Observatory) in each region and developing capacity building programmes (IUCN).

2. *Access and Benefit Sharing* (GIZ) support CBD Target 16





BIOPAMA main deliverables

1. Build a reliable reference information system of Protected Areas including information on:
 - biodiversity value and ecosystems behaviour
 - pressures and threats to species and PAs
 - ecosystem services provided by PAs to local population.
2. Strengthen institutions and networks by building their capacity to implement well informed decisions on biodiversity conservation
3. Creation of a Regional “Observatory for Protected Areas and Biodiversity” in each of the 3 regions (Africa, Caribbean, Pacific).





JRC contribution to BIOPAMA - Result 1 of the Protected Areas Component

Specific objective

*“Provide the right **Information**, in the right **Way**, to the right **People** with the right **Tools**. ”*

This also implies that we need to

“Collect the right information from the right people with the right tools. ”

Development of Data and Information Reference System for the Regional Observatories.

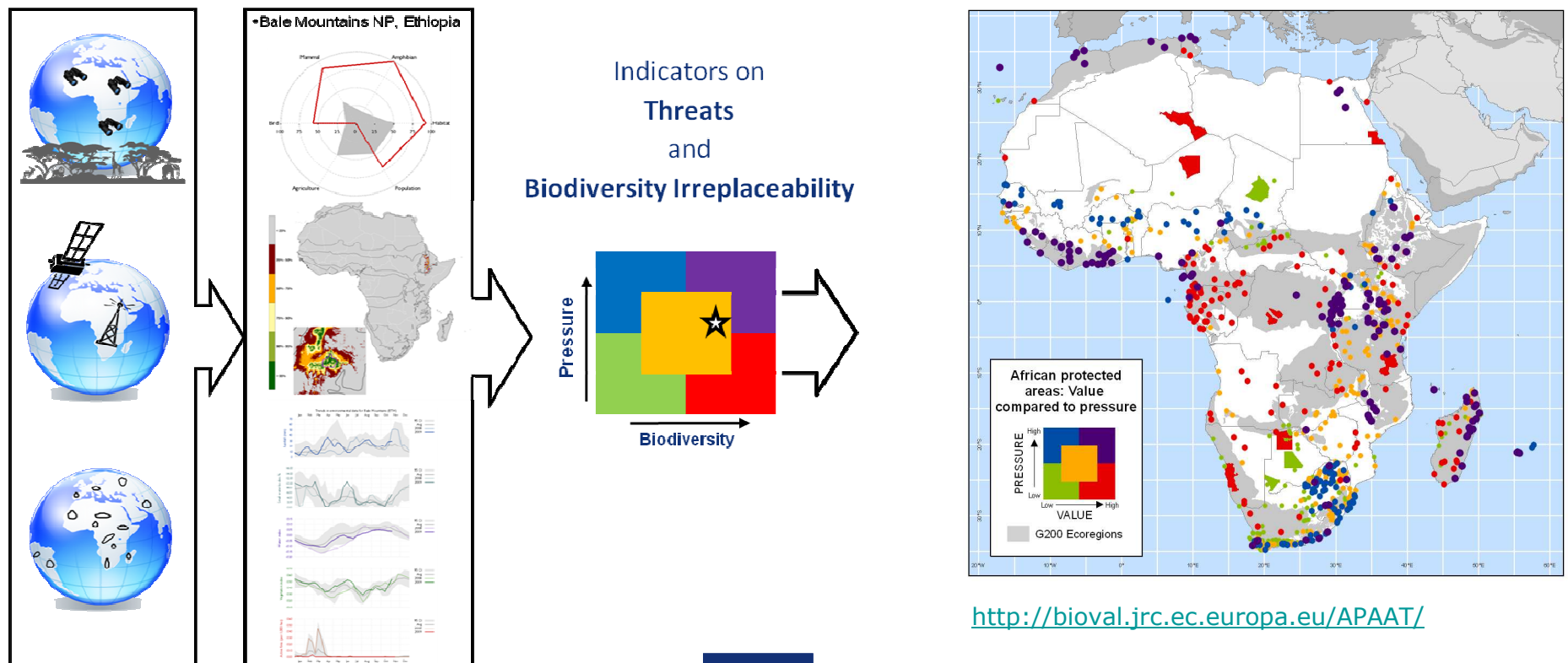


3. JRC in BIOPAMA
- previous achievements



African Protected Areas Assessment Tool (APAAT)

2007 JRC developed a tool to assess and prioritize 741 Protected Areas in Africa according to biodiversity values and threats, using objective, continent-wide datasets



<http://bioval.jrc.ec.europa.eu/APAAT/>

3. JRC in BIOPAMA
- previous achievements



Lessons learnt from the APAAT experience

- 1) We need to **go beyond the boundaries** of Protected Areas (connectivity, fragmentation, new PAs are major issues)
- 2) **Policy issues** become more and more global and there is a **need for accessible global reference** data and information systems
- 3) **Validation** of information requires better means for capturing ground truth
- 4) Increase **reusability** of data, models and IT infrastructure for improved communication, validation and reduced maintenance costs
- 5) **Repeated assessments** possible only with reference material but also with automated data & models sharing



3. JRC in BIOPAMA
- DOPA system



Towards a Digital Observatory for Protected Areas (DOPA)

2009 EuroGEOSS project, includes the development of interoperable web based services for biodiversity



*A set of Web Services
to **Assess**,
Monitor,
and **Forecast**
Biodiversity
at the Global Scale*

