

BIOPAMA



Biodiversity and Protected Areas Management Programme

Partners in BIOPAMA



Joint Research Centre • Sito di Ispra



In a nutshell

BIOPAMA

- Will improve access to and availability of information on biodiversity and socioeconomic issues in order to improve decisions for protected area management
- Is funded under the EC/ Intra ACP Envelope for Biodiversity
- Thus the geographical focus is on ACP (Africa, Caribbean, Pacific) Countries
- Is jointly implemented by IUCN, EC-JRC and the ABS Initiative managed by GIZ



Objectives

General Objective

To improve long-term conservation of biodiversity in ACP regions and reduce the poverty of populations surrounding protected areas.

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**.

Rationale

- ACP countries host a huge share of the planet's **biodiversity**
- The programme recognizes **well-managed protected areas (PAs)** as a key tool for **in-situ conservation**, for **maintaining ecosystem services**, and for helping **adaptation to climate change**
- Recognizes challenges of biodiversity conservation in ACP countries
- **Biodiversity loss** in ACP countries continues **in spite of national efforts to establish PAs**

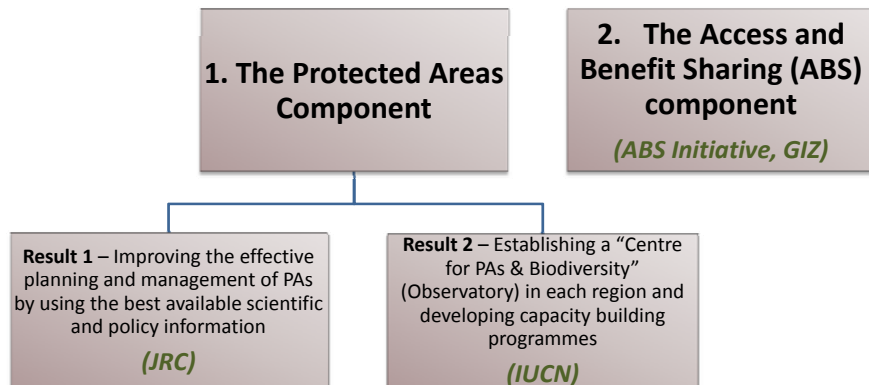


Key problems

- **Limited** human and institutional **capacity**
- **Lack of coordination**

Structure of the programme

Two components



Key principles of implementation

- Action oriented
- Capacity building (CB) guided by general principles but tailored to the specific demands of each region and implemented at different levels
- Coherence of actions at global and regional levels and across key partners
- Create political buy-in by working with regional institutions
 - **Africa:** African Union, RAPAC, OFAC, COMIFAC, SADC
 - **Caribbean:** CARICOM, CARIFORUM, OECS, UNEP-CEP
 - **Pacific:** SPREP

Key principles of implementation

- Close inter-institutional coordination
- Synergies with other projects and initiatives are welcomed
- CB activities should increase the understanding and recognition of the values of protected areas
- Synergies at national/local levels

Beneficiaries

Direct beneficiaries

- Regional and national institutions in charge of PAs planning and management
- PA managers

Indirect beneficiaries

- Training Centres and national and regional schools, colleges and universities providing training to PA managers



Expected outcomes

1) Better policy and decision making

- By making use of available science and knowledge centred in regional observatories

2) Improved technical and institutional approaches

- To better plan and manage PAs through capacity building
- This will enhance their contribution to biodiversity conservation and sustainable livelihoods



Expected outcomes

3) Enhanced regional cooperation

- Building **political support for biodiversity conservation** and to achieve **greater coherence** for implementing/negotiating Multilateral Environmental Agreements (MEAs)
- Building up **regional networks of experts** and enhanced networking to reduce external dependency



BIOPAMA in practice: The Regional Observatories (ROs)

- Information centres
- Dedicated structures hosted in existing institutions
- Technical nodes

Objectives

Building awareness of regional political institutions to strengthen biodiversity conservation and PA management through

- Facilitating data access
- Developing knowledge products



BIOPAMA in practice: The Regional Observatories (ROs)

Additional roles

- **Reality-check assessment:** Balancing political expectations and challenges on the ground
- **Practical advice:** regarding challenges in conservation and PA management
- Effective implementation of the **Regional Capacity Building Programme**
- **Regional experts:** for membership in existing international expert networks



BIOPAMA

Thanks for your
Attention



Developing capacity for a Protected Planet

www.iucn.org/biopama
biopama@iucn.org

ABS component of BIOPAMA

BIOPAMA Regional Workshop for the Pacific

4-6 February 2013, Novotel, Suva, Fiji

Dr. Andreas Drews, Manager

funded by

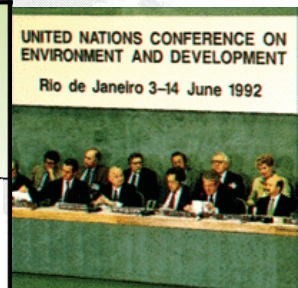


implemented by



Convention on Biological Diversity, Article 1

1) Conservation of biological diversity	2) Sustainable use of its components	3) Fair and equitable sharing of benefits from the utilization of genetic resources
		via
Appropriate access to genetic resources	Appropriate transfer of technology and know how	Appropriate funding: <ul style="list-style-type: none"> • Up-front payments • Mile stone payments • Licence fees / royalties



For the first time integration of biodiversity conservation and sustainable development in one UN-Convention

The ABS Capacity Development Initiative



BIOPAMA

Developing capacity BIOPAMA - Biodiversity and Protected Areas Management

- **20 Mio Euro under the 10th European Development Fund**
- **Launched in 2011 – implementation 2012-2015**
- **2 components:**
 - **Protected Areas component**
 - **Budget : 15 Mio Euro**
 - **Implementation: Joint Research Centre of the EC (JRC) and IUCN**
 - **Program Offices in Nairobi (Kenya), at CATIE (Costa Rica) and at SPREP (Samoa)**
 - **ABS component**
 - **Budget: 5 Mio Euro as core contribution to the ABS Capacity Development Initiative**
 - **Implementation by GIZ recognizing the established governance and implementation structure of the ABS Initiative**

The ABS Capacity Development Initiative



BIOPAMA

Developing capacity BIOPAMA - Biodiversity and Protected Areas Management

Intended results:

- **Protected Areas component**
 - **Improvement of PA planning and management** by the use of scientific and policy information for sustaining ecosystem services and reducing poverty of local populations
 - Setup of a **“Centre for Protected Areas and Biodiversity” (Observatory)** in each of the three regions
- **ABS Component**
 - Improvement of capacities of stakeholders to participate in **developing the international ABS regime**
 - Improvement of capacities to develop and improve **ABS conditions at national level**

How the “Initiative” took off

2005: WG-ABS 3, Bangkok



2006: Launch of the **Dutch-German ABS Capacity Development Initiative for Africa** at COP 8 in Curitiba

Today's Donors:



Partners:



Governance of the Initiative

Hosted by the **BMZ**

3 Regional Steering Committees (donors, partners and stakeholder representatives)

- Agree on yearly work plan(s) and budget(s) (prepared by the Secretariat)
- Appoint stakeholder representatives
- Endorse the financial and narrative yearly report of the Secretariat

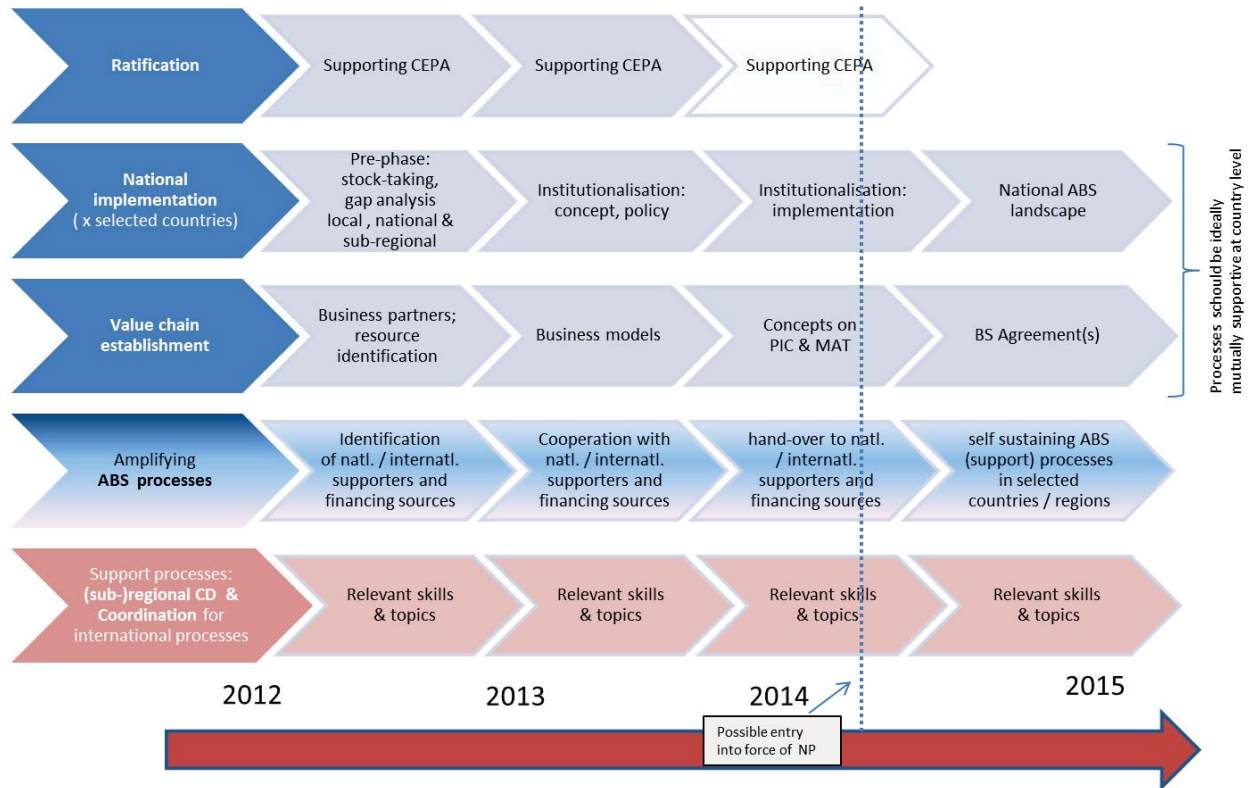


Secretariat of the Initiative (commissioned by BMZ to GTZ/GIZ)

- Responsible for the implementation of the yearly work plan(s)
- Prepare meetings and decision making of the Steering Committees



Core processes for ABS capacity development 2012-2015



Access and Benefit Sharing

The ABS Capacity Development Initiative

ABS Cap Dev levels "the elevator principle"

Level of intervention	Preparation of national ABS authority	Other stakeholders	Main instruments
UN level	International negotiations	ABS authorities of other countries	<ul style="list-style-type: none"> ⑥ Stakeholder inputs on ABS to relevant meetings ⑥ Technical papers and studies ⑦ CEPA for ABS
(Sub-)regional level	Harmonization of legislation	ABS authorities of other countries	<ul style="list-style-type: none"> ① Multistakeholder Workshops ⑤ Information exchange / CHM ② Issue based trainings
	Regional cooperation	Academia Private Sector Communities	<ul style="list-style-type: none"> ⑥ Technical papers and studies ④ Best practices with the private sector ⑦ CEPA for ABS
National level	Laws and regulations	Academia Private Sector Communities	<ul style="list-style-type: none"> ④ Best practices with the private sector ③ Peer-to-peer knowledge exchange ⑦ CEPA for ABS
Local level	Implementing and monitoring	Academia Private Sector Communities	<ul style="list-style-type: none"> ④ Best practices with the private sector ③ Peer-to-peer knowledge exchange ⑦ CEPA for ABS

Vertical arrows on the left indicate: "Focus until 2010" (upward) and "Focus since 2011" (downward). Vertical arrows on the right indicate: "Developing recommendations" (upward) and "Developing and implementing recommendations" (downward).

Access and Benefit Sharing

The ABS Capacity Development Initiative



funded by



implemented by



Access and Benefit Sharing

The ABS Capacity Development Initiative

Biodiversity = Diversity of ...

Ecosystems



Species



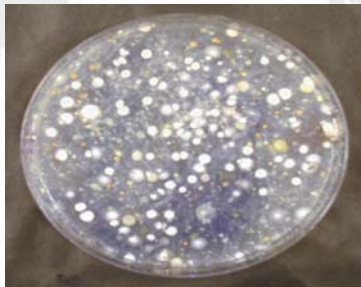
Genes



Enzymes and the Kenya Wildlife Service



Enzymes and the Kenya Wildlife Service

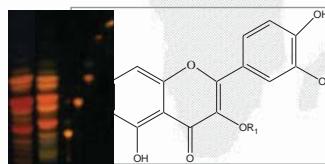


BIOETHANOL

Argan oil (*Argania spinosa*)



Argan oil (*Argania spinosa*)



Polyphenoles



Evening session at Tuesday ...

- Part I: Linkages between ABS & protected areas
- Part II: Case studies
- Part III: Opportunities for cooperation



Thank you

.....more on ABS and the
ABS Capacity Development Initiative

-> *brochure "local to global"*

-> *www.abs-initiative.info*

funded by

BMZ



Federal Ministry
for Economic Cooperation
and Development



DANISH MINISTRY
OF THE ENVIRONMENT



implemented by

giz

Programme Implementing
the Biodiversity Convention



Digital Observatory of Protected Areas (DOPA)

Steve Peedell, William Temperley

BIOPAMA Pacific Regional workshop
Lami, Suva, 4 February 2013

The DOPA

BIOPAMA



▪ Digital Observatory of Protected Areas



a **LEGO** Toolbox for Biodiversity



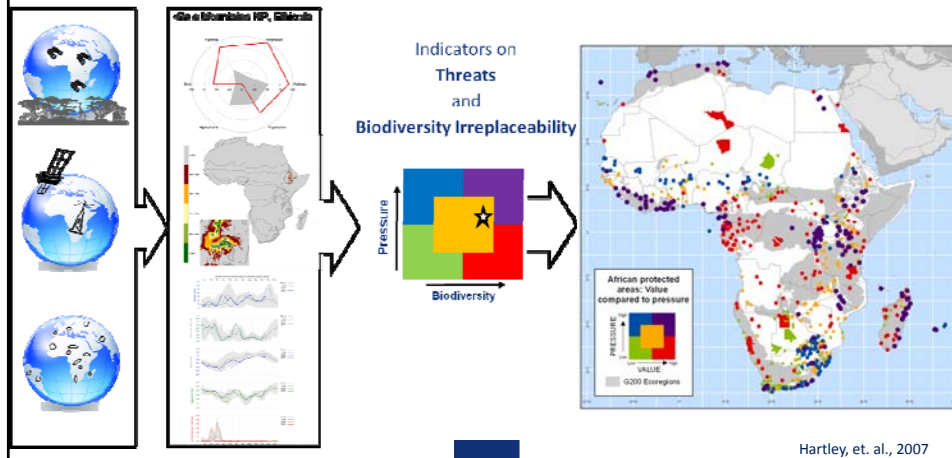
*A set of web based
Critical
Biodiversity
Infrastructures
to Assess,
Monitor,
and Forecast
Biodiversity
at the Global
Scale*

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

The history



African Protected Areas Assessment Tool



The APAAT



Analysed:

- 741 protected areas
- across 50 countries

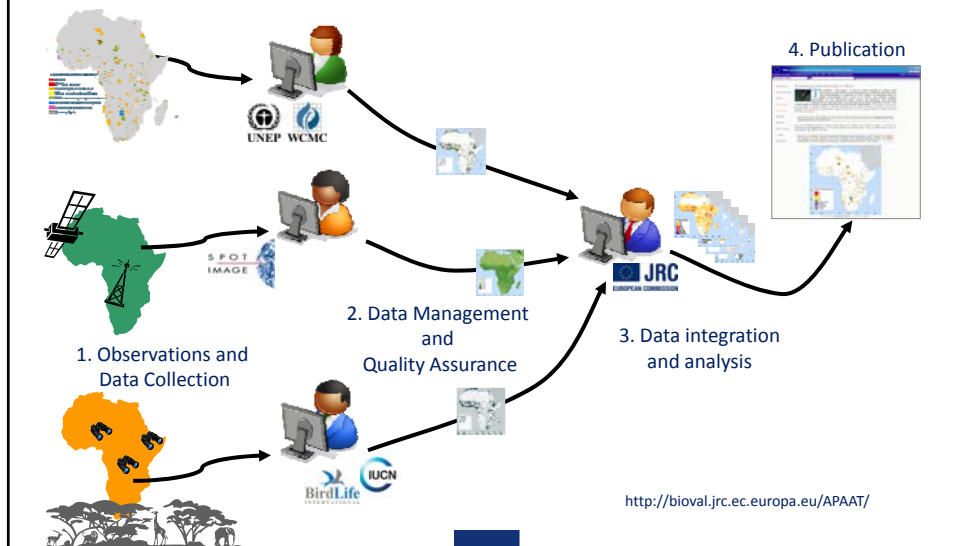
Used:

- information on 280 mammal, 381 bird and 930 amphibian species
- wide range of climatic, environmental and socioeconomic information

Produced:

- Biodiversity indicators
- Index for habitat irreplaceability
- Indicator for anthropogenic pressure

The APAAT



The APAAT



Limitations and lessons learnt

- No reusability of data and models by third parties
- High maintenance costs (one big program, changes & updates complicated)
- We need to go beyond the boundaries of Protected Areas (connectivity, fragmentation, new PAs are major issues)

The APAAT



Limitations and lessons learnt (cont.)

- Limited to Sub Saharan Africa. Policy issues become more and more global and there is a need for accessible global reference data and information systems
- Increase reusability of data, models and IT infrastructure for improved communication and reduced maintenance costs



Where we are now

BIOPAMA



Protected Areas



Habitats



Species



The principles



DOPA = a set of tools rather than one single tool

Distributed
Data and Model
Web Based
Services



Park Managers



Funding organizations



Decision-makers



Researchers

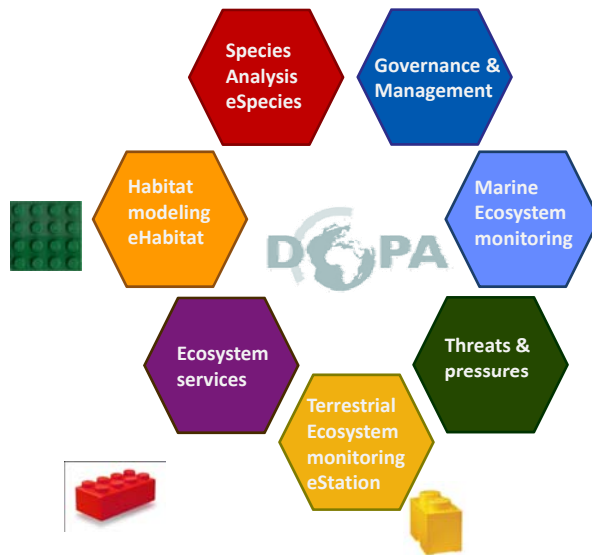


Small independent interoperable
web-based components developed
by experts at different institutions

Components are reusable for other
applications

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The elements

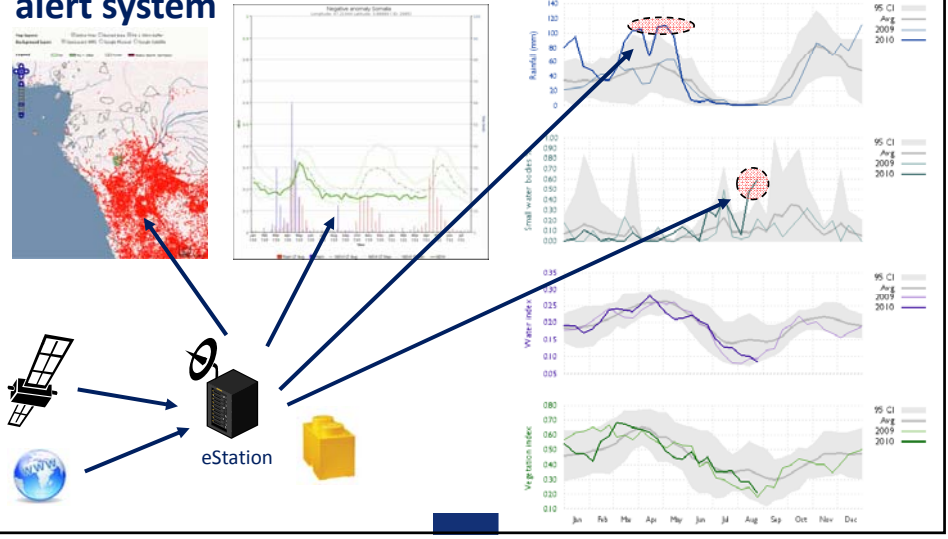


7 blocks supporting the
DOPA



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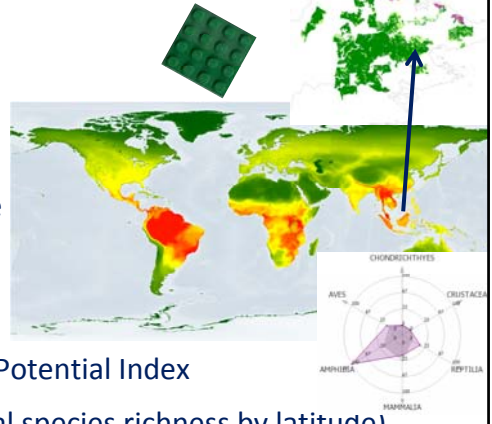
eStation: Environmental monitoring – alert system



eSpecies: Species Information Service

Value added analyses

- Species richness
- Species/land cover analyses
- Species protection coverage
- Gap analysis
- Species Irreplacibility Index
- Protected Area Ecotourism Potential Index
- Research focused (e.g. global species richness by latitude)



European Commission

eHabitat: Habitat uniqueness and ecological forecasting

- tree cover
- herbaceous cover
- barren cover
- Elevation
- Slope
- Vegetation (NDVI)
- Water (NDWI)
- Aridity index
- water bodies

Mapping ecological Similarities (%)

Climate Change

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European Commission

What is next

Integrating the services for decision & policy making

Species Analysis
eSpecies

Governance & Management

Habitat modeling
eHabitat

Marine Ecosystem monitoring

Ecosystem services

Terrestrial Ecosystem monitoring
eStation

Threats & pressures

NBSAPs

Managers

Donors

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DOPA in summary



Web Services & Service Oriented Architecture (SOA)

- Better sharing of data and models (=improved automation & reusability)
- Distributed responsibilities and easier maintenance
- Easy customization of tools for different end-users
- Increased potential for multidisciplinary analyses

DOPA in summary (cont.)



Strengths

- DOPA is free: analytical tools and web based services developed at JRC are open source
- DOPA can be used outside of PAs (simulation of new parks)
- DOPA is scalable (can be adapted to local/ regional needs)
- Partnerships (improved services and indicators)
- Much needed global reference information system for biodiversity
- Data sharing: unlock your data, you will improve their quality and reinforce your mandate!!!

Weaknesses

- IT/internet dependent (but solutions, see eStation)
- data sharing
- Propagation of errors and uncertainties to be dealt with

Reference Information System (RIS)

BIOPAMA



DOPA and BIOPAMA

- BIOPAMA foresees **Regional Reference Information Systems (RRIS)**
- DOPA being developed by JRC and partners will provide fundamental services to support RRIS
- But, **Regional specificities** have to be taken into account (technical and thematic issues will vary). Need for additional tools, methods and data to address these specificities
- DOPA is a first step towards providing **decision makers** with **means to assess the state of protected areas** and **prioritize** them according to biodiversity values and threats.

Thank you!

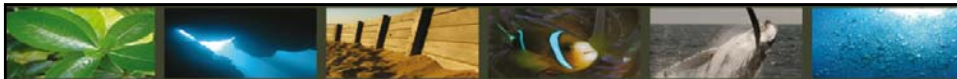


BIOPAMA

Pacific Regional Capacity Building Needs Assessment for Protected Areas and Biodiversity Conservation




Peter Thomas
BIOPAMA Workshop
Suva, February, 2013



Assessment Brief

- Identify and summarize results of previous CB needs assessments for PA planning and management
- Review of main existing regional capacity building programmes and activities
- Identify
 - main gaps and priorities
 - key Institutions
 - training modules
 - **more effective modalities for the implementation of PA Capacity Building**

Limited time / Lots of previous work/ Most pitched at broader theme of Environmental/BD mgmt.



Review Component

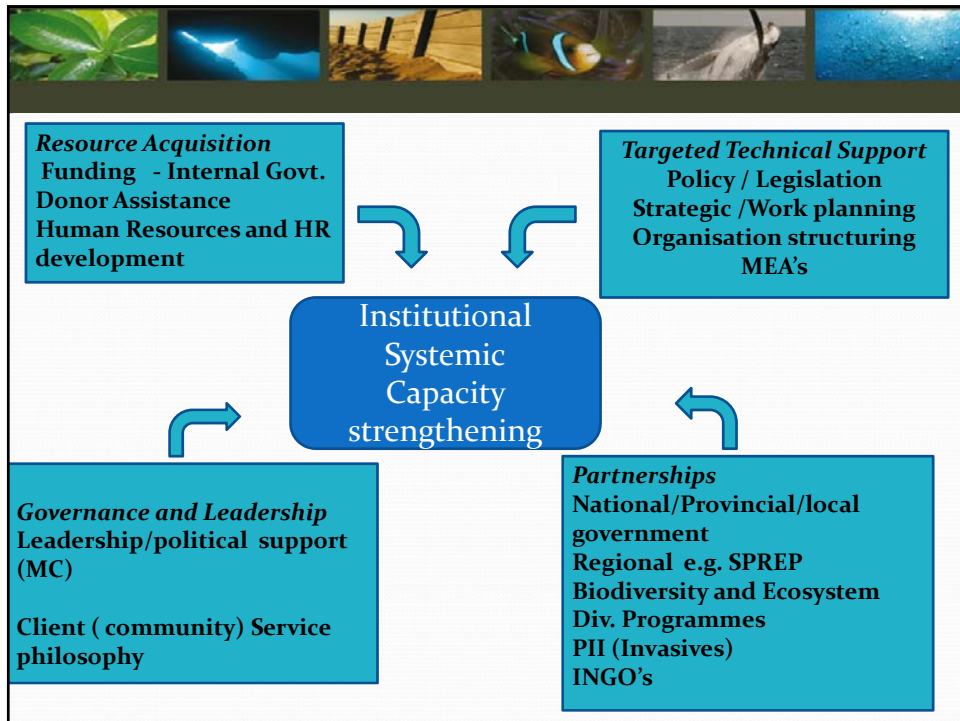
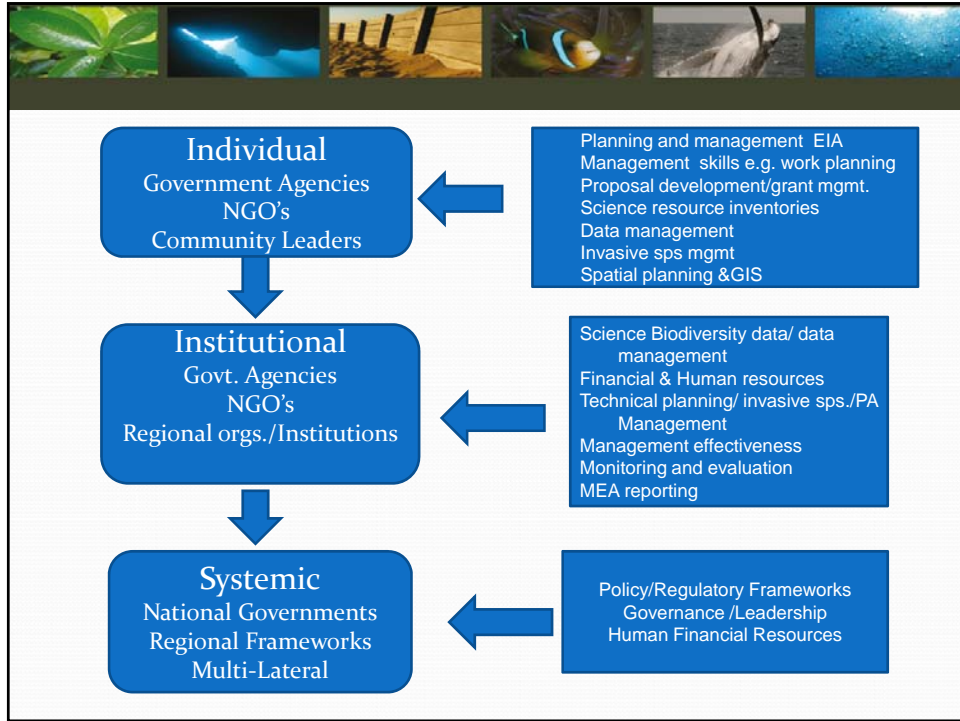
- Reviewed NBSAPs,
- Biodiversity theme National Capacity Self Assessments,
- Personal interviews,
- Internet searches,
- Lessons learned.

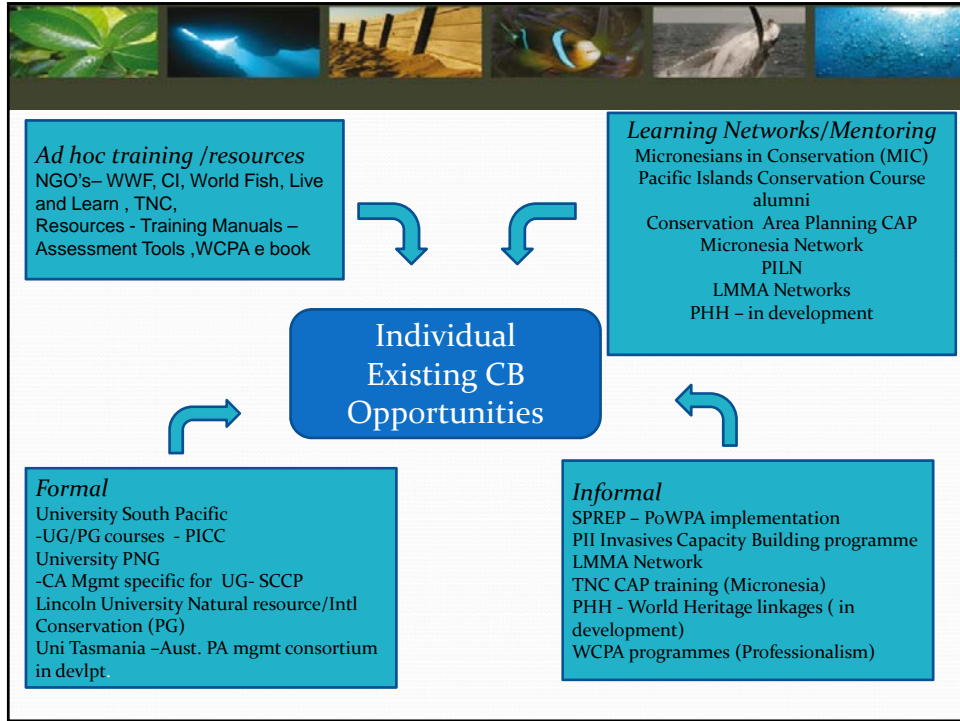


Review Component

Some observations

- Capacity for biodiversity management remains a serious constraint at the individual, institutional and systemic levels
- Broad spectrum of needs – often reflecting national priorities
- PA/CA management is not a widely identified capacity priority
- Components -science, resource inventories and data management, invasives mgmt., planning etc are.
- NGO's carry the torch for PA management employ most of expertise.
- Little support for ad hoc workshops outside of a longer term programme
- Work with existing institutions and programmes
- Take the long term perspective
- Strengthen, support and improve existing initiatives that are working
- Decide on a realistic focus that will make a difference

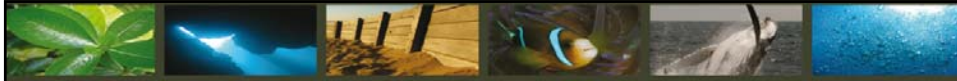




How can BIOPAMA contribute?

Principles

- Work with existing institutions and programmes
- Take the long term perspective
- Strengthen, support and improve initiatives
- Decide on a realistic focus that will make a difference.

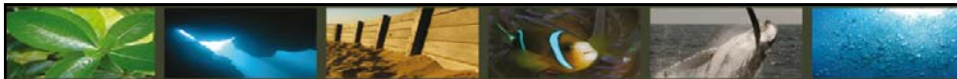


How can BIOPAMA contribute?

Preliminary Ideas

#1 *Building PA Professionalism in Institutions.*

- Work with USP and partners to strengthen the Biodiversity and PA management component for undergraduate/post graduate level courses at USP
- Coordinate with initiative at UPNG (SCCP) and with supporting Unis with PA education/training experience (e.g. Lincoln)
- Develop incentives for choosing as a career direction e.g. inclusion on national scholarship lists
 - target individuals for career development
 - targeted study assistance
 - link with intern opportunities e.g. with NGO's PII, Landcare Research
 - develop multiple donor support and leverage BIOPAMA funding



How can BIOPAMA contribute?

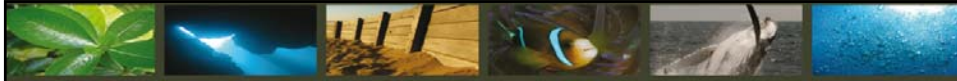
#2 *Strengthening CBC capacity*

Work with USP and partners to support the annual delivery of the Pacific Islands Community Conservation Course (PICCC)

-Link with regional block course providers (e.g. Lincoln) to provide additional resources and access to further study options

-Strengthen alumni learning network through active management and link with other networks e.g. PHH and MIC.

- Develop supporting funding (leverage BIOPAMA)

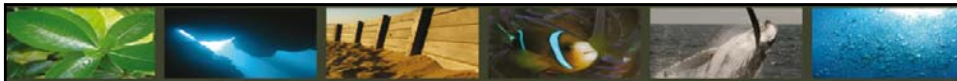


How can BIOPAMA contribute?

3 *Stimulating Regional Coordination*

Support regional coordination of BD/PA capacity building programmes across the region

- establish regional PA/CBC focused capacity development /hub /clearing house including a position (shared funding)
- sustain through institutionalization e.g. SPREP.
- develop partnerships for strengthened delivery and improved opportunities including donors
- help identify and target technical assistance for BD/PA needs in govt.
- link to Pacific Islands Round Table for Nature Conservation/NGO's



Discussion ?



Thank You



Information Systems for BioPAMA

Steve Peedell, Will Temperley
Joint Research Centre, Ispra, Italy

BioPAMA Pacific Regional Workshop
Suva, Fiji
4-6 February 2013



Information Systems for BioPAMA

Overview

- BioPAMA is all about information and systems
- Systems will be deployed in the regions and at JRC
- Early stage of development
- Workshop purposes:
 - Capture information requirements for Pacific region
 - Define capacity building needs
 - Draft an action plan



Information Systems for BioPAMA

Information flow



Information Systems for BioPAMA

Information flow



- Collating existing data
- Commissioning new surveys or fieldwork



Information Systems for BioPAMA

Information flow



- Database management and administration
- Cataloguing



Information Systems for BioPAMA

Information flow



- Create value-added products and services from the datasets



Information Systems for BioPAMA

Information flow



- Providing access to BioPAMA products and services



Information Systems for BioPAMA

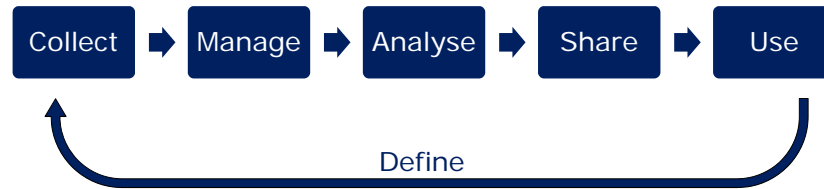
Information flow



- Use of products and services for conservation gain
- Most important part!
- Integration of products and services into tools
- Use/requirements drive what information is collected and produced

Information Systems for BioPAMA

Information flow



Information Systems for BioPAMA

Analyse

- Output DOPA products and services
- Data
 - Indicators
 - Maps
- Models
- Services

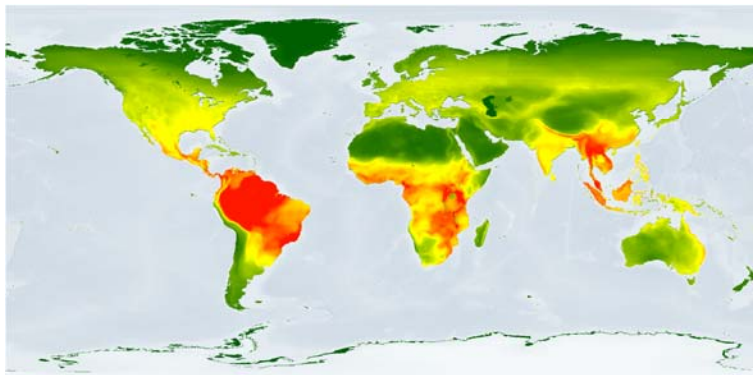
Information Systems for BioPAMA

Analyse – Example products from eSpecies

- Species richness
- Species/land cover analyses
- Species protection coverage
- Gap analysis
- Species Irreplacibility Index
- Protected Area Ecotourism Potential Index
- Research focused (e.g. global species richness by latitude)

Information Systems for BioPAMA

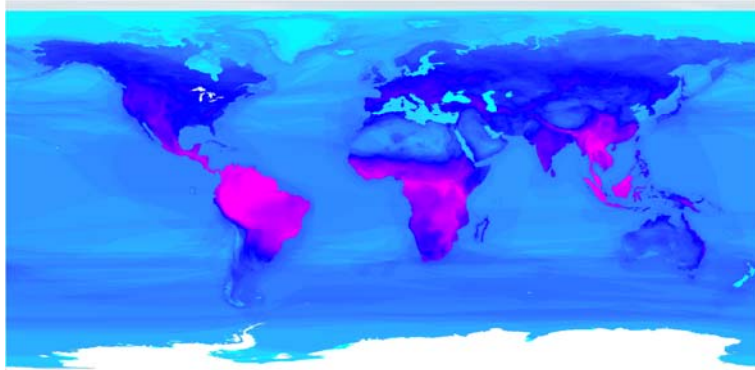
Species richness at 1Km² - All Red List Species





Information Systems for BioPAMA

Species richness at 1Km² - Mammals



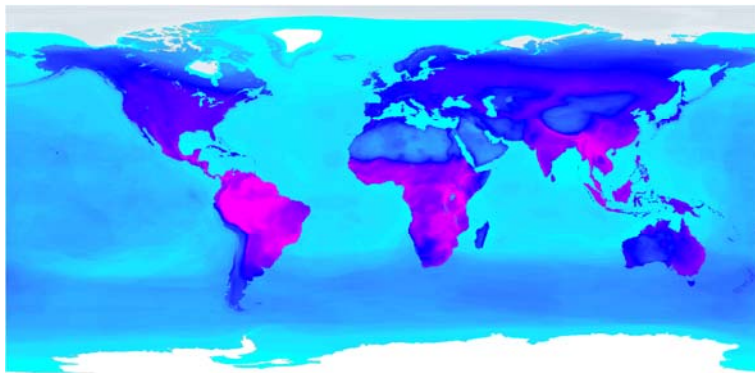
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Species richness at 1Km² - Birds

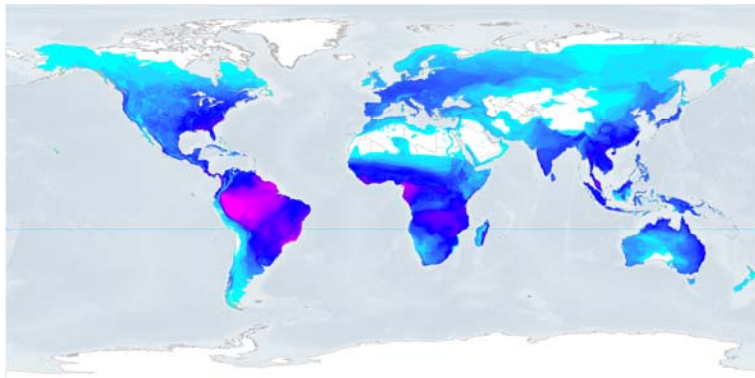


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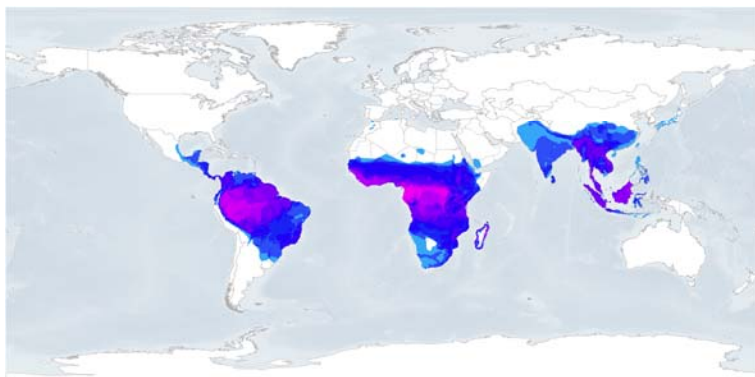
Information Systems for BioPAMA

Species richness at 1Km² - Amphibians



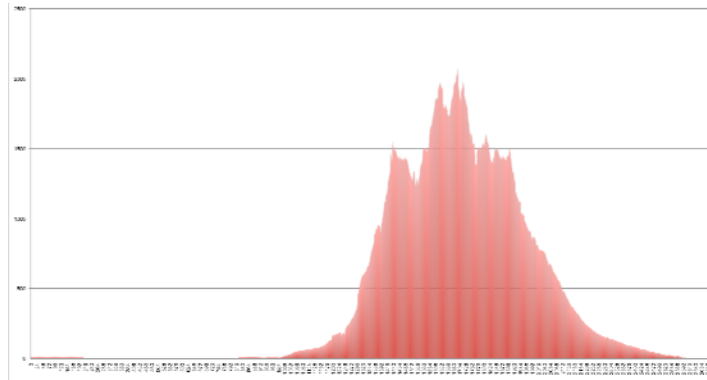
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Species richness at 1Km² - Primates



Information Systems for BioPAMA

Species richness by latitude



Information Systems for BioPAMA

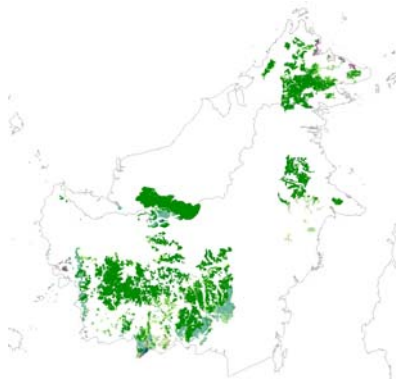
Species richness by latitude





Information Systems for BioPAMA

Species land cover analyses



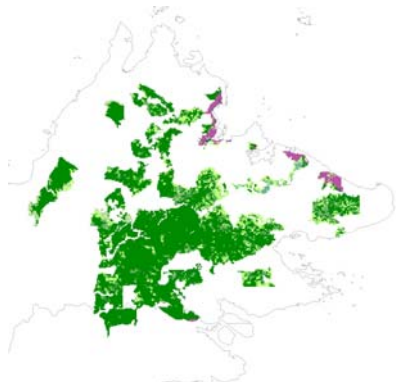
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Information Systems for BioPAMA