<http://dopa.jrc.ec.europa.eu/>

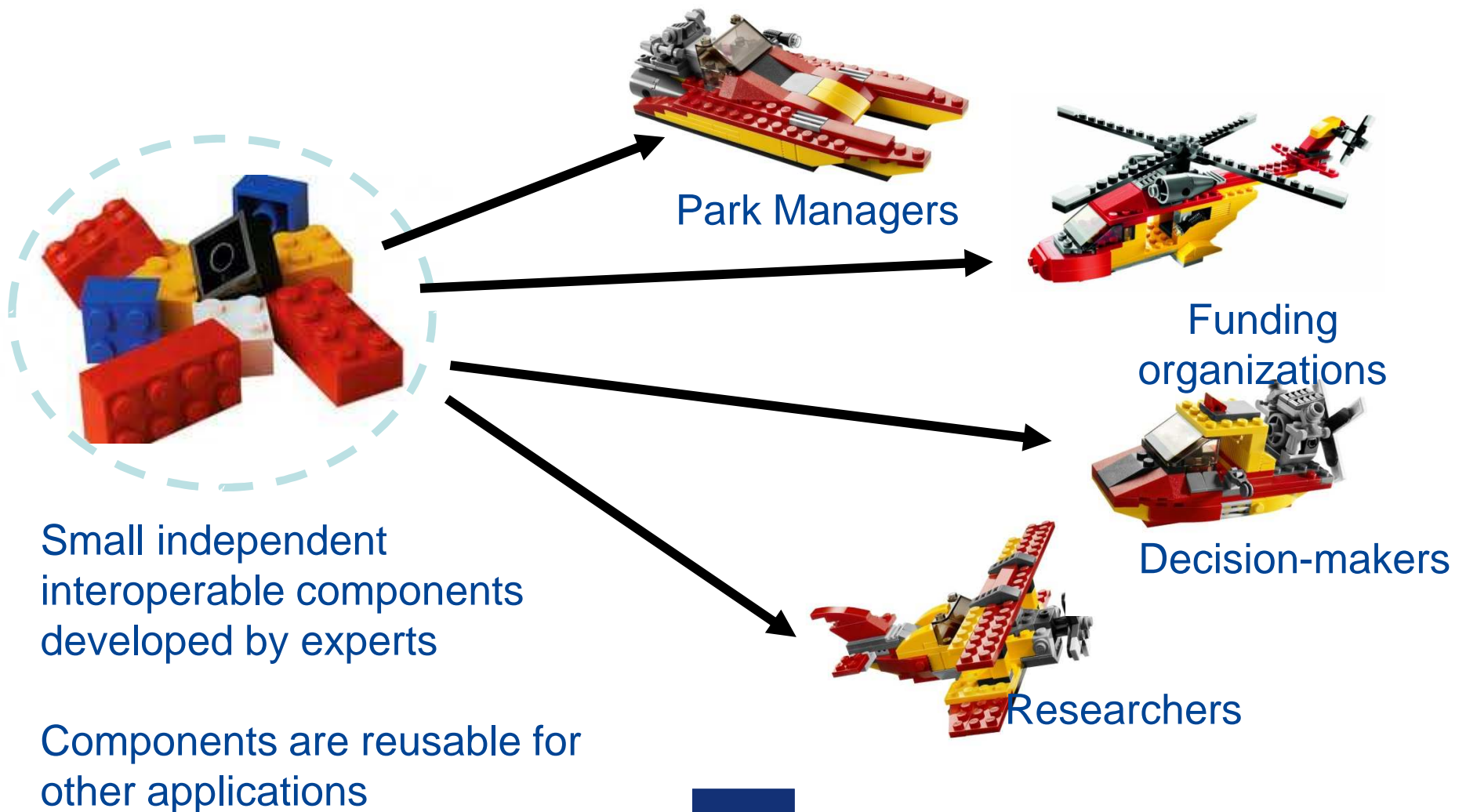


3. JRC in BIOPAMA

- DOPA system



A set of tools rather than one single tool

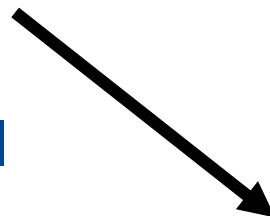


3. JRC in BIOPAMA

- DOPA system



DOPA = Need for orchestration!!!



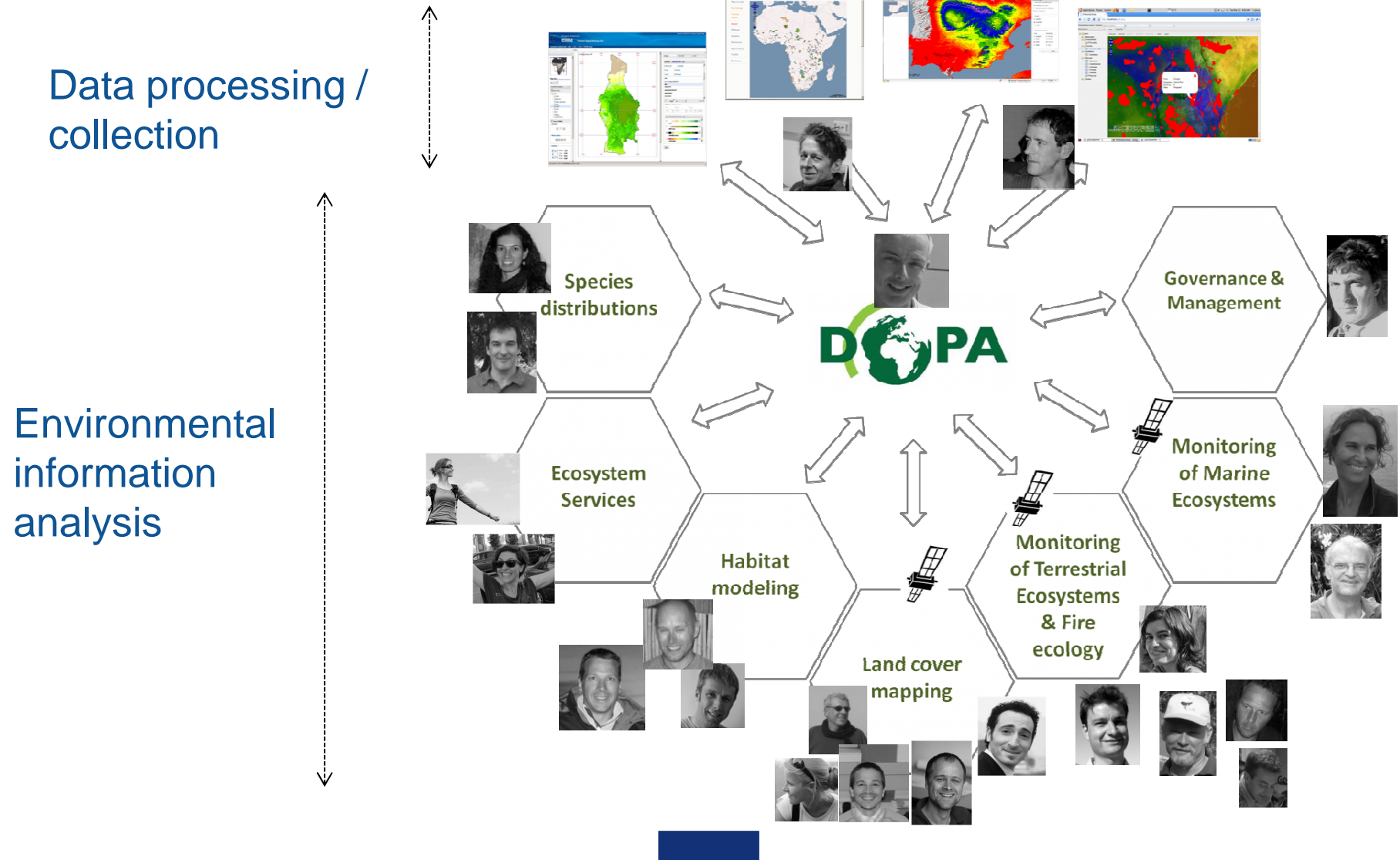
Optimize the number of components, such that the final products

- are working
- are useful
- are realistic



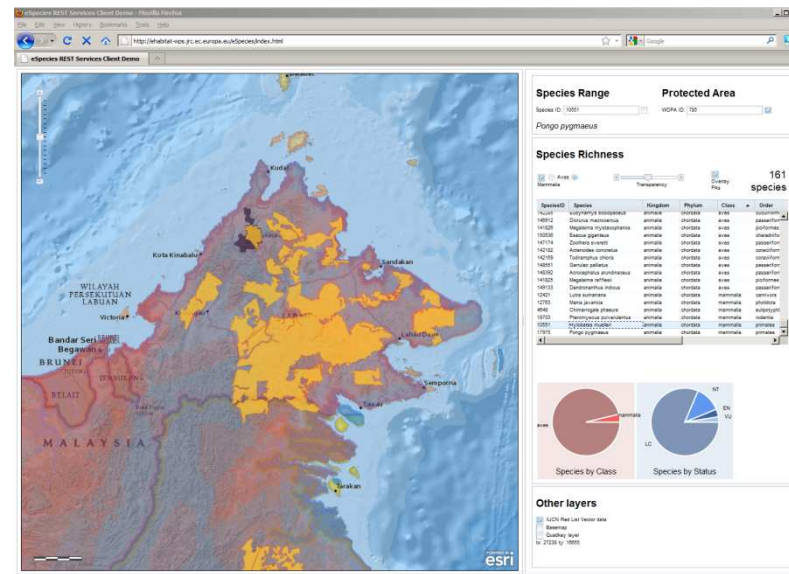
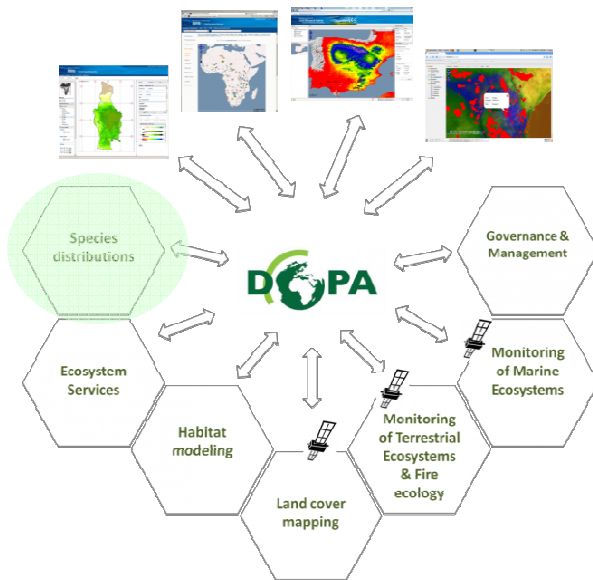
3. JRC in BIOPAMA