Species land cover analyses

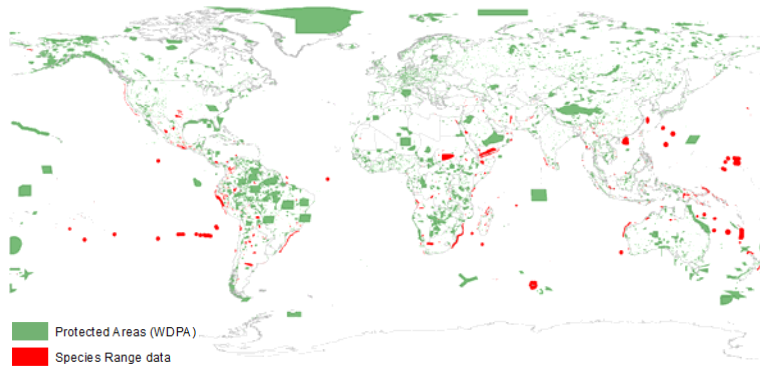


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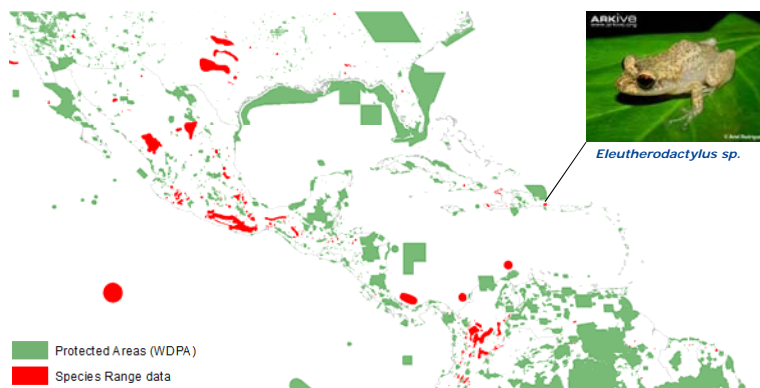
Information Systems for BioPAMA

Species protection gap analysis



Information Systems for BioPAMA

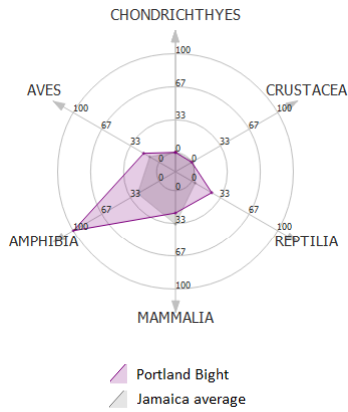
Species protection gap analysis





Information Systems for BioPAMA

PA Ranking - Species irreplaceability indices



Joint Research Centre

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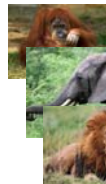


Information Systems for BioPAMA

PA Ranking - Protected Areas Ecotourism Potential Index

class	family	kingdom	order	phylum	taxon
AVES	Muscicapidae	ANIMALIA	Passeriformes	CHORDATA	Ficedula westermanni
AVES	Apodidae	ANIMALIA	Apodiformes	CHORDATA	Hirundapus giganteus
AVES	Dicaeidae	ANIMALIA	Passeriformes	CHORDATA	Dicaeum cruentatum
AVES	Laniidae	ANIMALIA	Passeriformes	CHORDATA	Lanius cristatus
MAMMALIA	VESPERTILIONIDAE	ANIMALIA	CHIROPTERA	CHORDATA	Myotis horsfieldii
AVES	Cuculidae	ANIMALIA	Cuculiformes	CHORDATA	Phaenicophaeus javanicus
AVES	Columbidae	ANIMALIA	Columbiformes	CHORDATA	Ducula badii
MAMMALIA	MUSTELIDAE	ANIMALIA	CARNIVORA	CHORDATA	Adonyx cinerea
AVES	Dicaeidae	ANIMALIA	Passeriformes	CHORDATA	Prionochilus thoracicus
AVES	Muscicapidae	ANIMALIA	Passeriformes	CHORDATA	Ficedula hyperythra
AVES	Strigidae	ANIMALIA	Strigiformes	CHORDATA	Kittupa ketupu
AMPHIBIA	MEGOPHYRYDAE	ANIMALIA	ANURA	CHORDATA	Leptobrachium montanum
AVES	Muscicapidae	ANIMALIA	Passeriformes	CHORDATA	Muscicapella bodgani
MAMMALIA	VESPERTILIONIDAE	ANIMALIA	CHIROPTERA	CHORDATA	Kerivoula papillosa
AVES	Picidae	ANIMALIA	Piciformes	CHORDATA	Hemicircus conreftus
AVES	Phaenocarpa	ANIMALIA	Phaenocarpa	CHORDATA	Phaenocarpa

Protected areas /Species data



49 million images

2.84 million images

705 million images

Species Charisma Index

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Information Systems for BioPAMA

Analysis - Issues

- Data quality
- Information gaps
 - Taxonomic group coverage
 - Lack of trend data
 - PA IUCN Management Category
- Sustainability
 - Automated update mechanism when data changes
 - Informatics challenge of 'big data' and scaling geographically
 - Technology choice – standards-based, open-source, interoperable



Information Systems for BioPAMA

Sharing

- Data search and discovery
- Data catalogues and metadata
- Provides access to:
 - Data
 - Models
 - Services, e.g. alerts
- Many options to deliver access and sharing:
 - Web, SMS, email, EUMETCast, data sharing portals etc.



Information Systems for BioPAMA

Sharing – Access and delivery

- DOPA has published the [REST Services Catalog](#)
 - Open access to main DOPA products and services via URLs
 - Web delivery, SMS, email etc.
- Spatial data sharing
 - Within the region/partners – contribute and access
 - [ArcGIS.com](#) map sharing (cloud)
 - Harvard [Worldmap](#)



Information Systems for BioPAMA

Sharing – Issues

- Licensing
- Sensitivity and access control
- Offline delivery
- Data standards
- Harmonisation/generalisation



Information Systems for BioPAMA

Use

- Integration of products and services into tools (e.g. user interfaces and visualisations)
- Web Services
 - Modular architecture – ‘lego’ building blocks
 - Data managed at source (so always current)
 - Flexible reuse of information
 - Foster a developer community
- Decision support tools:
 - Tools in your browser
 - Desktop tools
 - Smart phone apps
 - Physical reports



Information Systems for BioPAMA

Use - sources



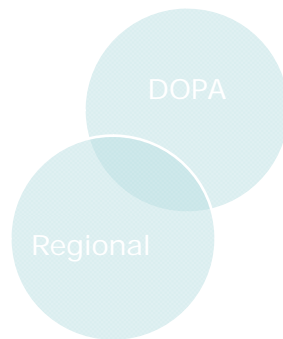
Example products:

- Species richness maps
- Land cover change data
- Threat information



Information Systems for BioPAMA

Use - sources



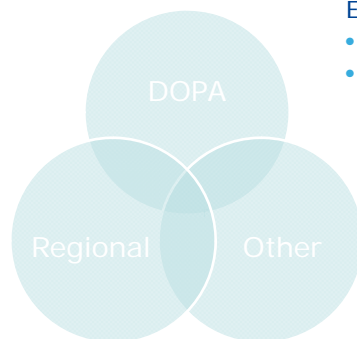
Example products:

- PA management plans
- National land cover data
- Local monitoring data



Information Systems for BioPAMA

Use - sources



Example products:

- GBIF species occurrences
- PA information from UNEP-WCMC



Information Systems for BioPAMA

Use – Tools in your browser

- [Species lists](#) for a protected area
- Species richness [visualisation tool](#)
- [WebGL Globe](#)
- [Mash up](#) of services
- [DOPA Explorer](#)
- [DOPA Ecological Niche Modelling](#)



Information Systems for BioPAMA

Use – Other tools

- Excel [species list](#) for a protected area
- Desktop GIS (e.g. ArcGIS)
- Conservation planning tools (e.g. Marxan)



Information Systems for BioPAMA

Workshop – capturing requirements and planning

- Informatics requirements
 - Requirements for national reporting (to CBD)
 - Requirements for PA management, e.g. [‘How is my MPA doing?’](#)
 - Other requirements
 - What is the prioritisation process?
- Capacity building needs
- Planning
 - Some pieces of the jigsaw are in development (e.g. DOPA)
 - Lot needs to be defined and implemented, e.g. Regional RIS
 - Iterative pilots are needed to focus on a few key requirements



Information Systems for BioPAMA

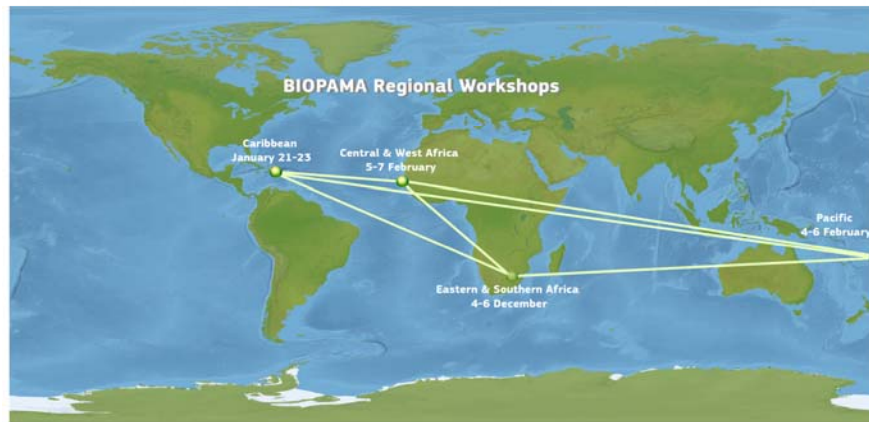
Workshop – Capacity Building needs



- Regional Reference Information Systems may need:
 - Ecologists
 - Database administrators and custodians
 - Information scientists
 - Developers
 - Physical things, e.g. offices and computers

Information Systems for BioPAMA

Capturing requirements



Information Systems for BioPAMA

Contact

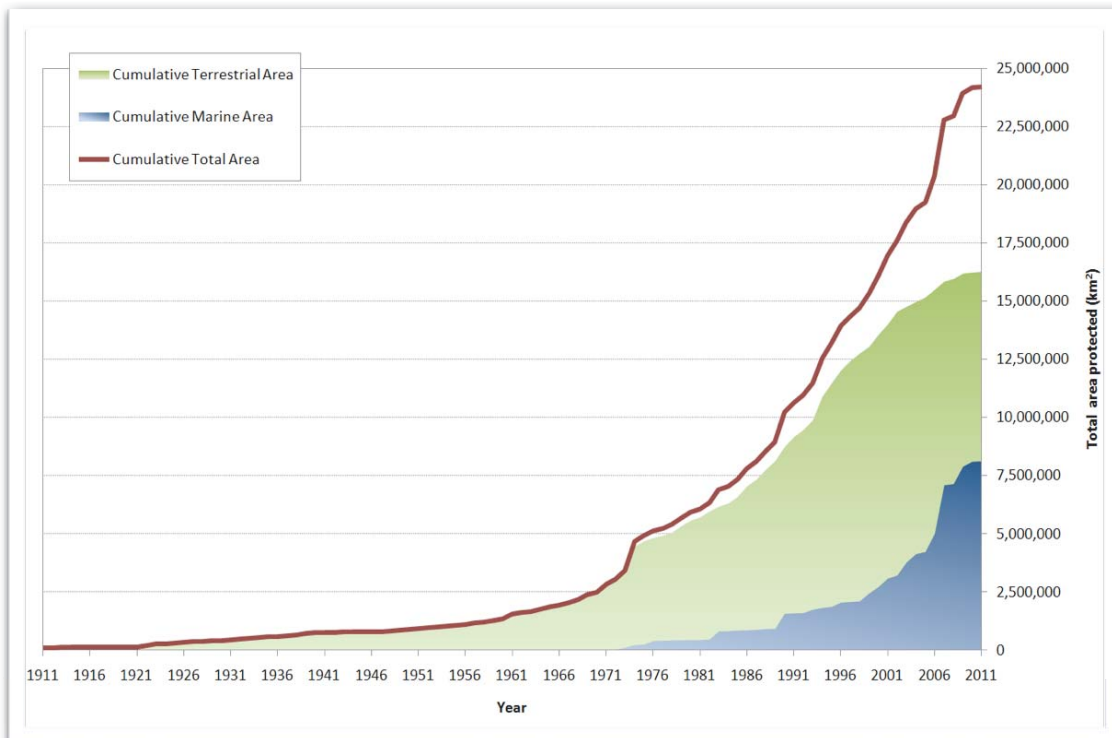
- Join our yammer discussion group
 - biopama@jrc.ec.europa.eu
 - Steve Peedell
 - stephen.peedell@jrc.ec.europa.eu
 - William Temperley
 - william.temperley@jrc.ec.europa.eu

WCPA-SSC Joint Task Force on Biodiversity and Protected Areas and BIOPAMA

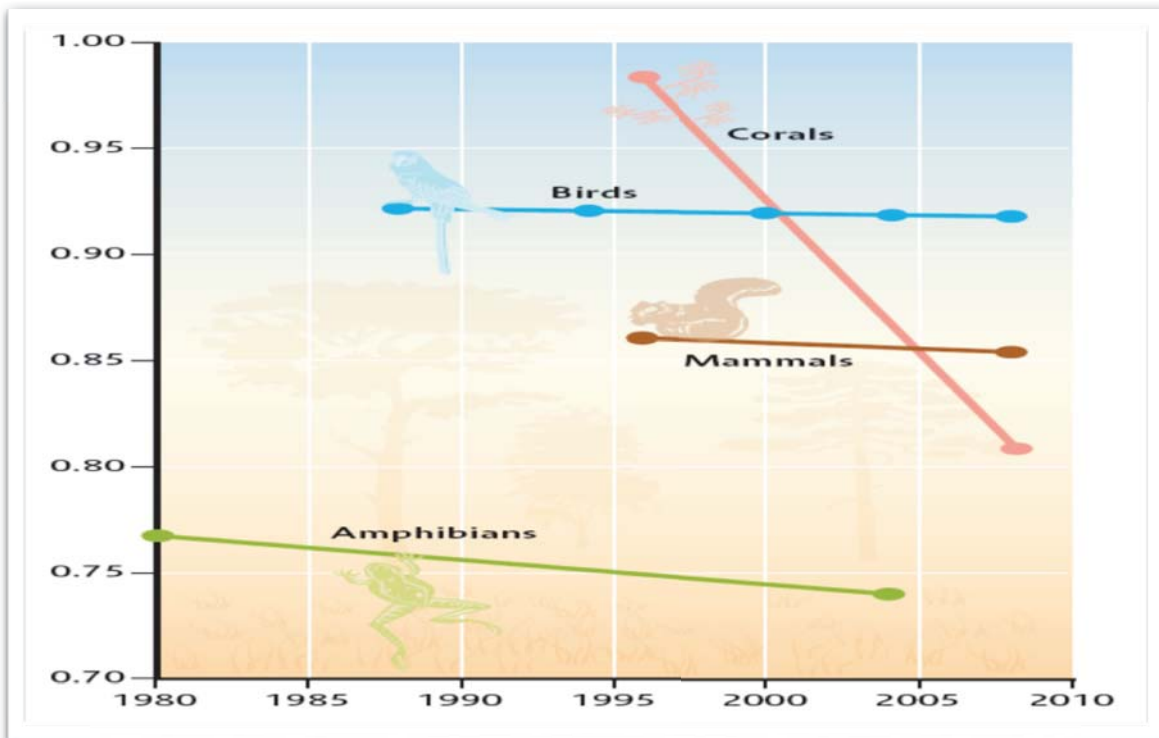
Sarah Whitmee



Good news - big growth in protected areas



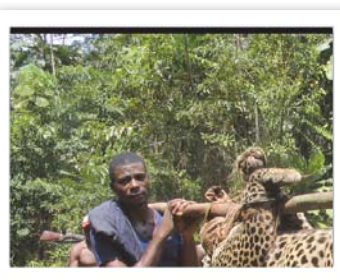
Bad news - biodiversity still declining



SCBD (2010) GBO3

Why is there a disconnect between protected area growth and levels of biodiversity loss?

1. Protected areas might not be in the right places
2. Protected areas might not be working
3. Coverage of protected areas might be inadequate to conserve the planet's biodiversity



Task Force objectives

Objective 1

- How well do protected areas conserve biodiversity?
- What are the factors that are responsible for protected areas success or failure?

Objective 2

- What should be the global standards for the identification of sites of biodiversity conservation significance (“key biodiversity areas”)?

Task Force objectives

Objective 1

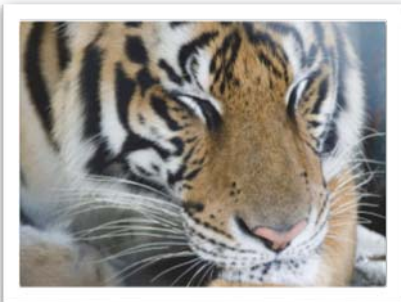
- How well do protected areas conserve biodiversity?
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Objective 2

- What should be the global standards for the identification of sites of biodiversity conservation significance (“key biodiversity areas”)?

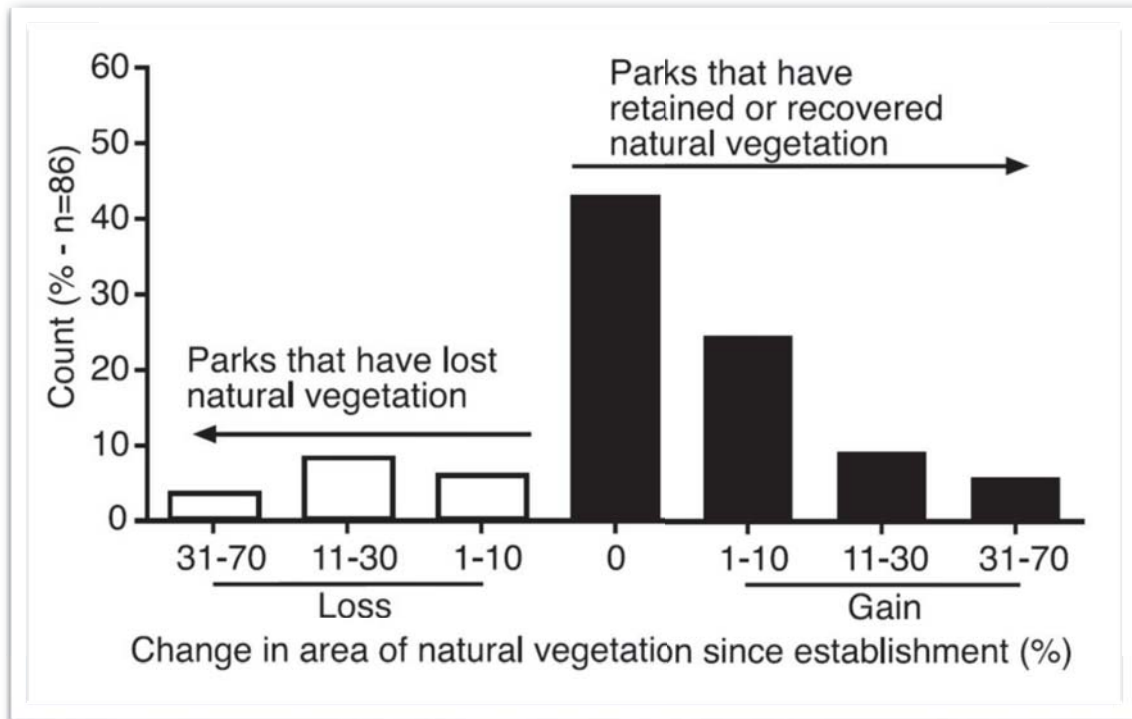
Global study: Biological outcomes

- Change in biodiversity through time
- Relate to factors thought to be important or relevant to PAs
- What to use as a proxy for PA effectiveness?



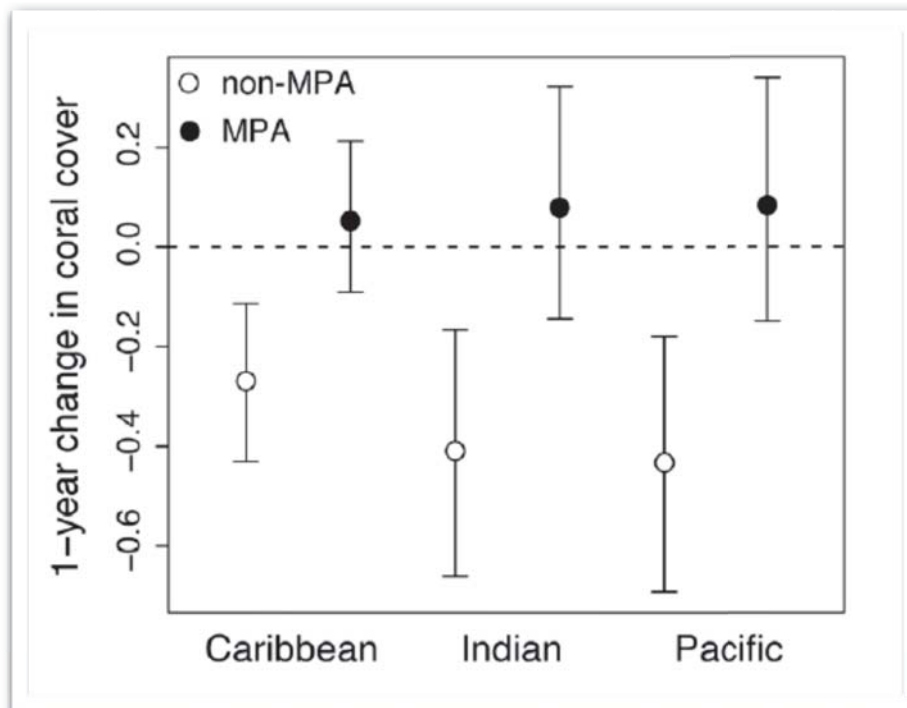
What others have found.....