- DOPA system

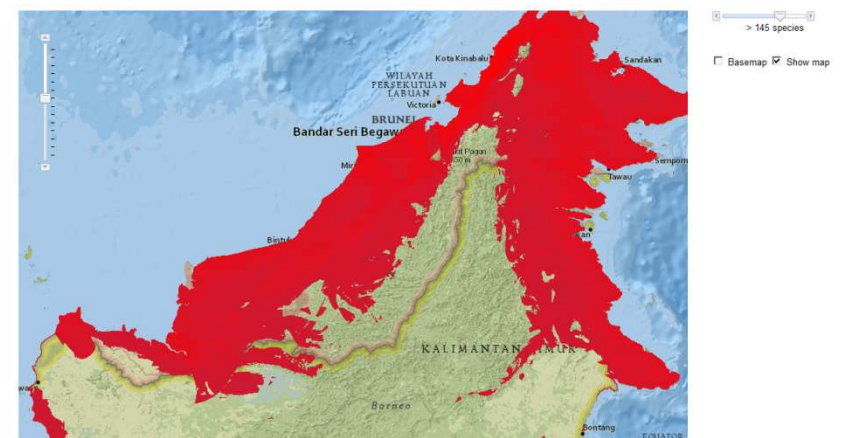


3. JRC in BIOPAMA

- applications



Species Richness Visualisation



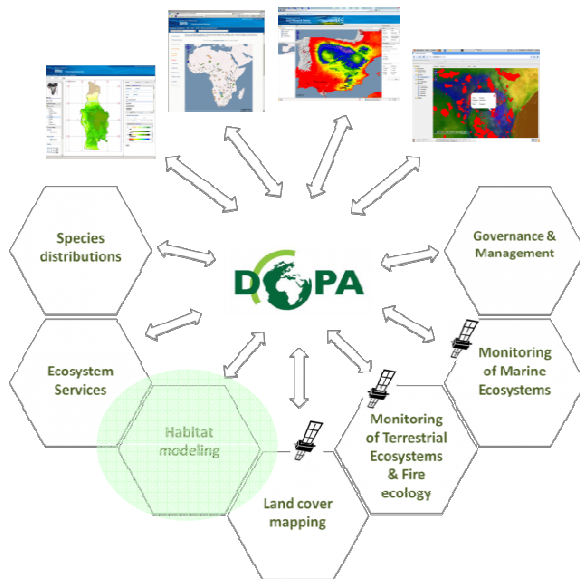
eSpecies (CBD Target 9, 12)

Web services for analyzing species data (ranges, occurrences, ...)

Species data on a 1 km global grid

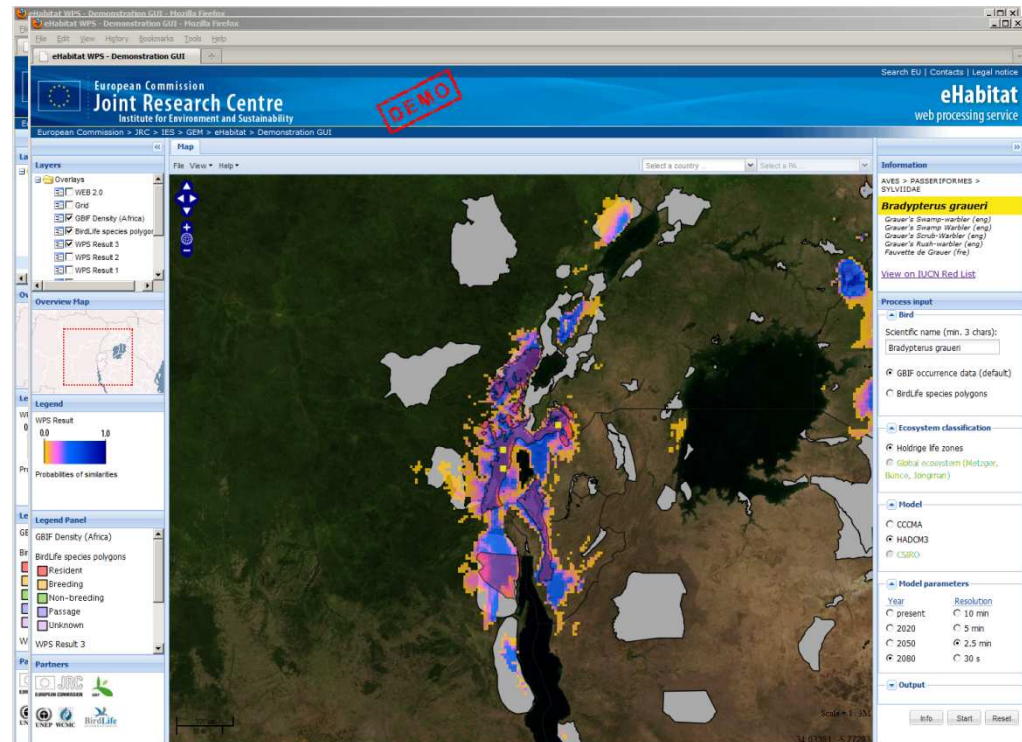
3. JRC in BIOPAMA

- applications



eHabitat (CBD Target 5)

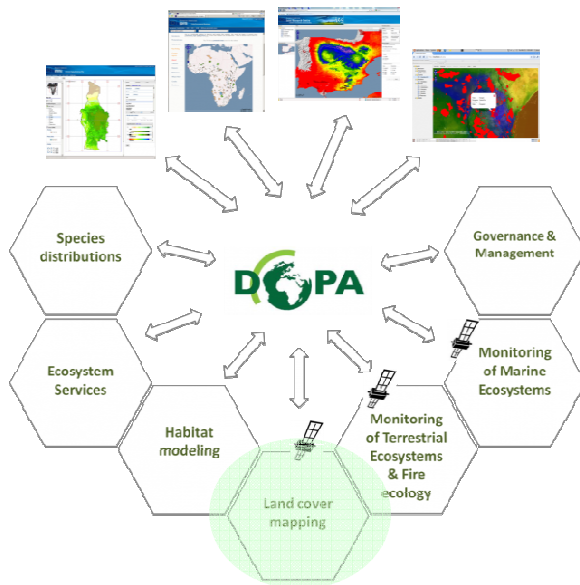
A web service for identifying unique habitats, ecological forecasting, detecting seasonal changes, ecological niche modeling, assessing ecological connectivity, ...