Ecosystem analyses - 80% increased or stable



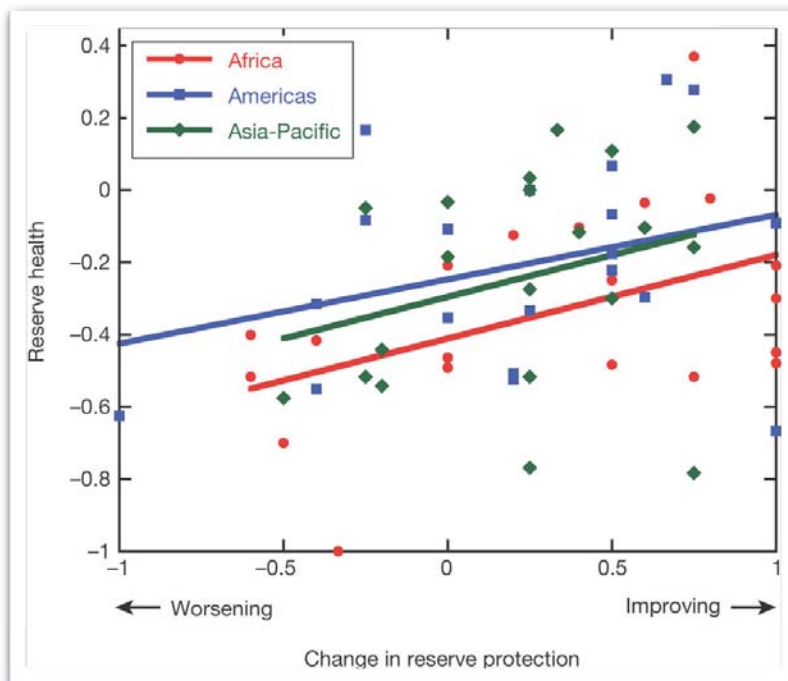
Bruner et al. (2001) Science

Change in percent coral cover (2004 - 2005) inside and outside of MPAs



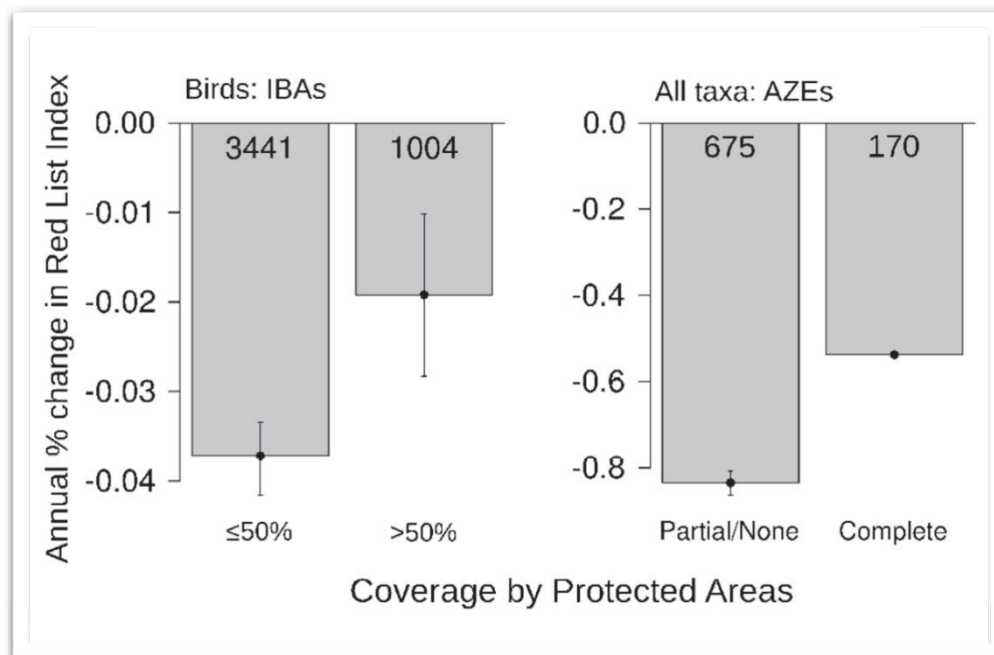
Selig and Bruno (2010) PLoS One

Effects of improving on-the-ground protection on a relative index of reserve health



Laurance et al. (2012) Nature

Using Red List Indices

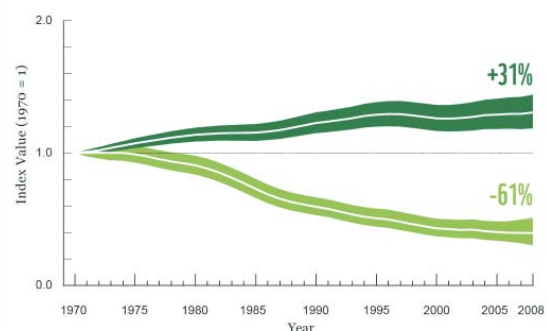
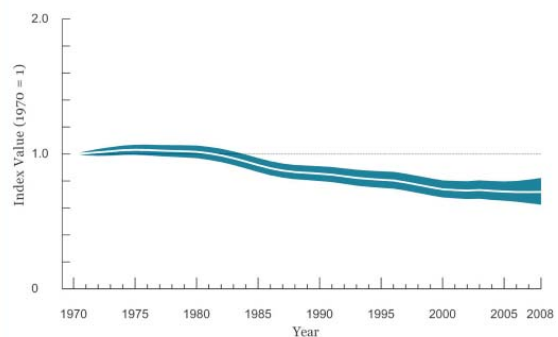
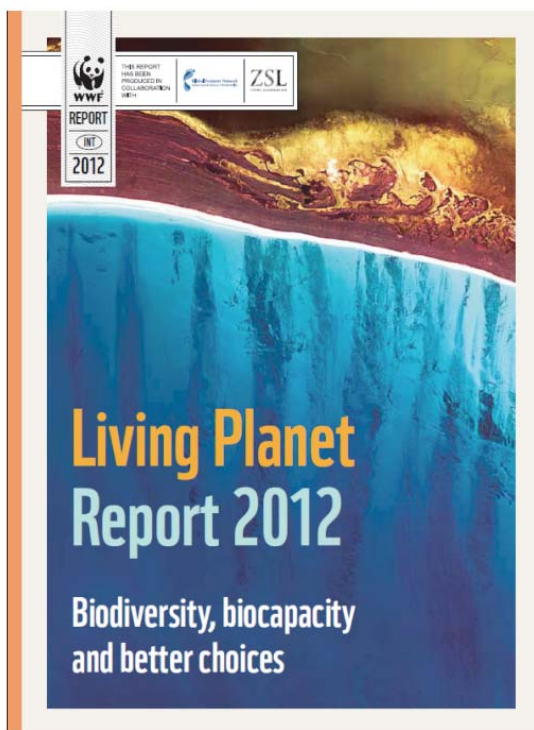


Butchart et al. (2012) PLoS One

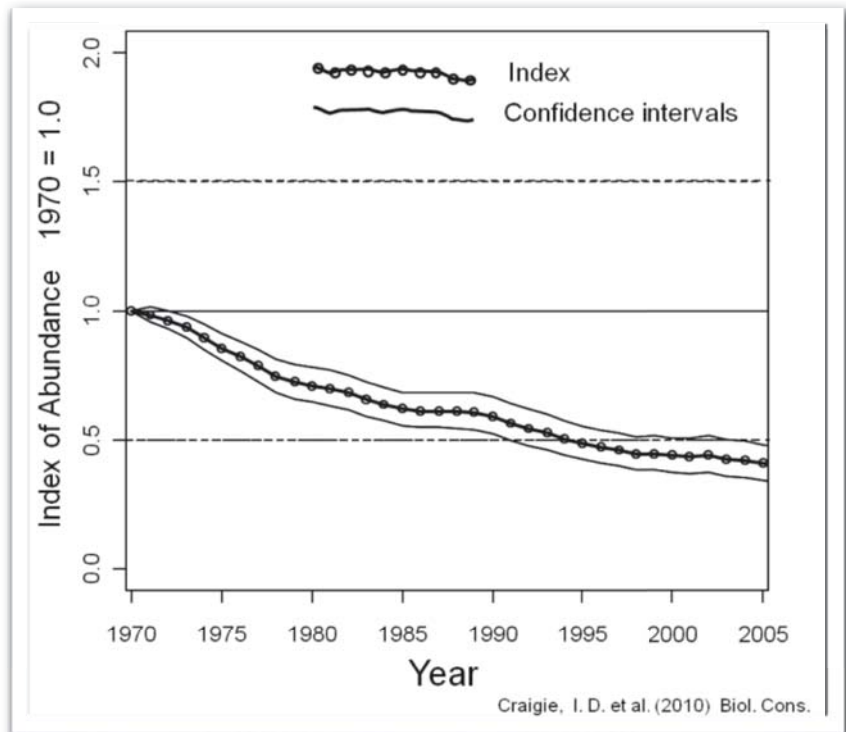
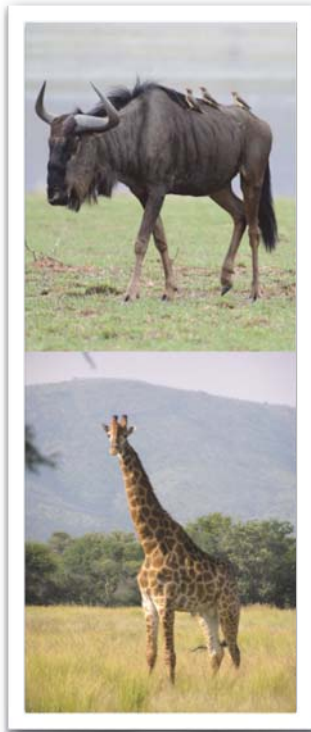
Population abundance time series as a measure of PA effectiveness



The Living Planet database

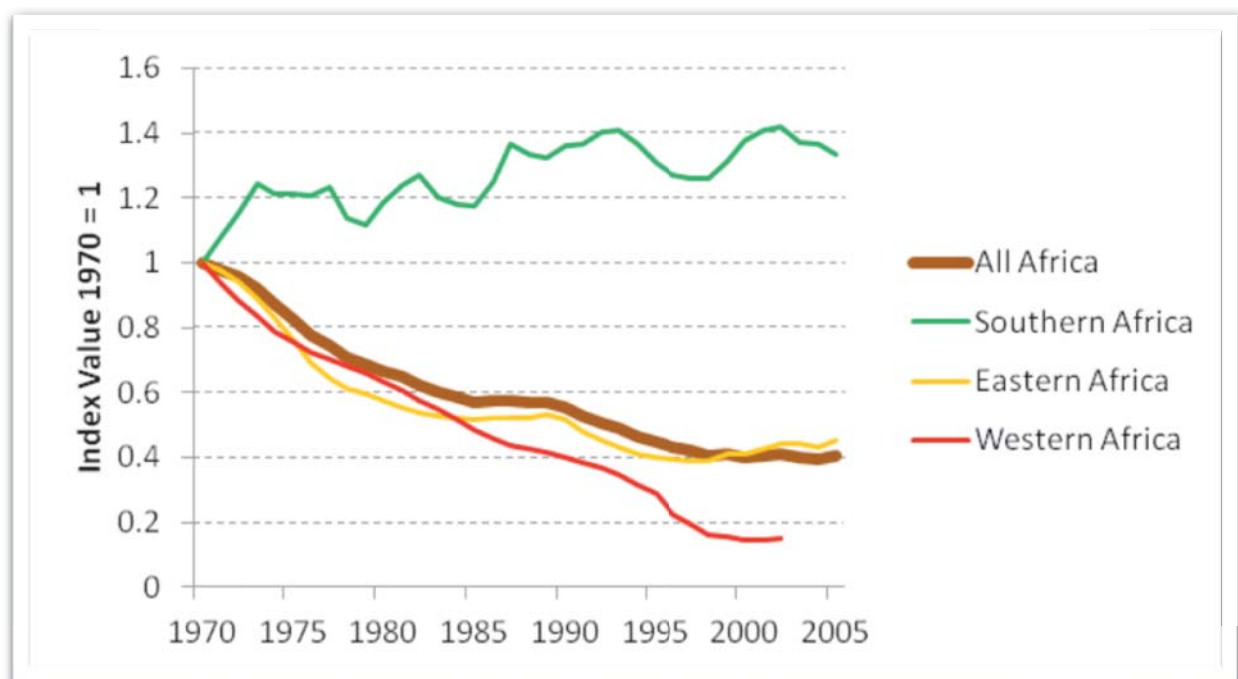


African protected area population index



Biodiversity outcomes

- Large mammal population declines in African PAs?



Potential drivers of protected area outcomes

Management

IUCN category

Governance

Year of establishment

Staff

Budget

Equipment

International designations

Values (focus)

Management effectiveness

Design characteristics

Size

Shape

Connectivity / fragmentation

Critical habitat

Position wrt threat

Social and political context

Country

Geopolitical region

Poverty

Corruption - CPI

Legal framework

GDP

Land tenure

Land use context

Population density

Land use type

Land use change

Fragmentation

Roads

Night lights

Ecological context

Stressors and threats

Relative threat

Trophic level

Function group

Biome / ecoregion

What factors best predict protected areas effectiveness?

- Size of the protected area
- IUCN Protected Area Category – I to VI
- GDP of the country
- Human Development Index of the country
- Corruption Index
- Size of the biodiversity – big vs small wildlife
- External land use around the protected area
- Proximity of human populations
- Management effectiveness

Where are we now?

Population time-series data so far:

- 1620 time series
- 378 protected areas
- 496 species



Explanatory variables:

- More than 50 variables
- Site (protected area), species and country scales

Preliminary results

Significant

- Socio-economic variables – GDP, HDI, Corruption Index
- Larger body size
- Perhaps a bias toward stewardship or measurement of large mammals

Not significant

- IUCN Protected Area Category I-VI
- Park size
- External - Roads, People, Urbanization

What can we conclude?

- Understanding protected areas outcomes is highly complex
- Population data sets are hard to get!
- Many lines of evidence support the notions that protected areas work when they are well managed and well designed
- Classic notions are size and fragmentation are not well tested by existing data
- Protected area success is very contextual

Contributing to BIOPAMA

- Ultimately BIOPAMA needs to help park managers understand the state of their ecosystem: and the effectiveness of management interventions
- There needs to be a range of ecological structure and functional measures, at a range of ecological scales – but population abundance measures are very valuable
- Many lines of evidence support the notions that protected areas work when they are well managed
- Some level of population monitoring is highly desirable, to be connected with remote sensing measures
- Protected area success appears very contextual to place

Where to from here?

- Analysis of Task Force data is ongoing
- Search for additional data is ongoing
- Set up a global data centre in partnership with the Living Planet Index
- BIOPAMA project – Caribbean and Pacific analysis
- Global coastal marine model
- Counterfactuals

Trends in population abundance for Pacific and Caribbean species

Pacific populations in the LPI:

30 time series
18 species
11 only have 2 points
14 Marine
13 Freshwater
3 Terrestrial

Caribbean populations in the LPI:

42 time series
28 species
4 records have 2 points
1 Freshwater
9 Marine
32 Terrestrial

Search terms

"caribbean" and "abundance"

"caribbean" and "biodiversity"

"caribbean" and "population" "trend"

"pacific" and "abundance"

"pacific" and "biodiversity"

"pacific" and "population" "trend"

Trends in population abundance for Pacific and Caribbean species

Not in Protected Areas	Abundance of humpback whales in Oceania (South Pacific), 1999 to 2004	Baker et al
	Application of a habitat-based model to estimate effective longline fishing effort and relative abundance of Pacific bigeye tuna (<i>Thunnus obesus</i>)	Bigelow et al
	Population status and behaviours of the Samoan Flying fox (<i>Pteropus samoensis</i>) on Tutuila Island, American Samoa	Brooke
	Mangrove Crabs	Brown
	Seasonal and Long-Term Changes in Relative Abundance of Bull Sharks from a Tourist Shark Feeding Site in Fiji	Brunnschweiler & Baensch
	A Comparison of 1983 and 1994 Bird Surveys of Pohpei, Federated States of Micronesia	Buden
	Recent status and trends of the land bird avifauna on Saipan, Mariana Islands, with emphasis on the endangered Nightingale Reed-warbler <i>Amphispalis lucida</i>	Camp et al
	Abundance of humpback whales in Oceania based on fluke photo-identification and DNA profiling	Constantine et al
	Relative Abundance and Distribution of Mariana Swiftlets (Aves: Apodidae) in the Northern Mariana Islands	Cruz et al
	Power to detect linear trends in dolphin abundance: Estimates from tuna-vessel observer data, 1975-89	Edwards & Perkins
	Temporal Variation in Forest Bird Survey Data from Tutuila Island, American Samoa	Freifeld et al
	An anomalous increase in the New Caledonia humpback whales breeding sub-stock E2.	Garrigue et al
	A preliminary survey of humpback whales and other cetaceans in Vanuatu, South-West Pacific. A contribution from the South Pacific Whale Research Consortium.	Garrigue et al
	Occurrence & Habitat Use of Humpback Whales in the Cook Islands	Hauser & Clapham
	Population Status and Interesting Movement of Leatherback Turtles, <i>Dermochelys coriacea</i> , Nesting on the Northwest Coast of Papua, Indonesia	Hitipeuw et al
	Status of the Marianas Fruit Bat (<i>Pteropus mariannus</i>) in the Northern Mariana Islands North of Saipan	Lemke
	Population status of the Tinian Monarch (<i>Monarcha takatsukasae</i>) on Tinian, Commonwealth of the Northern Mariana Islands	Lusk et al
	ATOLL RESTORATION IN THE PHOENIX ISLANDS, KIRIBATI: SURVEY RESULTS IN NOVEMBER-DECEMBER 2009	Pierce et al
	Conservation of kakerori (<i>Pomarea dimidiata</i>) in the Cook Islands in 2006/07	Robertson & Saul
	Status and Natural History of <i>Emballonura Semicaudata Potensis</i> on Aguiuan, Mariana Islands	Wiles et al
In Protected Areas	Decline in sea snake abundance on a protected coral reef system in the New Caledonian Lagoon	Goiran & Shine
	Ecosystem-Based Management in Fiji: Successes and Challenges after Five Years of Implementation	Jupiter & Egli
	The Fiji Islands Whale Sanctuary	Paton et al
	Tempering Expectations of Recovery for Previously Exploited Populations in a Fully Protected Marine Reserve	Schultz et al
	Marine Reserves and Reproductive Biomass: A Case Study of a Heavily Targeted Reef Fish	Taylor et al



Data Request: Assessing the effectiveness of protected areas for biodiversity conservation

IUCN's Biodiversity and Protected Areas Management Programme (BIOPAMA).

BIOPAMA is a flagship initiative of the IUCN Global Protected Areas Programme, with a thematic focus on developing capacity for protected areas. Funded by the EU and the Intra-ACP (Africa, the Caribbean and Pacific countries), BIOPAMA is a unique effort to combine the best data available on biodiversity in ACP countries with capacity building to strengthen protected area management for the benefit of both nature and people. One of the objectives of BIOPAMA is to improve protected areas management and decision making through better data availability and the establishment of regional observatories. This note is a data request to support that study. This research is being conducted by the IUCN through a WCPA-SSC Joint Task Force on Biodiversity and Protected Areas, in collaboration with the Institute of Zoology, ZSL.

Background: Protected areas are recognized as key tools in biodiversity conservation and over the past decade we have also made great advances in understanding issues of protected area management effectiveness. However, we still have surprisingly little data on long-term biodiversity conservation outcomes from protected areas, and what current data we do have is heavily biased towards toward only a few countries and terrestrial systems. To test whether protected areas are working in ACP countries, both on land and in marine systems, we aim to assess protected area outcomes at the population and species level.

Success or failure in biodiversity conservation might be measured in terms of (i) genes (ii) individual populations; (iii) species; (iv) communities; or (v) ecosystems. For this study we are using trends in population time series for populations located inside protected areas. Ideally there would be similar population time series located in unprotected areas so we can compare trends both inside and outside protected areas to benchmark effectiveness.

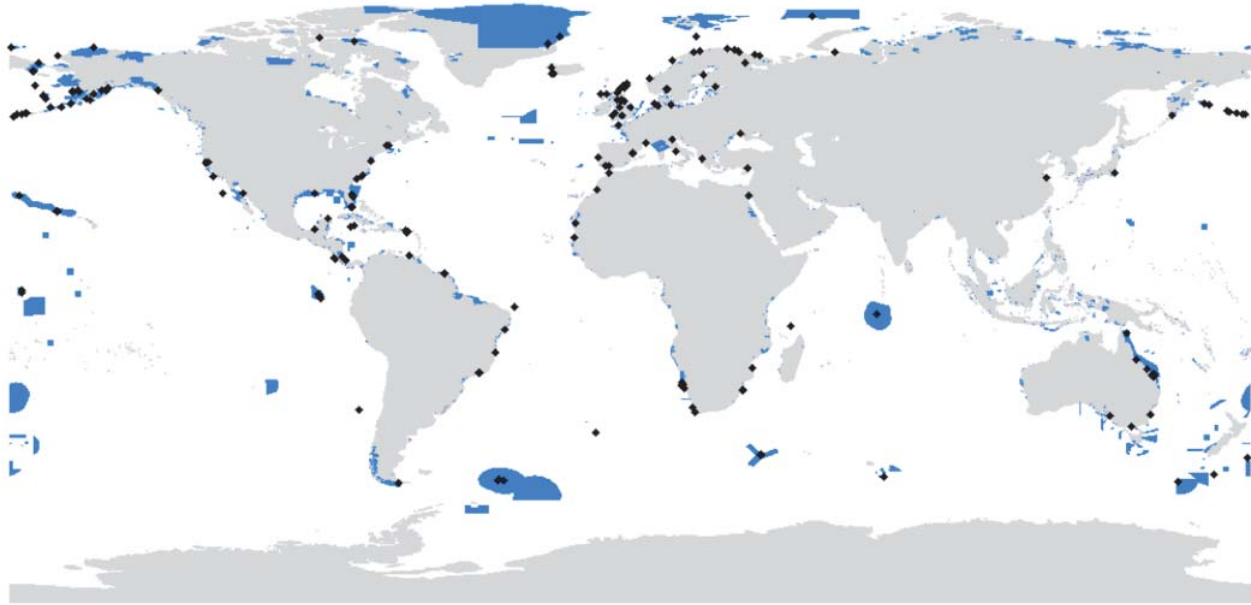
Data Requirements:

We would like your help to collect data from both inside and outside protected areas:

- Data should come from one of the African, Caribbean or Pacific countries (listed overleaf). It can be from species or populations inhabiting terrestrial, freshwater or marine systems.