<http://ehabitat.jrc.ec.europa.eu/>

3. JRC in BIOPAMA

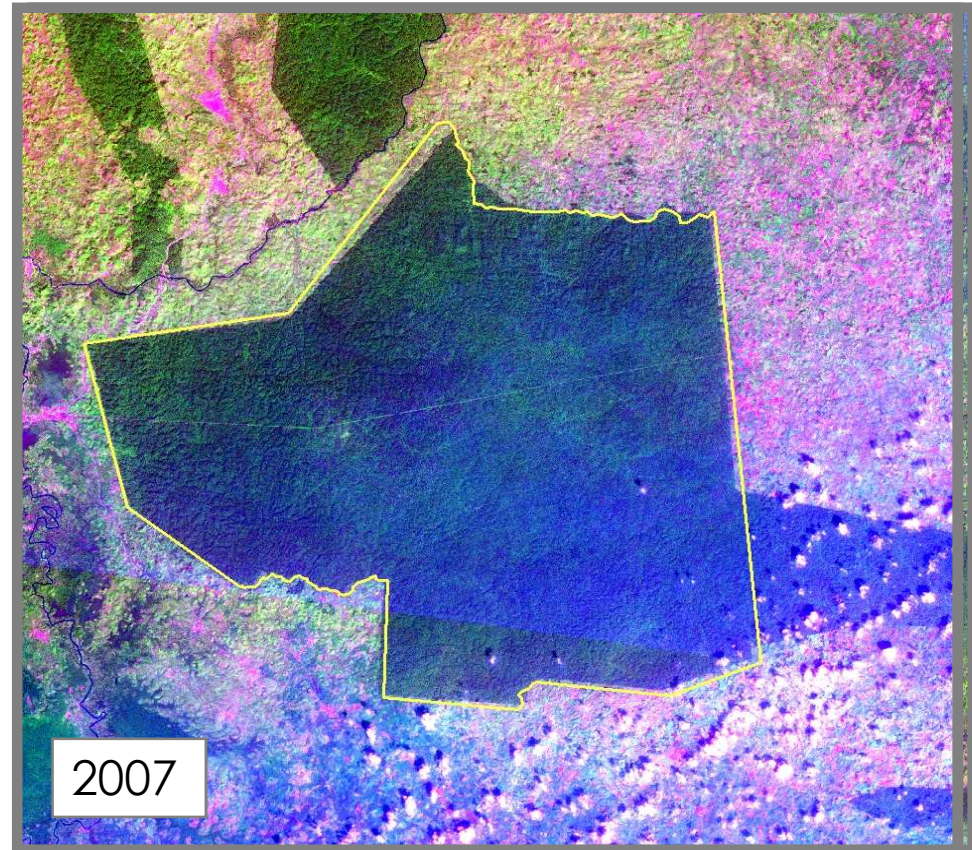
- applications



Land Cover Change (CBD Target 5, 7)

Data & web based tools for facilitating the detection of changes in land cover around and inside protected areas

Ghana – Ankasa Forest Reserve



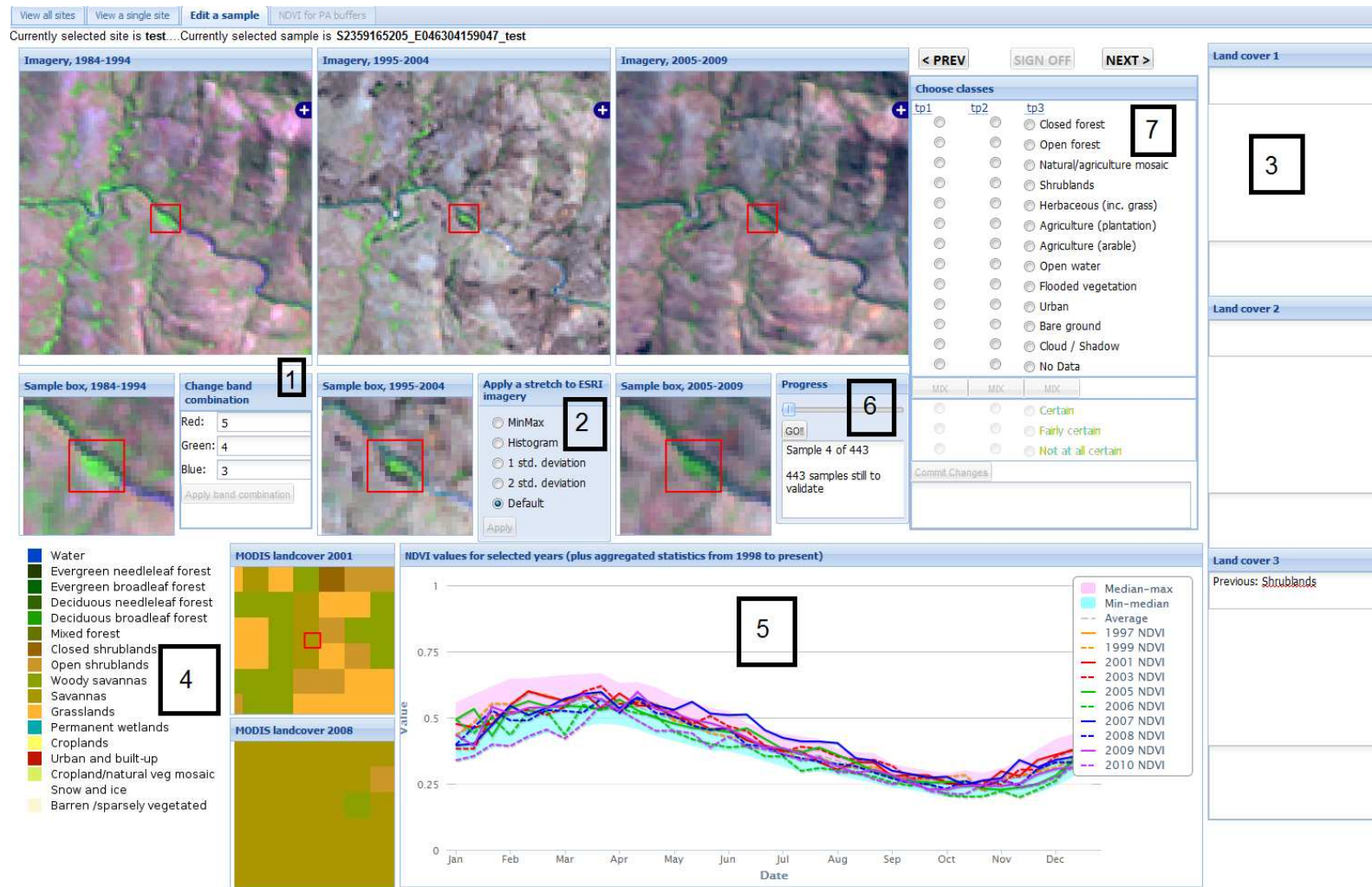
<http://landcover-change.jrc.ec.europa.eu/>