Data request sheet

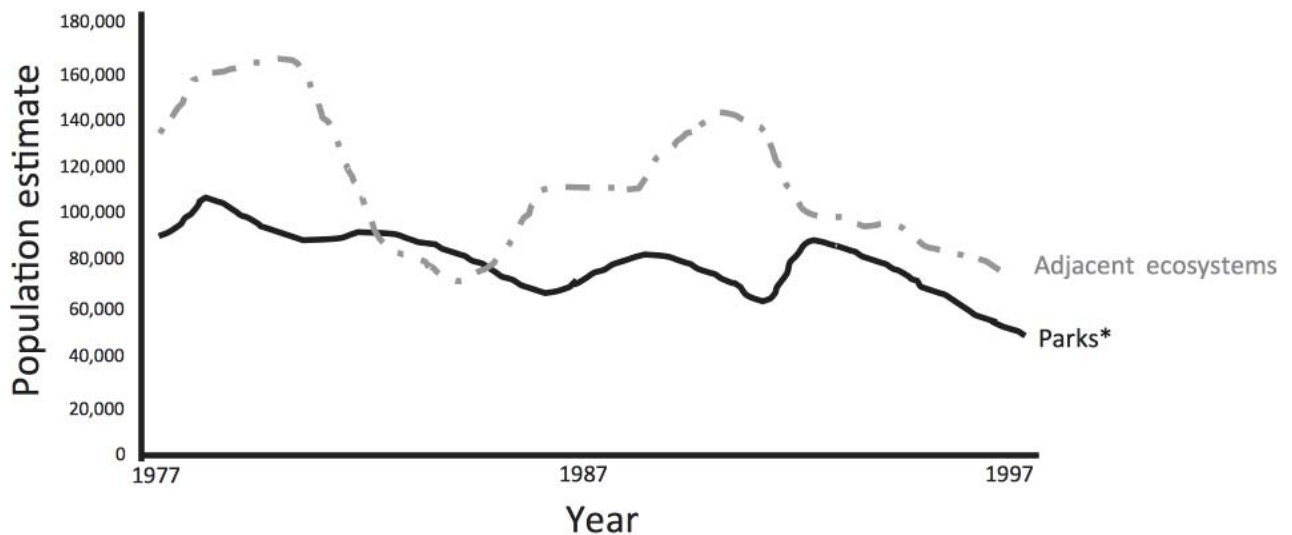
Marine protected areas



■ MPA
■ Land
• Pop trend from MPA

273 species
633 populations

What is going on beyond park boundaries?

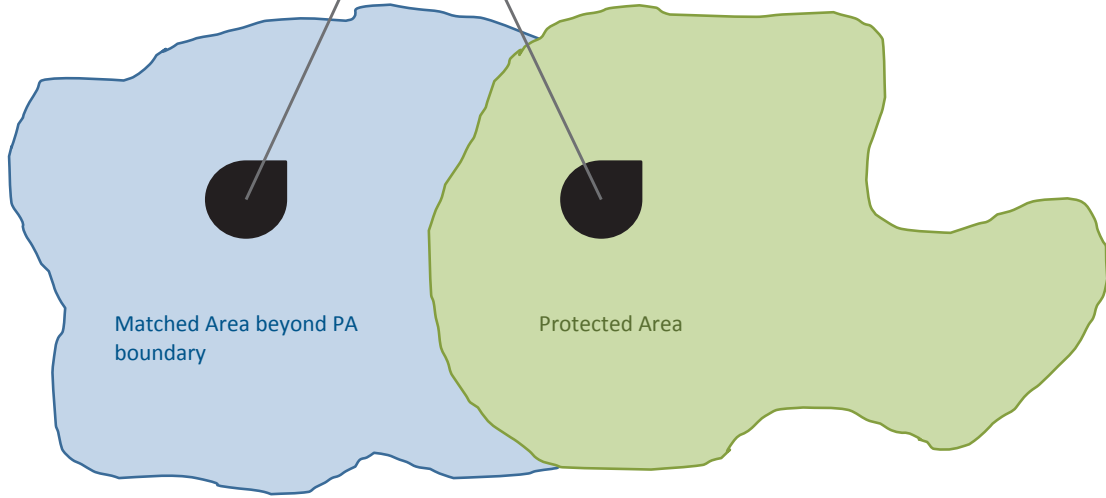


* Tsavo East, Tsavo West, Amboseli, Nairobi

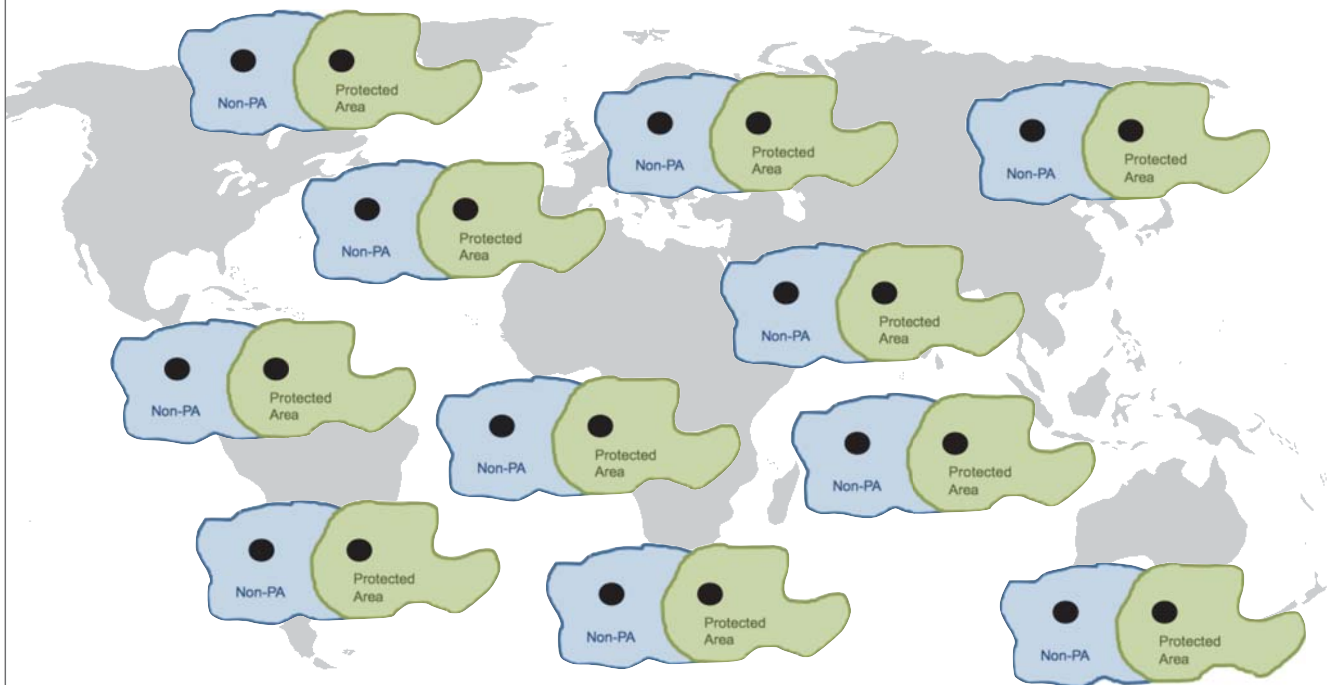
16 species mammals


Matched pairs

Population trend estimates



Matched pairs



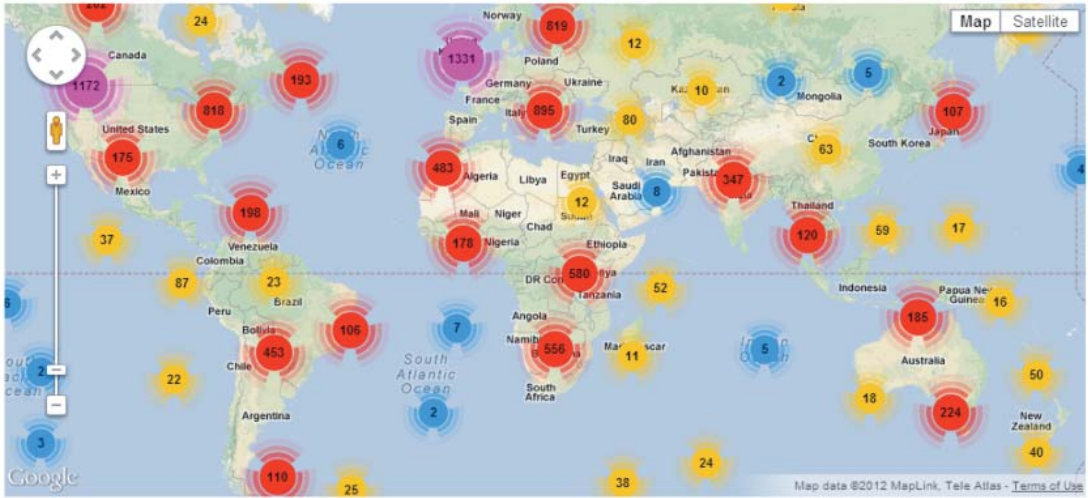


Living Planet Index

Home About Data Portal Projects Publications Register

You are here: [Data Portal](#)

Welcome to the LPI Data Portal



The LPI database is available online to all logged in visitors. The map above gives a snapshot of the number of populations we have in the database from around the world.

You can freely browse the map above even when you are not logged in. However, if you would like to perform searches, view and download individual population records or contribute your own data, please log in or register using the links below.

[Log In](#) [Register](#)

A plea for data

- If we are going to make a robust case for keeping our protected areas, then we need to know why and when they work
- The Joint Task force on Biodiversity and Protected Areas needs your data!
- All contributions recognized
- Data can be held confidentially!!!!

Sarah.Whitmee@ioz.ac.uk

Stephen.Woodley@iucn.org

Task Force website

www.iucn.org/biodiversity_and_protected_areas_taskforce/

Google Group

<http://groups.google.com/group/wcpassc-joint-task-force/about>

Stephen Woodley and Thomas Brooks
Co-Chairs, Joint Task Force on Biodiversity and Protected Areas

Luigi Boitani (University of Rome)

Nigel Dudley (Equilibrium)

Gustavo Fonseca (GEF)

Jaime Garcia-Moreno (Wetlands International)

Marc Hockings (Uni. Queensland)

Jon Hutton (UNEP-WCMC)

Kathy MacKinnon (WCPA Deputy Chair)

Paul Matiku (NatureKenya)

Kent Redford (Archipeligo)

Yvonne Sadovy (University of Hong Kong)

Yoshihisa Shirayama (Kyoto University)

Jane Smart (IUCN)

Ali Stattersfield (BirdLife International)

Sue Stolton (Equilibrium)

Topiltzin Contreras MacBeath (Universidad Autónoma del estado de Morelos)

Justina Ray (WCS)

Ian Craigie, James Cook University

**Supported by a full-time IUCN staff position – Annabelle
Cuttlod and Diego Juffe**

**PhD students – Megan Barnes, Jonas Geldman and Luke
Harrison**

ABS and protected areas

Linkages, case studies, opportunities for cooperation

BIOPAMA Regional Workshop for the Pacific

4-6 February 2013, Novotel, Suva, Fiji

Dr. Andreas Drews, Manager

funded by



implemented by

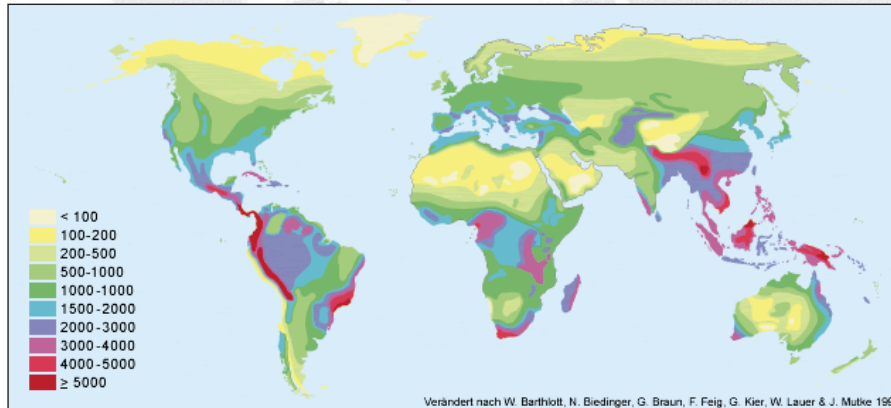


Overview

- Intro: ABS what is it and what is in it?
- Part I: Linkages between ABS and protected areas
- Part II: Case studies
- Part III: Opportunities for cooperation



Biological / Genetic resources - a tremendous potential under threat



Facts:

- only approx. 2 of 30 Mio species known
- ~ 26.000 species / annum extinct
- hotspots: Developing Countries (80 %)

-> not only an “altruistic” problem for nature conservationists but also of major impact for sustainable development in DC and IC

Focus: Medicinal plants and derivatives (Phytopharmaceuticals)


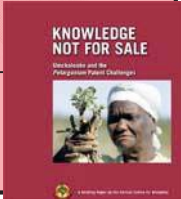
- World market US\$ 60 billion
- US, EU, Japan Imports US\$ 450 million (1999)
- Worldwide sale of medicinal plants US\$ 18 billion (2000)
- European market of medicinal / aromatic plants 2000 species (2004)
- Pharmaceutical products based on PGR: ~ 70-80%



Source: UNCTAD

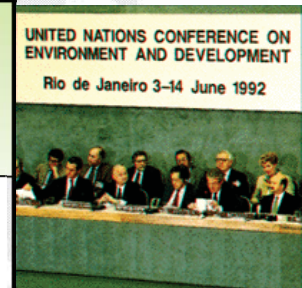
-> trade off / benefits for “provider-countries” of GR are generally neither legally regulated (nationally and internationally) nor realized

What ABS might (not) provide in Africa - 2 x 2 examples

Resource	Origin	Market	Benefits
Hoodia gordonii (succulent plant)	Southern Africa	3 bill US\$ in the US (anti-obesity prescriptions) Unilever patent licence from Phytopharm: 40 Mio US\$	8% milestone, 6% royalties About 100.000 US\$ to San; projected potential: 2 Mio US\$
Eragrostis tef (gluten free cereal)	Ethiopia, Eritrea	3 Mio US\$ by company HFPI only in NL	5% of net profits to Ethiopian Gov TT and CB from HFPI - domestic distribution unclear
Thaumatococcus daniellii (rainforest pant)	West Africa	900 Mio US\$ (in the US): sweetener based on (synthesized and GMO) Thaumathin	None 
Pelargonium sidoides (geranium plant)	Southern Africa	"Umckaloabo" turnover only in Germany 120 Mio US\$	None 

Convention on Biological Diversity, Article 1

1) Conservation of biological diversity	2) Sustainable use of its components	3) Fair and equitable sharing of benefits from the utilization of genetic resources
		via
Appropriate access to genetic resources	Appropriate transfer of technology and know how	Appropriate funding: <ul style="list-style-type: none"> • Up-front payments • Mile stone payments • Licence fees / royalties

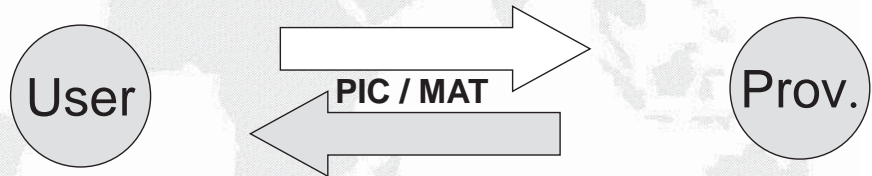


For the first time integration of biodiversity conservation and sustainable development in one UN-Convention



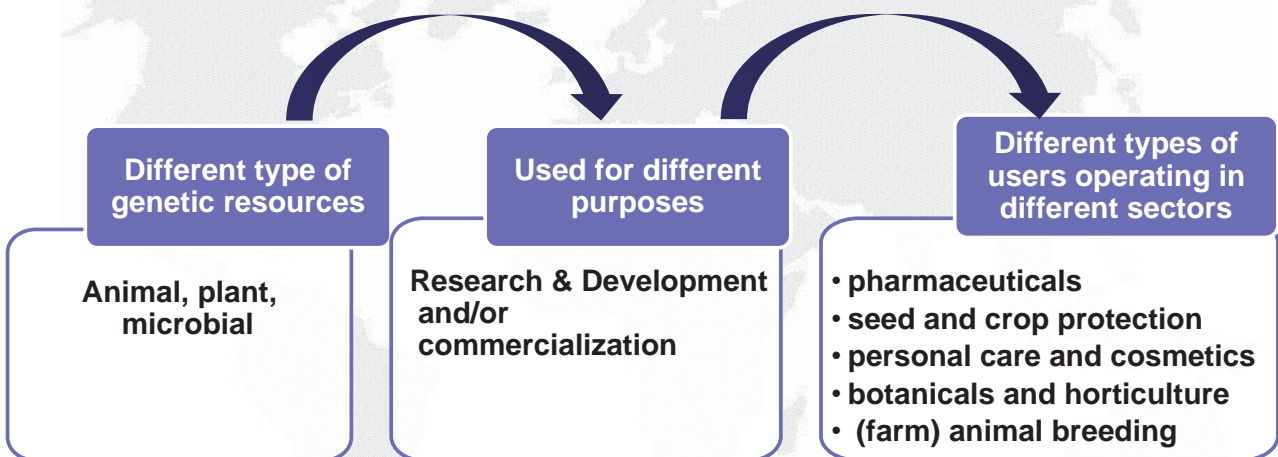
“Logic” of CBD regarding Access regulations

„resource-rich,, countries shall facilitate the access to genetic resources

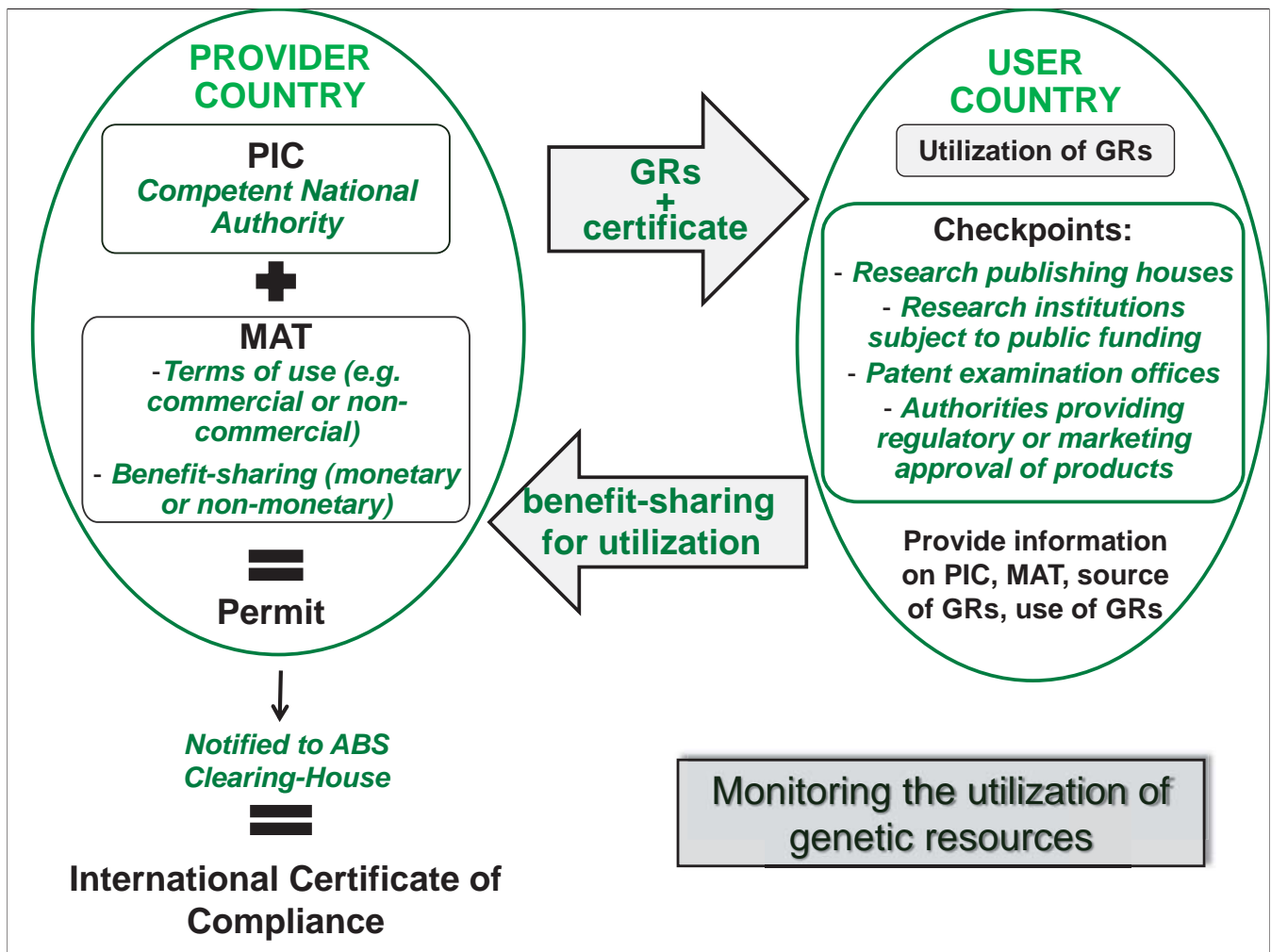


„technology-rich“ countries shall share benefits arising from GR; facilitate the access to technologies and means important for conservation and use

ABS – the concept



A large number of actors involved, rarely one provider and one user (e.g. intermediaries)



Access and Benefit Sharing

The ABS Capacity Development Initiative

Part I: Linkages between ABS & protected areas

- i. ABS & PAs share complementary regulatory frameworks
- ii. PAs can benefit from research & bioprospecting
- iii. ABS can contribute to conservation and sustainable use
- iv. Both frameworks face common governance challenges



i) ABS & PAs share complementary regulatory frameworks, both are addressed by the CBD Strategic Plan and Aichi Targets

CBD POWPA

- Goal 2.1: equitable sharing of costs and benefits of PAs
- Activity 2.1.6 highlights links between ABS and protected areas and recommends strengthening of those links through already established institutional structures
- However, in reality often insufficient assessments of social costs and lack of inclusion of all stakeholders in governance processes.