3. JRC in BIOPAMA

- applications

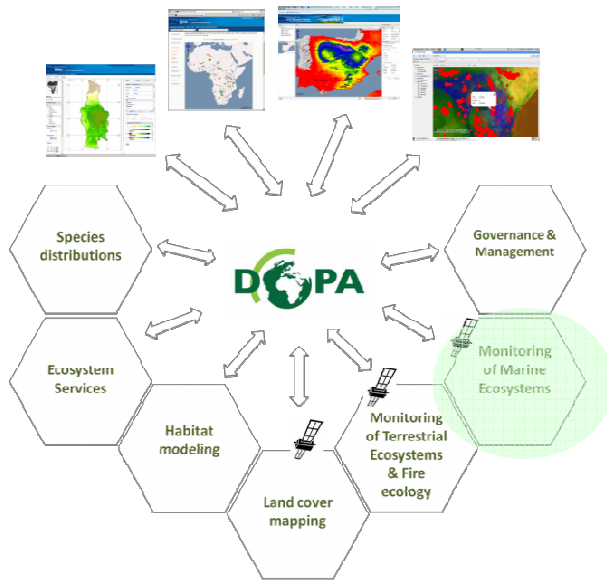


Land Cover Change Web Clients for detecting changes



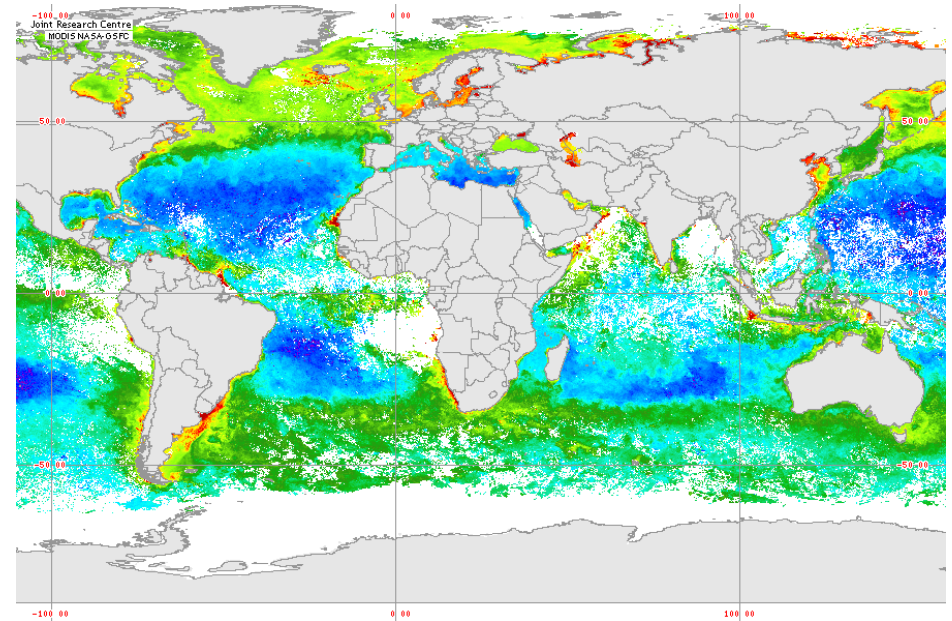
3. JRC in BIOPAMA

- applications



Marine / Coastal Information System (CBD Target 6, 14)

provide the Users community with an appropriate set of bio-physical information, of importance to conduct water quality assessment and resource monitoring in the coastal and marine waters.



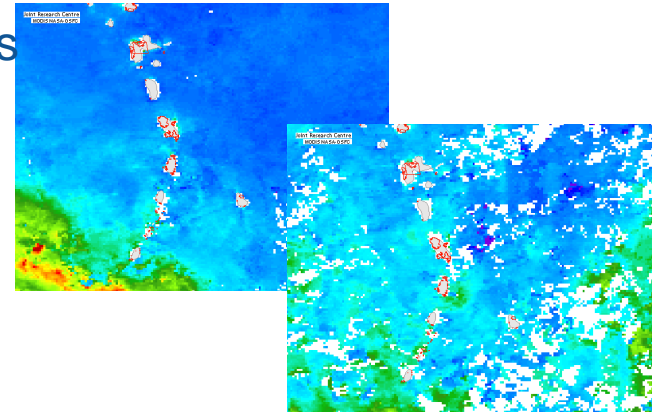
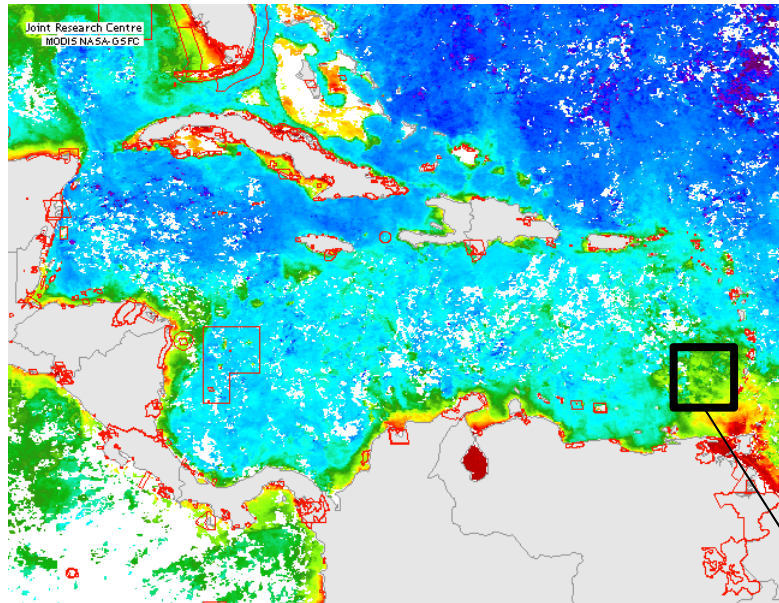
<http://amis.jrc.ec.europa.eu/>

3. JRC in BIOPAMA

- applications



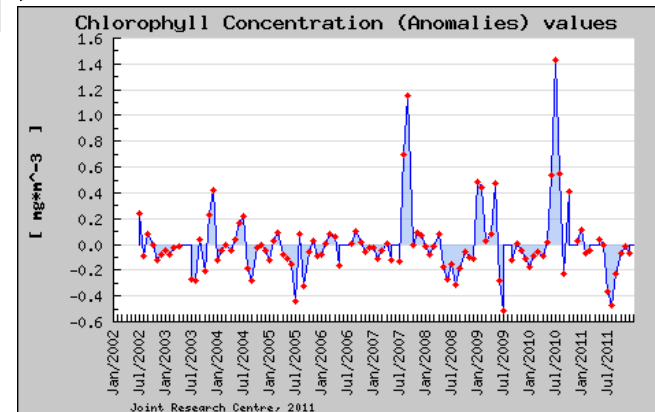
Caribbean Sea chlorophyll biomass and MPAs



Change in water transparency around Lesser Antilles

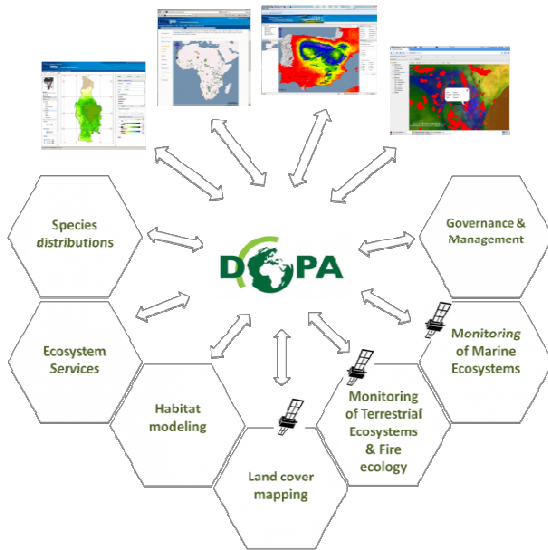
variables available

Sea surface temperature
phytoplankton biomass and primary production
light attenuation coefficient (water transparency)



3. JRC in BIOPAMA

- applications



DOPA Characteristics Summary

Strengths

- Global information system set to work at 1 km resolution (2 to 4 km in marine environment)
- fully scalable (can be adapted to local / regional needs)
- based on partnerships (targeted services and indicators)
- DOPA is free (tools based on open source software)