Nagoya Protocol

- Art. 5: benefit-sharing
- Art. 6: PIC & MAT
- Art. 7: traditional knowledge
- Art. 13: national focal points & competent authorities
- Annexure: examples of monetary and non-monetary benefits

Therefore: avoid conflicts and explore commonalities

- When implementing ABS, regulatory frameworks must avoid conflicts with existing PA frameworks and benefit from common goals
- Both, PAs and ABS share the ultimate goal of biodiversity conservation
- Nagoya Protocol legally binding – therefore powerful tool for PAs
- But can only be achieved if all actors involved in PAs, including indigenous peoples and local communities living are involved in governance processes and derive benefits in locally appropriate ways.

(ii) PAs can benefit from research & bioprospecting

- In many instances, bioprospecting relating to genetic resources and associated traditional knowledge which triggers ABS agreements occurs within Protected Areas.
- A review of recent literature on bioprospecting and use of biodiversity indicate that Protected Areas form the core of actions that link communities, conservation and customary use practices¹.
- The literature points to the critical importance of emerging Protected Areas management practices especially in dealing with issues of justice, ethics and equity².



(iii) ABS can contribute to conservation and sustainable use

- Triangle: nature conservation - poverty alleviation - governance
- Opportunity costs associated with conservation
- ABS is an (economic) incentive for conservation and sustainable use of biological diversity
- Shift from the top-down conservation methods
- The challenge here lies in effectively incentivizing large groups of people by ensuring that they derive some benefit from conserving resources



(iv) Both frameworks face common governance challenges

- Land and resource (utilization) rights
- Benefit sharing (esp. role of IPLCs)
- Permit allocation and access restrictions



- Variety of stakeholder thickets
- Understanding of local population



IUCN matrix: categories / governance types

Governance types	A. Governance by government			B. Shared governance			C. Private governance			D. Governance by indigenous peoples and local communities	
	Federal or national ministry or agency in charge	Sub-national ministry or agency in charge	Government-delegated management (e.g., to an NGO)	Transboundary management	Collaborative management (various forms of pluralist influence)	Joint management (pluralist management board)	Declared and run by individual land-owners	... by non-profit organizations (e.g., NGOs, universities)	... by for-profit organizations (e.g., corporate owners, cooperatives)	Indigenous peoples' protected areas and territories – established and run by indigenous peoples	Community conserved areas – declared and run by local communities
Protected area categories											
Ia. Strict Nature Reserve											
Ib. Wilderness Area											
II. National Park											
III. Natural Monument											
IV. Habitat/ Species Management											
V. Protected Landscape/ Seascape											
VI. Protected Area with Sustainable Use of Natural Resources											



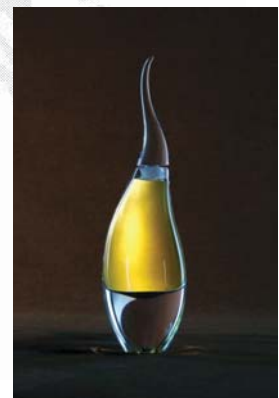
Case Study I : ABS & protected areas in Namibia

Hugely successful CBNRM movement

- 76 conservancies, 155.205 km², 234.400 people
- Poaching virtually eliminated
- 400 – 1.000% increase in wildlife
- Relocating game (including IUCN Red List spp.) from National Parks to Communal Conservancies
- Immense pride and sense of ownership



Case Study I: *Commiphora wildii*



Case Study I : ABS & protected areas in Namibia

ABS / Biotrade in Namibia: Indig. Nat. Products (INPs) and CBNRM

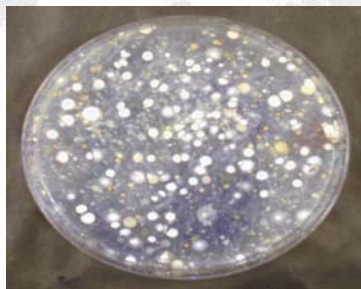
- Coordinated national process steered by multi-stakeholder Indigenous Plant Task Team (IPTT) with own (government) budget
- Agreed strategy and action plan, but implementation guided by flexible, market-driven responses
- Diversify income, especially in areas with lower wildlife and tourism potential
- Provide direct cash to women and marginalised people
- CBNRM groups are cost-effective collators and bulkers of raw material



Example: *Commiphora wildii* resin

- Traditional perfume
- ABS agreement signed – 10% premium for use of cultural imagery
- Heads of agreement with top-5 flavour and fragrance company – shared research results and technology transfer plan

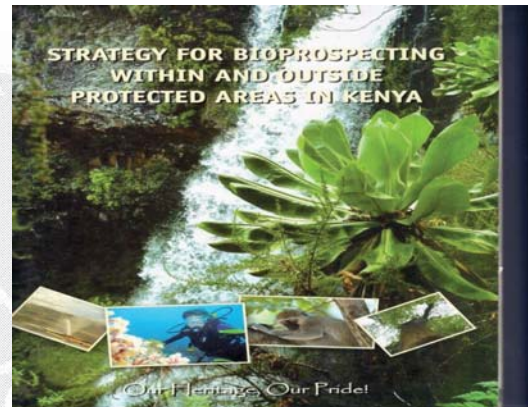
Case Study II: Enzymes and the Kenya Wildlife Service



BIOETHANOL

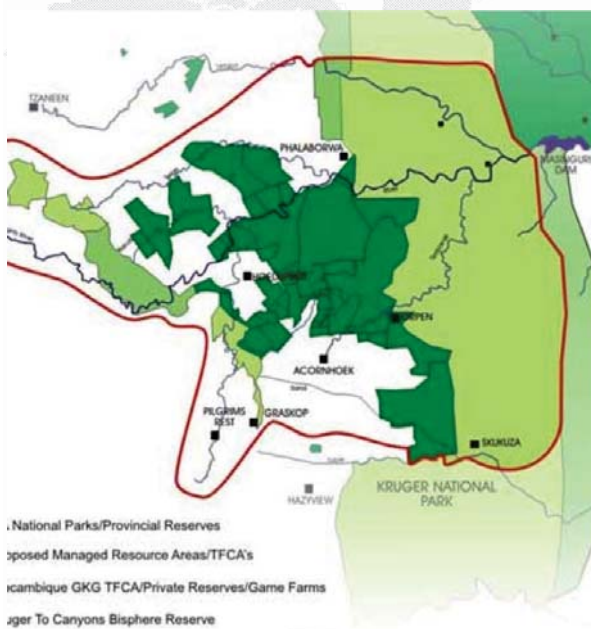
Case Study II: ABS integration into Kenya's Wildlife Service

2008 ABS legislation comes into force
2008 KWS creates a biotechnology
bioprospecting section
2011 Bioprospecting benchmarking & strategy
2012 Draft benefit sharing plan



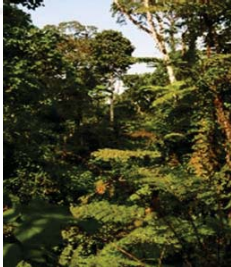
- Creation of Bioprospecting Fund
- Product development and marketing
- Research fund: 70% national government, 30% local community
- Share of transboundary resources
- Value addition on biotrade at the source is encouraged
- Certification principles for sustainable biotrade from the wild harvest outside protected areas
- Mechanisms for a fair and equitable benefit sharing on biotrade between providers and users monetary benefits: 15% to the national government, 20% county, 35% community, 30% venture company

Case Study III: Community and access protocols in South Africa



- Bushbuckridge Traditional Healers' Association - over 300 living within Kruger to Canyons (UNESCO) Biosphere Reserve
- Discussions with Mpumalanga Tourism and Parks Authority regarding a medicinal plants conservation area
- Degradation of local medicinal plant habitats
- Biopiracy
- Access to core zone
- Loss of land

Case Study III: Community and access protocols in South Africa



- Community Protocols
 - Who
 - Governance
 - Incentives
 - Certainty
- Access:
 - PIC
 - Entered into negotiations with local cosmetic company
 - Gained access to PA
 - Given land from traditional authority
 - Code of conduct on harvesting based on of customary laws
 - Sharing of TK amongst community

Part III
Next Steps & Opportunities for Cooperation

The ABS Capacity Development Initiative

ABS Capacity Development Initiative Expert Workshop

- 14-16 November in Eschborn, Germany
- ABS, PA and Forestry Experts exploring linkages in 5 Thematic Clusters:
 - Land / Resources Use Rights
 - Valuing Resources & Benefit Sharing Mechanisms
 - Regulations for Access and Permits
 - Standards and compliance in natural resource management
 - Overarching/Cross-cutting issues



The ABS Capacity Development Initiative

ABS Capacity Development Initiative Expert Workshop – Outcomes

- Prepare preliminary guidance for PA managers, Communities, Private partners & researchers, Communication
- Promote common approaches to:
 - a. consultation/FPIC
 - b. bio-cultural community protocols
 - c. types of access agreements
 - d. benefit-sharing mechanisms
 - e. reporting procedures
- Include a new title in the best practice guidelines and a learning network on ABS for PA Managers
- 2013, Fiji: 9th Pacific Islands Conservation Conference: opportunity to present and lobby
- 2014, Sydney: World Parks Congress: opportunity to present the topic/products and to learn from Australian experience



The ABS Capacity Development Initiative

Steps to facilitate funding possibilities through private sector investments



- Institutions currently involved in permitting access to the PA need to cooperate
- Assessment of legal framework
- Multi-Stakeholder WS to present and discuss ABS options for the PA
- Establishing reliable legal regulations regarding access to and benefit sharing for the PA
- Establishing one competent ABS authority ("One-stop-shop")
- Linking ABS and CSR - Developing options for ecosponsoring / ecolabeling (CSR) as a marketing add-on together with bioprospecting enterprises

The ABS Capacity Development Initiative

ABS Initiative & BIOPAMA - Concrete Opportunities for Cooperation

- Single out the linkages between the provisions of the NP and PoWPA Element 2.
- Ensure effective coordination between PoWPA focal points and ABS focal points and competent authorities in drafting Protected Area-ABS policies at Protected Area system-level, involving all stakeholders.
- Link ABS national frameworks with Protected Area management plans
- Individual national park managers may develop their own regulating bodies in consultation with Indigenous and Local Communities (Indigenous peoples and local communities), based on Protected Area system-level policy.
- Enhance awareness of issues of ethics, equity and governance within the Protected Area stakeholder community - more inequality, more biodiversity loss
- Develop endogenous capacities and know-how for Protected Area managers, Indigenous peoples and local communities and ABS as management principles of Protected Areas.
- Identify and assess best practices, case studies, and model contractual clauses.

Thank you

.....more on ABS and the
ABS Capacity Development Initiative

-> *brochure "local to global"*

-> *www.abs-initiative.info*

funded by




implemented by




BIOPAMA

Our Approach to Capacity Development



Presented by: Jordi Surkin
IUCN GPAP
Oceania Regional Workshop
February 4-6, 2013, Lami, Suva



Access and Benefit-Sharing
The ABS Capacity Development Initiative




European Commission

Johannes Research Centre • Site di Iqora

BIOPAMA

Background

- Existing human and institutional capacity in ACP countries is limited
- Approaches for deal with the issues of conservation, sustainable use of biodiversity and climate change are uncoordinated.
- Capacity building efforts in ACP have not wholly addressed needs directly linked to the main threats to PAs.



Access and Benefit-Sharing
The ABS Capacity Development Initiative

European Commission

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BIOPAMA


BIOPAMA Capacity Development

Overall Objective

To ensure that capacity building programmes in ACP countries make an effective contribution to enhance the training institutions, decision makers, managers and key NGOs for better decision-making leading to the effective planning and management of protected areas.

Specific objectives:

- Capacity building programs are fully tailored to regional conditions, including addressing the main threats to PAs, targeting relevant decision makers and addressing regional priorities.
- Develop and widely distribute relevant training materials that address identified priority needs.
- To increase the level of excellence of at least one regional training centre per region by updating their curricula, providing technical tools and methods and strengthening regional networks






Joint Research Centre • Sito di Ispira

BIOPAMA

BIOPAMA Capacity Development Approach

- 1) Addressing priority needs that enable better decision making
- 2) Work at multiple scales from PA, to landscape to national level using various modalities
- 3) Ensure sustainability and scale up impacts
- 4) Capacity Building actions that benefit a diversity of actors
- 5) Promotion of learning and adaptation

Joint Research Centre • Sito di Ispira




BIOPAMA BIOPAMA Capacity Development Approach

Addressing priority needs that enable better decision making

- Focus on key threats to PAs as well as those stakeholders who most influence threats
- Beneficiaries of CB may be PA managers or staff in the national system as well as key decision makers
- Also need to address capacity gaps related to the regional information system to be developed by JRC

This will be achieved by:

Building on regional priorities as defined by key stakeholders and on existing assessments and documents.

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BIOPAMA

Work at multiple scales from PA, to landscape to national level using various modalities

- CB actions from the site to national and regional levels.
- Address regional capacity needs as well as more specific national and site needs.
- PAs will be viewed as part of a broader landscape
- Target decision-making at multiple scales including the landscape level.

This will be achieved through:

- Utilization of a combination of capacity building modalities.
- Development and testing of tools and best practice guidance, to address priority needs.



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BIOPAMA

Ensure sustainability and scale up impacts

CB resources in BIOPAMA are limited. To ensure sustainability we will focus on enabling training centres to replicate training and CB beyond the life of the programme.

This will be done through:


- **Development of curricula and strengthening of regional networks.**
- **Increasing the level of excellence** of at least one regional training centre in each region
- **Providing stakeholders with technical tools and methods**
- **Maximizing the use of regional experts** and developing a pool of experts that could be used after the life of this project.



BIOPAMA

Capacity Building actions that benefit a diversity of actors




- **The direct beneficiaries will be regional and national institutions in charge of PAs management, and PA managers.**
- **The indirect beneficiaries will be national & regional schools, colleges and universities carrying out the training of PA managers.**
- **The ultimate beneficiaries will be local communities living in or around existing protected areas.**



BIOPAMA

Promotion of learning and adaptation

- Documentation of lessons and adaptation of approaches over the life time of BIOPAMA.
- Lessons and best practice utilized to guide capacity development actions
- Key lessons learned could also inform the design of a global capacity development initiative led by IUCN GPAP, WCPA and others.

Access and Benefit Sharing
The ABS Capacity Development Initiative


European Commission

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BIOPAMA

BIOPAMA Capacity Building Activities for the Pacific

- 3 regional training courses
- Technical assistance to governments on priority issues.
- Testing of tools in selected sites (such as: governance tool kit, ICCA tool kit, management effectiveness)
- Curricula development and support for regional training centre. (WCPA curricula development/professionalization and e-book)
- Best practice guidelines adapted to regional needs. (WCPA)
- Learning exchanges on selected priority issues.



Access and Benefit Sharing
The ABS Capacity Development Initiative

European Commission

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BIOPAMA

Developing capacity for a Protected Planet

**Thanks for your
attention**



www.iucn.org/biopama
biopama@iucn.org



Aims of today's morning session

Scope the BIOPAMA Reference Information System for the Pacific

- What key needs should it address
- Who are the real stakeholders in the region
- What are the relevant standards that need to be considered
- What are the specific steps needed in the next 6-12 months



Capturing user requirements for the Regional Reference Information System of BIOPAMA

BIOPAMA TEAM

biopama@jrc.ec.europa.eu

Aim

BIOPAMA



- BIOPAMA aims at supporting the provision and exchange of **information** for conserving biodiversity and managing protected areas.

Aim

BIOPAMA



- BIOPAMA will support the development of a **Regional Reference Information System (RRIS)** with tools for:
 - accessing and leveraging information
 - information and data analysis
 - generating and reporting indicators



Information lifecycle

Share

- Harmonization
- Willingness to share
- Licensing
- Infrastructure
- Human capacity

Analyse

- Tools
- Infrastructure
- Human capacity

Use

- Willingness to use
- Need to use
- Quality
- Infrastructure
- Human capacity

Store

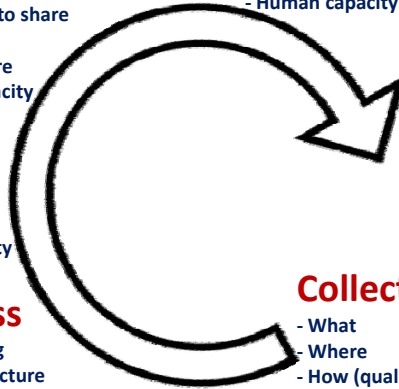
- Infrastructure
- Standards
- Human capacity

Access

- Licensing
- Infrastructure
- Human capacity

Collect

- What
- Where
- How (quality, completeness, format)
- Human capacity



Information lifecycle

Share

- Harmonization
- Willingness to share
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Analyse

- Tools
- Infrastructure
- Human capacity

Use

- Willingness to use
- **Need to use**
- Quality
- Infrastructure
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Store

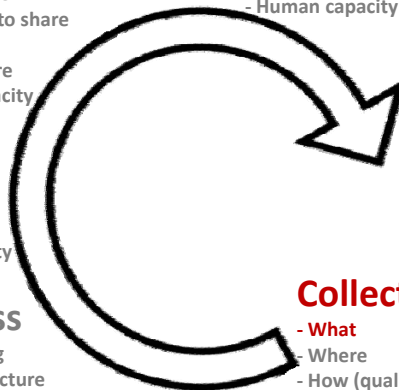
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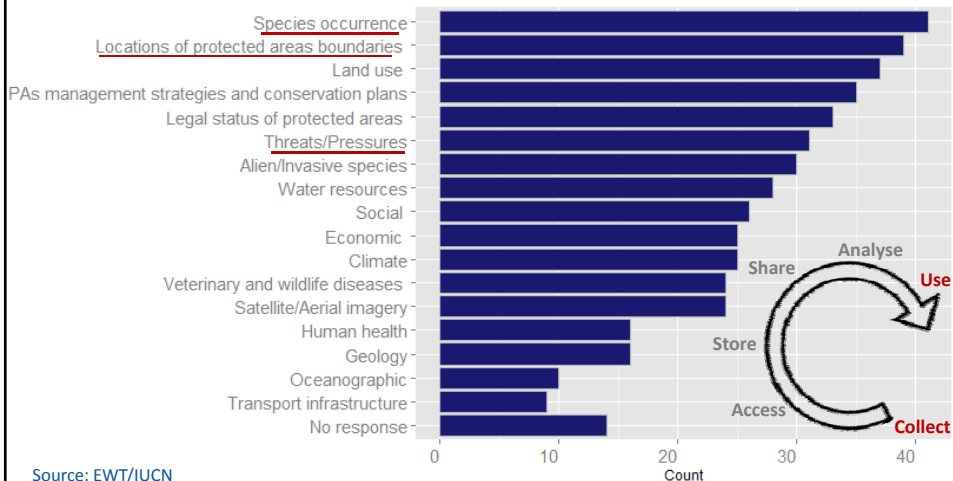


What to collect?

BIOPAMA



Relevant information for PA management

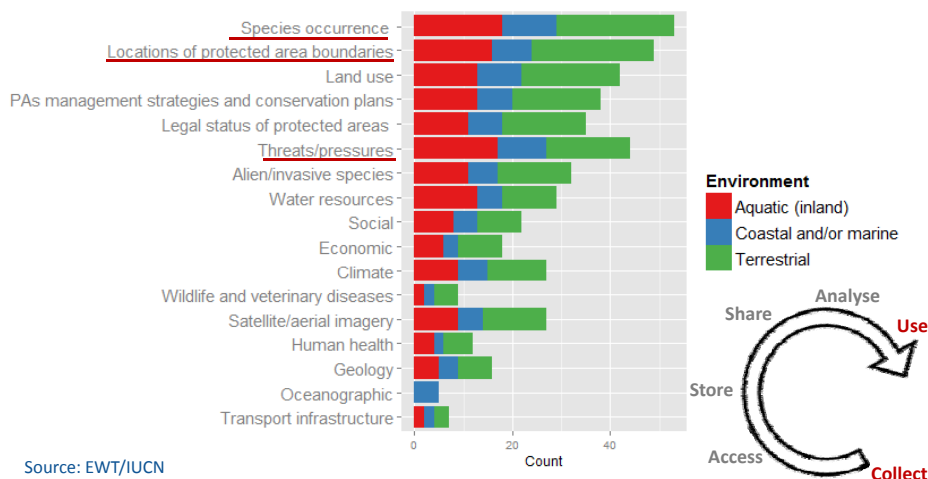


Where to collect?

BIOPAMA



Relevant information for PA management





Information lifecycle

Share

- Harmonization
- Willingness to share
- Licensing
- Infrastructure
- Human capacity

Store

- Infrastructure
- Standards
- Human capacity

Access

- Licensing
- Infrastructure
- Human capacity

Analyse

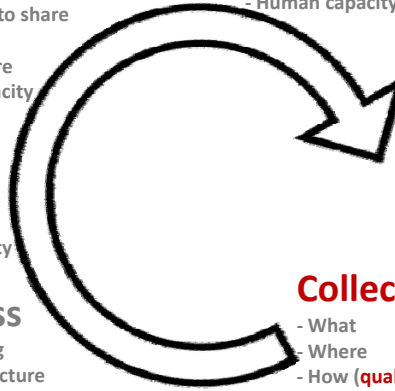
- Tools
- Infrastructure
- Human capacity

Use

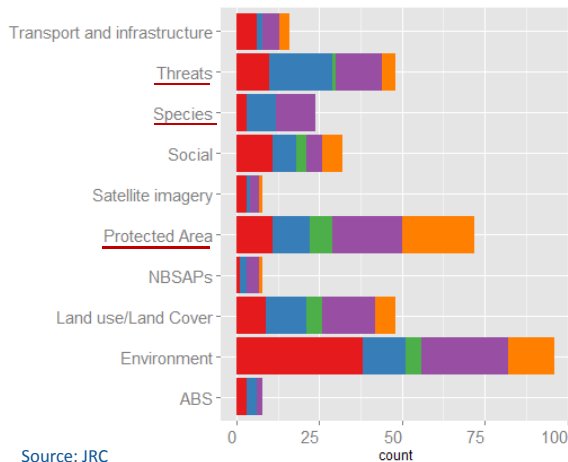
- Willingness to use
- Need to use
- **Quality**
- Infrastructure
- Human capacity

Collect

- What
- Where
- How (**quality**, completeness, format)
- Human capacity



What is the quality?