Weaknesses

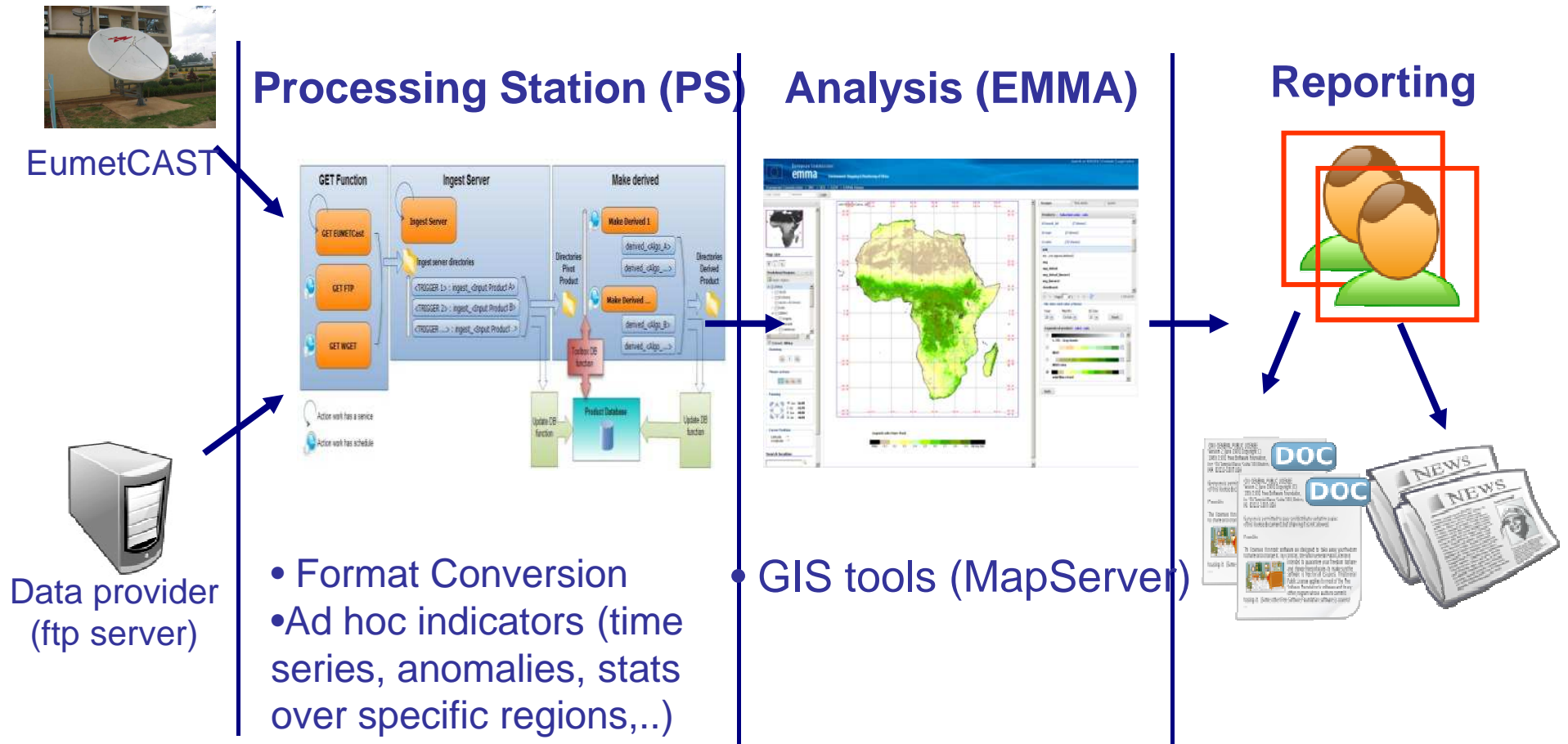
- IT dependent (solution through e-station , *next slide*)
- Partnership (require constant reliability and full commitment)

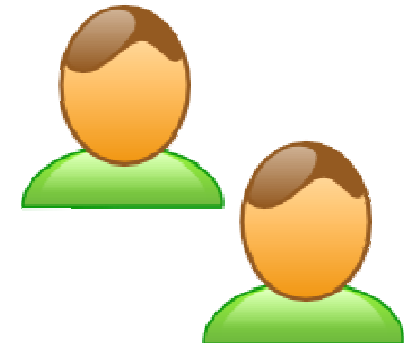
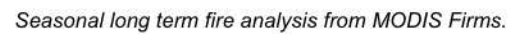
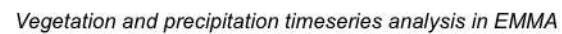
3. JRC in BIOPAMA

- e-station



eStation: a full processing/analysis/reporting chain







Going beyond a pure scientific & technical exercise, BIOPAMA links with the communities!

- Collect data on **Management & Governance** from institutions & local actors
- Further collect **feedback from the ground** (species observations, threats and pressures, land cover/marine change, management & governance, economics, PAs and local ecosystem services...)
- Engage with more stakeholders to access larger communities of **end-users**
- Increase the community of **contributors, partners and end- users**
- Where necessary, develop the **capacity building** activities targeting the potential end-users and contributors





Regional Observatories for Protected Areas and Biodiversity in each region involved (Africa, Caribbean, Pacific)

1. Adapting the DOPA to the regional needs and available information
2. developing and progressively implementing Capacity Building Programmes,
3. Coordinating the support (experts, infrastructure) to national services and regional organizations,
4. facilitating networking of experts and institutions,
5. developing and implementing a Communication and Awareness Raising Programme.





2012 Regional Workshops

Target audience

regional entities, national environmental services, PA managers, PowPA focal points...

Goals

- Identify users and user-needs for PA Information System (based on DOPA)*
- present the current information reference system (in detail)*
- present the feedback mechanism for system improvement*
- initiate data/information collection on local ecosystem services management*



Thank you.

nicolas.hoepffner@jrc.ec.europa.eu

With Leigh Gurney, Gregoire Dubois, Michael Schultz, Andrew Cottam, Stephen Peedell, Andreas Brink, Juliana Stropp, Philippe Mayaux, Paolo Roggeri, Evangelia Drakou, Ilaria Palumbo, Marco Clerici, Jean-Francois Pekar, Jean-Marie Gregoire, William Temperley, Dario Simonetti, Jurriaan Van' t Klooster, Wieteke Willemen, Dorit Gross, Andrea Marelli, Bart Verbeek, ...