Source: JRC



Quality

- a_No_response
- b_Contains_inaccuracies_incomplete
- c_Contains_inaccuracies_complete
- d_Accurate_but_incomplete
- e_Accurate_and_complete



Information lifecycle

Share

- Harmonization
- Willingness to share
- Licensing
- Infrastructure
- Human capacity

Store

- Infrastructure
- Standards
- Human capacity

Access

- Licensing
- Infrastructure
- Human capacity

Analyse

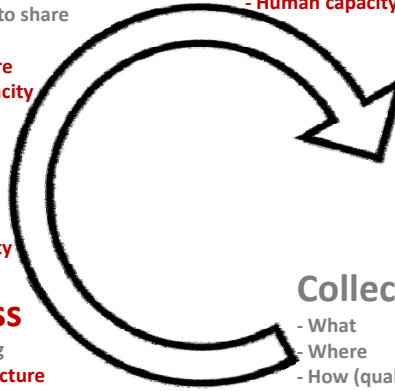
- Tools
- Infrastructure
- Human capacity

Use

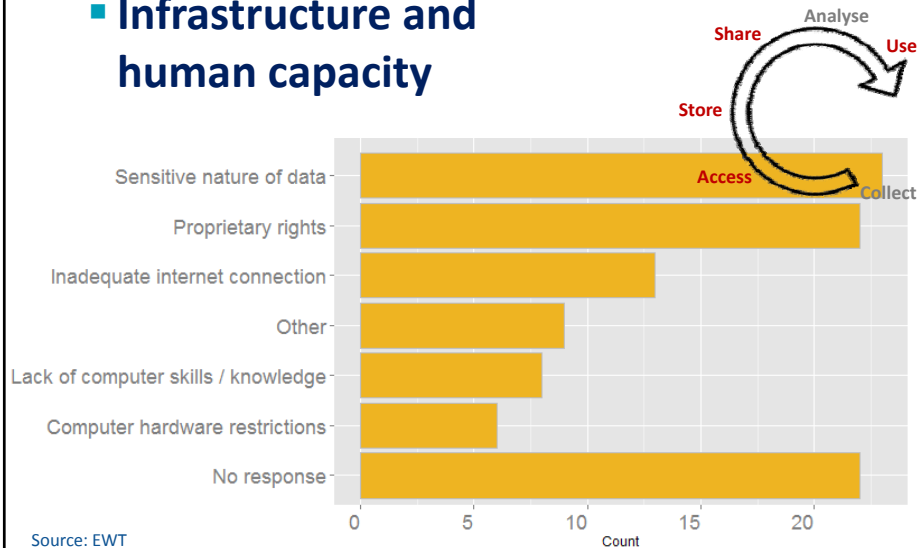
- Willingness to use
- Need to use
- Quality
- Infrastructure
- Human capacity

Collect

- What
- Where
- How (quality, completeness, format)
- Human capacity



Infrastructure and human capacity



Source: EWT



Information lifecycle

Share

- Harmonization
- Willingness to share
- Licensing
- Infrastructure
- Human capacity

Analyse

- Tools
- Infrastructure
- Human capacity

Use

- Willingness to use
- Need to use
- Quality
- Infrastructure
- Human capacity

Store

- Infrastructure
- Standards
- Human capacity

Regional Reference Information System

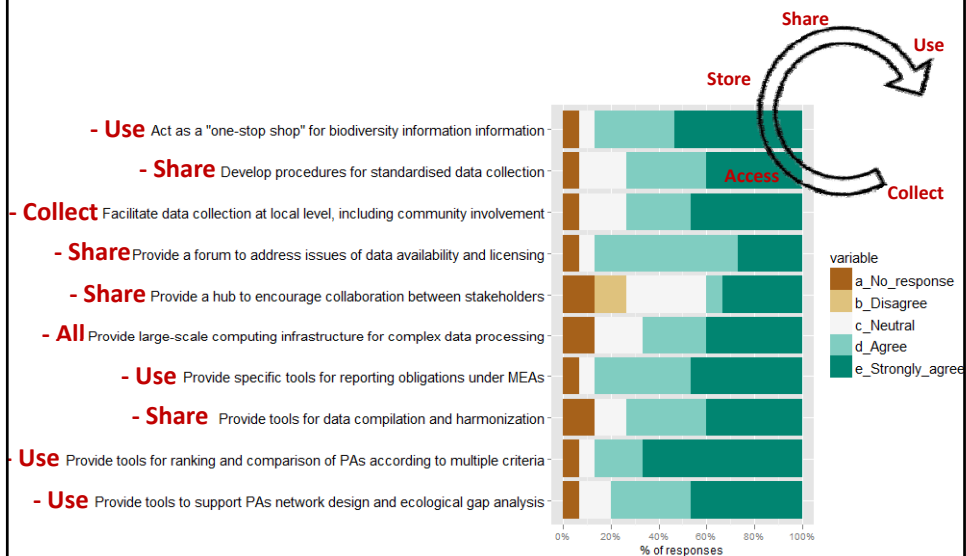
Access

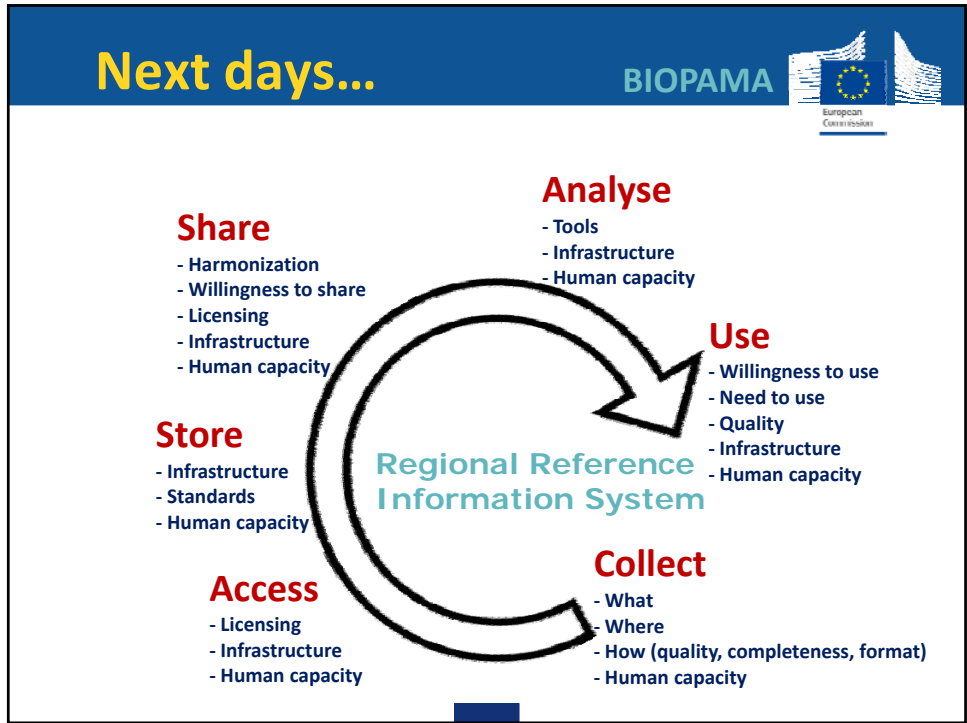
- Licensing
- Infrastructure
- Human capacity

Collect

- What
- Where
- How (quality, completeness, format)
- Human capacity

Roles of the RRIS





Data standards

Which are the key data standards in use in the region?

Which are you not familiar with?



Stakeholder mapping

Long term involvement in BIOPAMA

Roles and expectations

Pilots over next 12 months

What is needed to secure their involvement?

Regional Vision for a Reference Information System

Priority Use Cases

- **Use the actors/stakeholder mapping**

Generic Functions it should perform

In/Out of Scope

Key data sources



From the questionnaire

PA Network Design and ecological gap analysis

High performance computing

A hub for collaboration

Forum to address data sharing

Tools for data compilation

Standardised data collection

PA ranking and comparison

Local data collection / use

One stop shop for biodiversity information



Landcare Research
Manaaki Whenua

BIOPAMA An assessment of databases in Oceania

Jerry Cooper – Landcare Research, New Zealand
Shyama Pagad – Auckland University
Alan Saunders – Landcare Research, New Zealand

Assessment Covering ...

1. Review the needs statements
2. Identify data resources
3. Capture characteristics of resources
 - data content, data mgmt., standards, access etc.
4. Options for data access/data-sharing

Caveats & Status

- Work in progress
- Limited total time for assessment
- With primary biodiversity data focus (bias)
- So far looked at ...
 - 1 Identify priority needs (Shyama)
 - 2/3 Sources & characteristics
 - Currently just a detailed case study of GBIF data
 - 4 Overview of technologies, standards and options

The Big Questions

informing the analysis

- What do we mean by Biodiversity Data?
- What do end-users **really** need?
 - satisfying real needs at local-level not always apparent in current IT bio-data work programmes
- What kinds of information do we have?
- What are the data-
discovery/sharing/access issues?

What do we mean by Biodiversity data?

1. Primary biodiversity data
2. Synthesised biodiversity data/information
3. Contextual & proxy data/information

The generalised data/information pipeline:

primary-data → *synthesis* : *dissemination* → *assessment* → *response*

1: Primary Data

Type1: Taxonomically motivated specimen/observation
(research or discovery oriented)

- registering presence only, one-off, mostly without an associated area-survey protocol

Type 2: Ecological/biosecurity motivated survey/monitoring
(research and operationally oriented)

- registering presence/absence according to a survey protocol
- addressing need status/trend statistics
- usually area-bound + time-series + abundance ...
- often capturing ancillary site-based biological trait and environmental variables

Data Issues:

- A lot of Type1 data – largely undigitised but relatively easy to locate/access/share
- Less amount of Type2 data – hard to locate/access/share but greater value

2: Synthesised biodiversity data/information

Examples:

- synonymic species checklists (including local vernacular names)
- species descriptions, keys, range maps and thematic data
- threat & risk status assessments
- identification of ecosystem assemblies, and changes over time
- species management criteria/assessments

Data Issues:

- Spectrum of structured/managed data in databases to unstructured/unmanaged/undigitised 'documents'
- Requires multiple solutions for discovery/access/sharing
- Often 'non-fungible' with other data

3: Contextual & Proxy data/information

Examples:

- Land classifications
- Land use & land use change
- Spatial and non-spatial environmental variables and layers (climate, soil, hydrology etc.)

Issues:

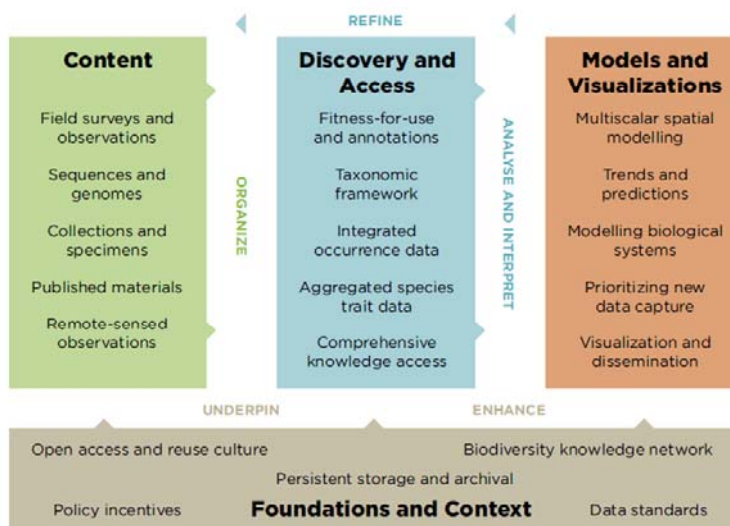
- wide range of data types
- open access is often an issue
- data sharing facilitated by GIS technology/standards

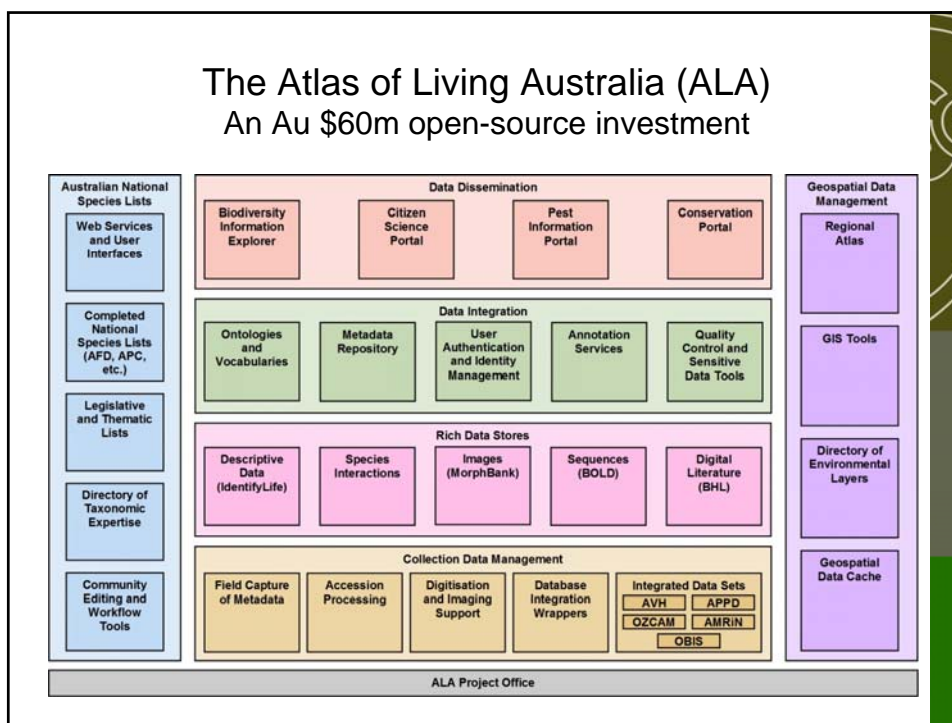
Relevant IT Standards

gross simplification!

- Open Geospatial Consortium
 - comprehensive GIS interoperability framework, spatial focus, but broadening (WFS, WMS, Catalogue Services, O&M ...)
- Standards from other domains (especially TDWG for bio-data)
 - data-set description (metadata)
 - Dublin Core, ANZLIC ...
 - data 'field content' (vocabularies)
 - e.g. species checklists, ISO standards, gazeteers...
 - data 'record content'
 - Darwin Core, Ecological Metadata Language, ABCD ...
 - data structure/data transfer (XML Schemas/ ontologies)
 - DarwinCoreArchive, VegX, ...
 - data communication protocols
 - REST/SOAP, OAI-PMH, TAPIR, DiGIR... acronym soup!

The Global Biodiversity Informatics Outlook Framework (GBIO)





Some options for improving the Oceania-wide 'data pipeline'

1) Regional metadata clearing-house

- standardised high-level descriptive information on what resources exist, where, containing what data?
- not done as a one-off, time-bound exercise but an on-going, resourced activity
- using a federated network to automate data-collection/integration where possible
 - i.e. data automatically 'pushed' to the Clearing House by providers, not screen-scraped/pulled by the Clearing House

Some options for improving the Oceania-wide 'data pipeline'

2) Regional federated primary-data network

- programme for digitising and federating **Type1** data using existing technologies
 - i.e. the GBIF approach
- prioritise and work towards interoperable standards and systems for sharing **Type2** data
 - an emerging programme supporting GEO-BON->IPBES

Some options for improving the Oceania-wide 'data pipeline'

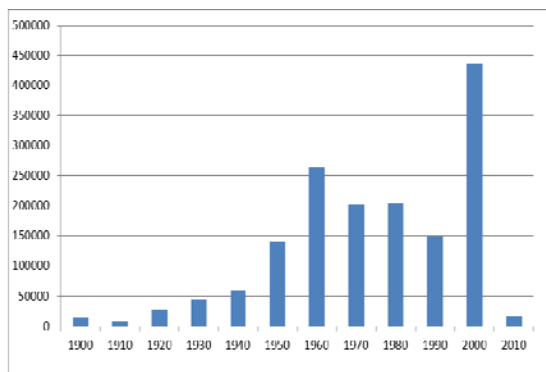
3) Regional bio-data/information discovery/delivery centre

- Function as a CHM + GBIF Node + GEO-BON/IPBES centre ... (c.f. ASEAN Centre for Biodiversity)
- Managed within the region and providing tech/standards support for the region
- Providing the hub for metadata/primary data federation and integration
- Providing a repository of synthesised/contextual information (acquired manually and via GIS networks)
- Providing the single point of access 'portal'

A Case study – GBIF data

GBIF: 37 member countries, 400m records, 10k databases

What primary data does the GBIF federated data network already mobilise for species in the PICTs?



- 2 million records (exc. Hawaii & rim)
- 45% animals, 11% plants
- 70% geo-referenced
- 30% of data collected since 1990
- data from 27 countries (outside region)
- data from 116 different sources

A Case study – GBIF data

Where is the data coming from?

Country	Records	Publisher	Dataset	Records	Percentage
United States	698,217	Discover Life	Fiji Terrestrial Arthropods	268698	13.90%
Australia	341,386	National Herbarium of New South Wales	Plants of Papua New Guinea	162224	8.40%
France	142,545	Bernice Pauahi Bishop Museum	Bishop Museum Natural Sciences Data	98664	5.10%
Germany	711,93	Museum of Comparative Zoology, Harvard University		95005	4.90%
Netherlands	44,491	Australian National Herbarium (CANB)		82683	4.30%
Switzerland	23,782	Australian Museum	Australian Museum provider for OZCAM	82108	4.20%
New Zealand	19,712	National Museum of Natural History, Smithsonian Institution	NMNH Invertebrate Zoology Collections	71593	3.70%
Canada	15,574	FishBase		71495	3.70%
Sweden	14,713	MNHN - Museum national d'Histoire naturelle	Phanerogams herbarium specimens	62532	3.20%
Belgium	12,135				
Japan	73,95				
Denmark	10,17 ...				

GBIF – currently a small percentage of primary data

Example of data-mining the digital literature

PICT	Total recorded mushroom species names (literature + GBIF)	Number of names from GBIF
Papua New Guinea	1403	257
Hawaii	817	
New Caledonia	601	32
Solomon Islands	475	209
Samoa	362	41
Fiji Islands	290	46
Federated States of Micronesia	247	36
Bonin Islands	224	
French Polynesia	192	39
Marshall Islands	102	27

Preliminary Conclusions

- Metadata collation (this project) needs to be an on-going function and part of an integrated approach to regional bio-data management
 - otherwise incomplete, dated, biased
- Primary data feeds the information pipeline – even if apparently remote from the priority 'synthesised products'
 - increasing requirement for auditable 'evidence-base'
- Oceania needs an information Clearing House, federated data-networks, and centre of informatics expertise
 - which will promote standards ... promoting interoperability ... promoting data sharing, discovery and uptake
- Issues are not instantly fixable – dependent on funding, willingness ...
 - good governance/operational models and 'free' technical frameworks exist (ALA, ASEAN CHM etc)

END

Standards

Data Standards – Why?

- Standards allow different data sets to be more easily shared/integrated
- That means local data can add to the national picture, which can add to the regional/global picture
- Standards allow 'applications' to more easily read and use data
- 'Applications' can be 'web-services' allowing computers to talk to each other
- That means we can knock-down the walls between current isolated silos of data on the web
- That means we can build powerful web 'mashups' combining data and analyses from multiple distributed sources (LEGO)
- Use of standards have knock-on effects for improving data quality



GBIF Tools

GBIF Tools

An index to tools brought to you by the Global Biodiversity Facility.

[Darwin Core Archive Assistant](#)
[Darwin Core Archive Validator](#)
[Spreadsheet Processor](#)
[Darwin Core Archive Registration Form](#)
[GBIF Resource Browser](#)
[Taxon Tagger](#)
[Name Parser](#)
[Name Finder](#)
[Text Extraction Service](#)
[Glossary](#)
[GPAAMP Demo](#)

Darwin Core Archive Assistant

The Darwin Core Archive Assistant is a web application that presents a simple interface for describing the data elements a data publisher wishes to serve to the GBIF network, as basic text files and composes the appropriate XML descriptor file as defined in the Darwin Core Text Guidelines to accompany them. It communicates with the GBIF registry to provide an up-to-date listing of all relevant Darwin Core terms and available extensions and presents these in a simple checklist format.

The **Darwin Core** is a body of standards that include a set of terms relating to taxa and their occurrence in nature, and a set of practices regarding the use of these terms in the publication of biodiversity data and information. GBIF has adopted a text-based solution for using Darwin Core that both simplifies and extends the publication of species and species-occurrence data. This format is referred to as a Darwin Core Archive (DWCA) and provides a relatively non-technical option for publishing biodiversity data that does not require complicated installations of data publication software. Darwin Core Archives can be published via a simple web address or URL.

- <http://tools.gbif.org/spreadsheet-processor/>
- [GBIF Darwin Core Spreadsheet](#)

Relevant bio-data IT Standards

gross simplification!

- **Open Geospatial Consortium (OGC)** – GIS based standards
 - Web Feature Service (WFS), Web Mapping Service (WMS), Catalogue Services, Observation & Measurement, ...
- Bio-data standards (but often with x,y,z,t components)
- Key standard provider: **TDWG-Biodiversity Information Standards**
 - data description (metadata)
 - **Dublin Core**, ANZLIC ...
 - data 'field content' (vocabularies)
 - species name checklists, **ISO** standards (countries..), placename gazeteers
 - data 'record content'
 - **Darwin Core (GBIF), Ecological Metadata Language (LTER)**, Access to Biological Collection Data ...
 - data structure/data transfer (XML Schemas/ ontologies)
 - DarwinCoreArchive, VegX, ...
 - data communication protocols
 - REST/SOAP, Open Archives Initiative-Protocol for Metadata Harvesting (OAI-PMH), Tdwg Access Protocol for Information Retrieval (TAPIR), Distributed Generic Information Retrieval (DiGIR)

and ...

- What survey standards?
 - list the names of published standards
 - in terrestrial and marine environments
 - for vegetation/mammal/bird/coral/fish...
- What taxonomic data standards?
 - sources of species lists? Identification aids?
- What land classification standards ?
 - list the names of published standards
 - vegetation/ecosystem types, environmental domains etc.?

The IUCN/UNEP World Database on Protected Areas

Colleen Corrigan
Senior Programme Officer
Protected Areas



BIOPAMA Regional Workshop for the Pacific

5-7 February 2013



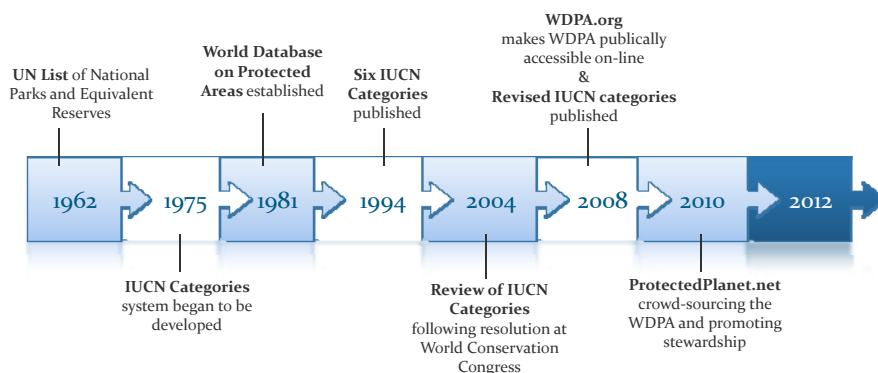
United Nations Environment Programme World Conservation Monitoring

- ❖ Provide biodiversity-related services that support decision-making
- ❖ Strengthen capacity
- ❖ Cambridge, UK
- ❖ 9 programmes with over 90 scientific and technical staff

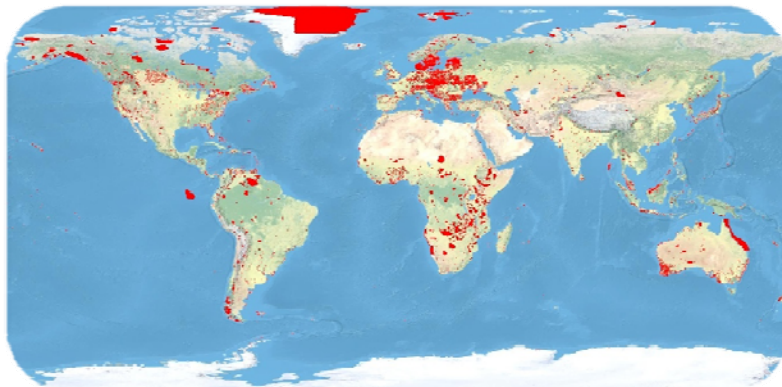
“A World Where Biodiversity Counts”



The WDPA: A joint IUCN/UNEP initiative



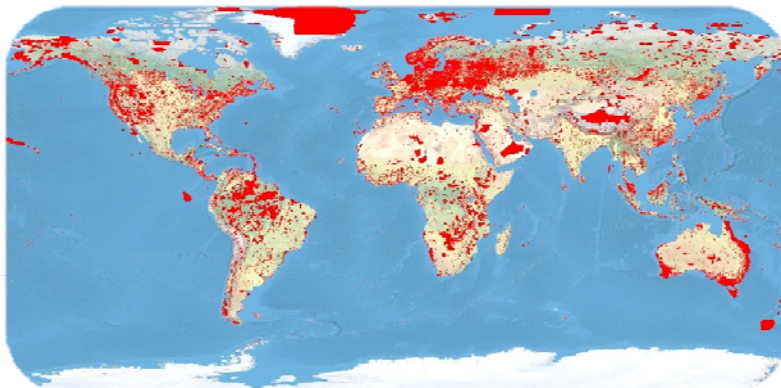
The WDPA is a baseline data set with a 50+ year history...



1981: 40,000 protected areas covering 7,000,000 km²



...and has emerged as the authoritative global inventory of PAs



2012: 200,000+ protected areas covering 12% of the world



Through Protected Planet the WDPA is interactive and searchable

1. Improve data quality
2. Add context
3. Improve search functionality
4. Enable interoperability



protectedplanet.net



International Mandates

- United Nations
- World Parks Congress
- Convention on Biological Diversity
- IUCN World Conservation Congress



BIOPAMA Regional Workshop for the Caribbean's

22-24 January 2013

WDPA in Practice

GIS Mapping & Analyses / Integration with other data sets

Data Sets

- IUCN Red List
- Global Biodiversity Information Facility
- WWF Ecoregions
- Socioeconomic Data
- Population Data
- Management Data

Analysis

- Gap Analysis
- Coverage Analysis
- Assessments
- Fire & Resource Management



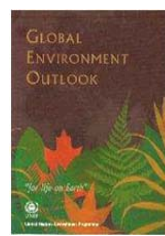
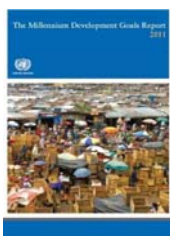
BIOPAMA Regional Workshop for the Caribbean's

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WDPA in Progress

Tracking progress toward targets and goals of MEAs

- Millennium Development Goals (Goal 7)
- CBD Aichi Target 11
- Global Biodiversity Outlook
- Global Environment Outlook



BIOPAMA Regional Workshop for the Caribbean's

22-24 January 2013

Protected Planet Report 2012

Tracking progress towards global targets for protected areas



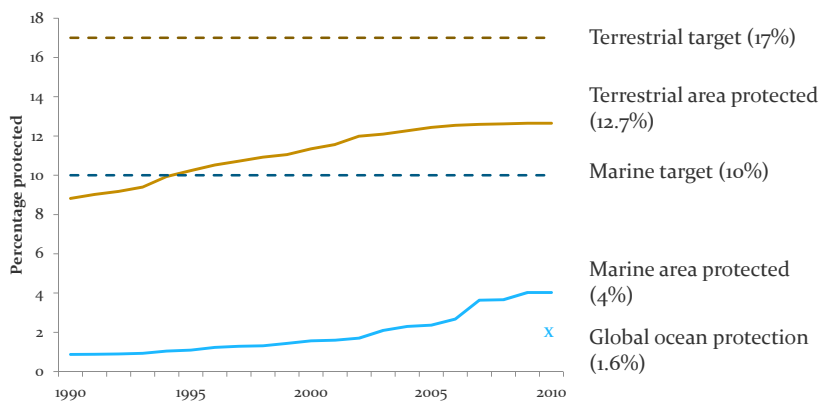
- Aichi Target 11
- Summarizes status and trends
- Builds on protected area indicators (BIP)
- Biennial series
- English, French and Spanish online:
www.unep-wcmc.org



BIOPAMA Regional Workshop for the Caribbean's

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Global protected area coverage for Aichi targets...



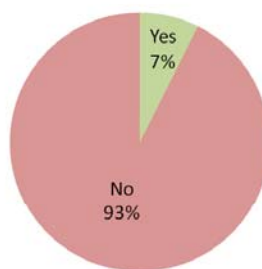
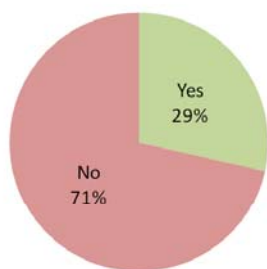
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... few countries meet the targets so far – so we expect the WDPA to grow

17% terrestrial (n = 228)

10% marine (n = 175)

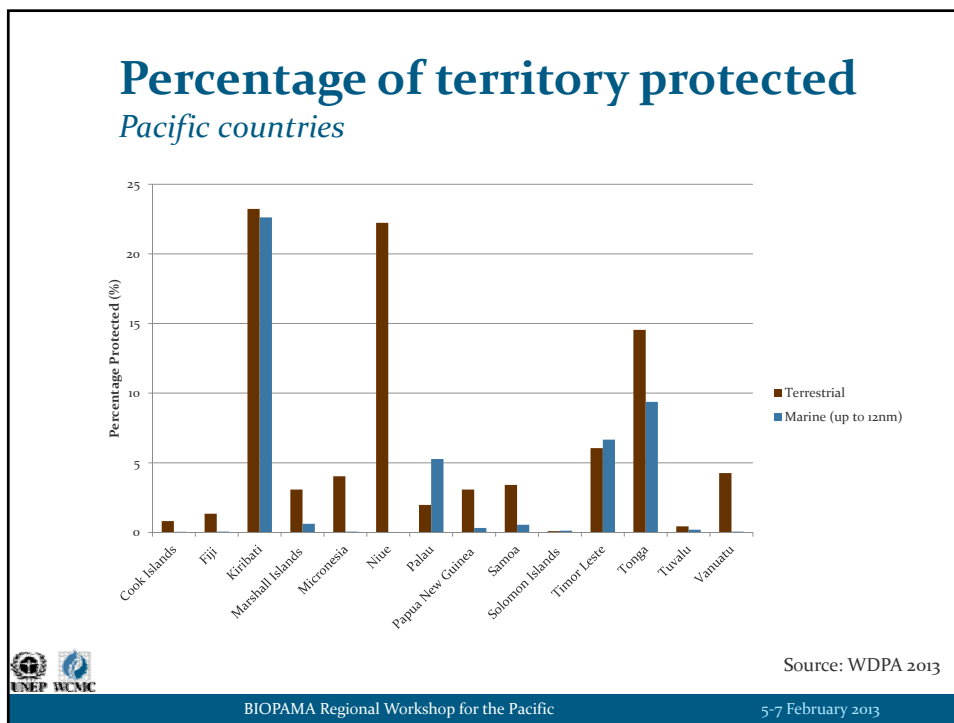
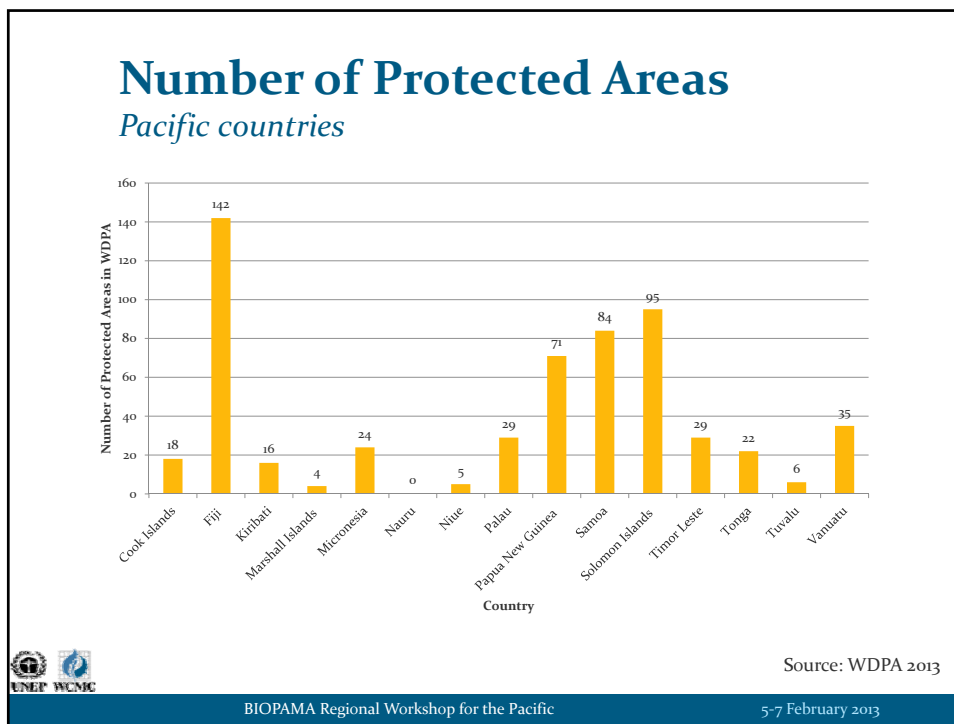


Note: Global % targets are not necessarily applicable to national level. The pie chart for marine protection refers only to marine area under national jurisdiction (0-200 nautical miles).



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Good Quality is achieved through Standards, Updates and Validation

- **Standards setting:** WDPA Data Standards
- **Updates:** Aim to update every country in the world every five years
- **Validation:** Expert Reviews, World Commission on Protected Areas (WCPA), Stakeholder Engagement

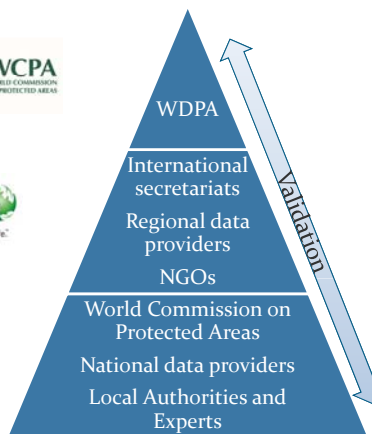


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WDPA Data Providers and Partners

UN List, Memorandums of Cooperation and other Agreements



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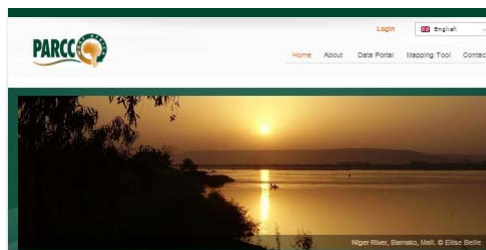
22-24 January 2013

Projects/Synergies

- Governance
 - ICCA's
 - Private PAs
- Management Effectiveness and Social Assessments
 - SAPA, PAME
- Climate Change & Resilience
 - PARCC
- Biodiversity Indicators
 - Global BIP Partnership



<http://www.iccaregistry.org/>



<http://www.parcc-web.org/parcc-project/>



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22-24 January 2013

Increasing attention to community governed and private areas



BIOPAMA Regional Workshop for the Pacific

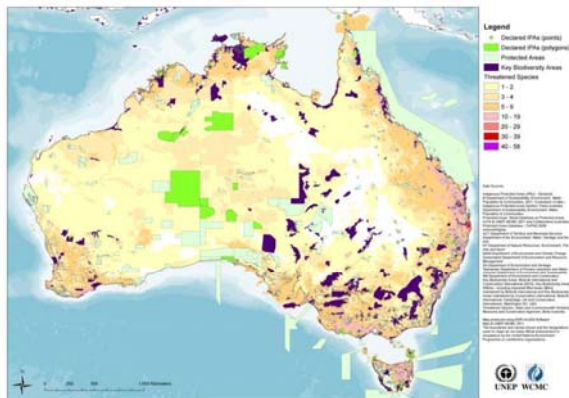
5-7 February 2013

Communities play a key role

Governance Type	A. Government Managed Protected Areas			B. Co-managed Protected Areas			C. Private Protected Areas			D. Community Conserved Areas	
IUCN Category (management objective)	Federal or national ministry or agency in charge	Local/municipal ministry or agency in charge	Government delegated management (e.g. NGO)	Transboundary conservation (involving state agencies & others)	Collaborative management (various forms of pluralist influence)	Joint management (pluralist management board)	Declared and run by individual landowner	...by non-profit organisations (e.g. NGOs, universities, etc.)	...by for-profit organisations (e.g. individual or corporate land-owners)	Declared and run by indigenous peoples	Declared and run by local communities
I - Strict Nature Reserve/Wilderness Area											
II - National Park (ecosystem protection; protection of cultural values)											
III - Natural Monument											
IV - Habitat/Species Management											
V - Protected Landscape/Seascape											
VI - Managed Resource											



Community contribution to Protected Areas- an example from Australia



Building capacity for area-based community conservation:

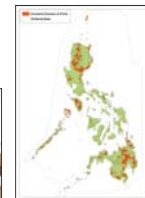
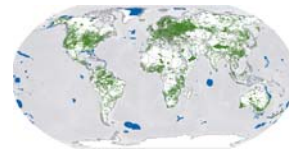
ICCA Registry & Toolkit



ICCAs and Aichi Target 11

By 2020, at least 17 (at 12.7) per cent of terrestrial and inland water areas, and 10 (at 4.0/1.6) per cent 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.

How do we measure this?



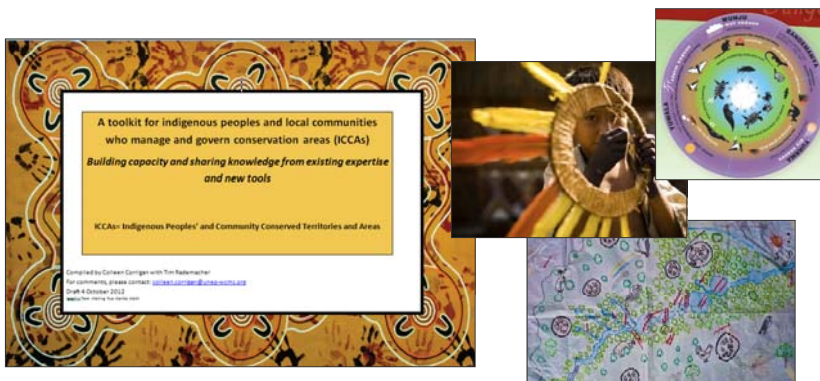
ICCA Global Registry

- www.iccaregistry.org
- Originated in 2009
- Includes spatial focus
- Supports international recognition
- Documents biodiversity and other values
- Provides evidence to inform decisions



Toolkit for Indigenous Peoples and Local Communities

(to be launched in May 2013)



Thank you!

Colleen.Corrigan@unep-wcmc.org

(and the Protected Areas team)



International Mandates

Mandates

CBD COP 9, 2008 “Encourages Parties to develop national or regional data networks in order to facilitate the exchange of, and access to information...,including providing information to the **WDPA**” (COP IX/18)

CBD COP 10, 2010 “Encourages Parties to share and update relevant information on their protected areas system with the **World Database on Protected Areas**” (COP X/31)

CBD COP 11, 2012 “Invites the UNEP World Conservation Monitoring Centre and its partners, including the World Commission on Protected Areas of the International Union for Conservation of Nature (IUCN), to continue to report progress towards achieving Aichi Biodiversity Target 11 and related targets through the **Protected Planet Report**” (COP XI/24)

IUCN World Conservation Congress, 2012 “Recognizing IUCN’s responsibility to maintain the **World Database on Protected Areas** through its partnership with the United Nations Environment Programme-World Conservation Monitoring Centre” (WCC5/42)

World Parks Congress, 2003 “Urge the Parties to the CBD to request all governments to provide annual updates of information to the **WDPA**” (WPC V.4/8)



The WDPA uses the IUCN definition of a protected area

“A clearly defined geographical space, recognised, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values.”



Dudley et al. [Ed] 2008. Guidelines for applying protected areas management categories. IUCN, Gland.
<http://data.iucn.org/dbtw-wpd/edocs/PAPS-016.pdf>



There are different designations of protected areas in the WDPA

National	Regional	International
<ul style="list-style-type: none"> ▪ IUCN Categories I-VI ▪ Indigenous & Community Conserved Areas ▪ Private Protected Areas 	<ul style="list-style-type: none"> ▪ Natura 2000 sites ▪ Barcelona Convention sites ▪ ASEAN Heritage Parks 	<ul style="list-style-type: none"> ▪ UNESCO World Heritage Sites ▪ Ramsar Wetlands of International Importance ▪ UNESCO Man & Biosphere Reserves



WDPA Standards for Global Interoperability

1. All protected areas must fit the IUCN definition of protected area
2. The data must be spatial
3. Minimum attributes for each protected area must be included
4. Source information must be provided for the data



Attribute Data Standards

- ✓ 22 fields
- ✓ Uses ISO & IUCN terminology
- ✓ Supports Multiple Languages
 - Αιγαίου
 - 欢迎来到
 - محمية العقبة البحرية
- ✓ Sets Clear Requirements:
Minimum/Core/Enhanced
- ✓ Encourages Data Stewardship



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Source Standards

*Based on ISO Metadata Standards**

- Dataset Title
- Responsible Party
- Responsible Party Contact E-mail
- Year
- Dataset Language
- Dataset Character Set
- Source Scale Denominator
- Lineage Process Description
- Source Citation



* ISO 19115: 2003 "Geographic Information – Metadata"

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Importance of protected area conservation standards

Allow for

- Comparison between countries
- Regional strategies
- Measure and monitor at global scale

Most important for international work from
IUCN:

- Definition of a protected area
- Management objective
- Governance type





Australian Government
Great Barrier Reef
Marine Park Authority

The Great Barrier Reef Marine Park and World Heritage Area:

*Lessons learnt Ideas leading into
BIOPAMA Group Discussion*

Presentation – BIOPAMA Inception Workshop Oceania
Region, Fiji
4th February 2013

Darren Cameron
GBRMPA

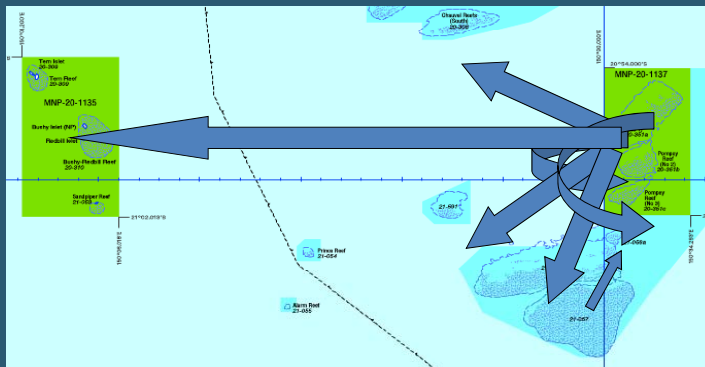


Benefits of no-take zones on ecosystem-wide fish populations



Australian Government
Great Barrier Reef
Marine Park Authority

•Benefits of no-take zones to fished areas



GBR no-take zones now has higher
fish densities on these reefs leading
to GBR wide ecosystem benefits



Great Barrier Reef World Heritage Area

**- Multiple Use
Marine Protected
Area**

Queensland

From LWM
to 250 km
offshore

- 348,000 sq. km
- ~ 2,300 km long
- starts at low water mark on mainland coast

Princess Charlotte Bay

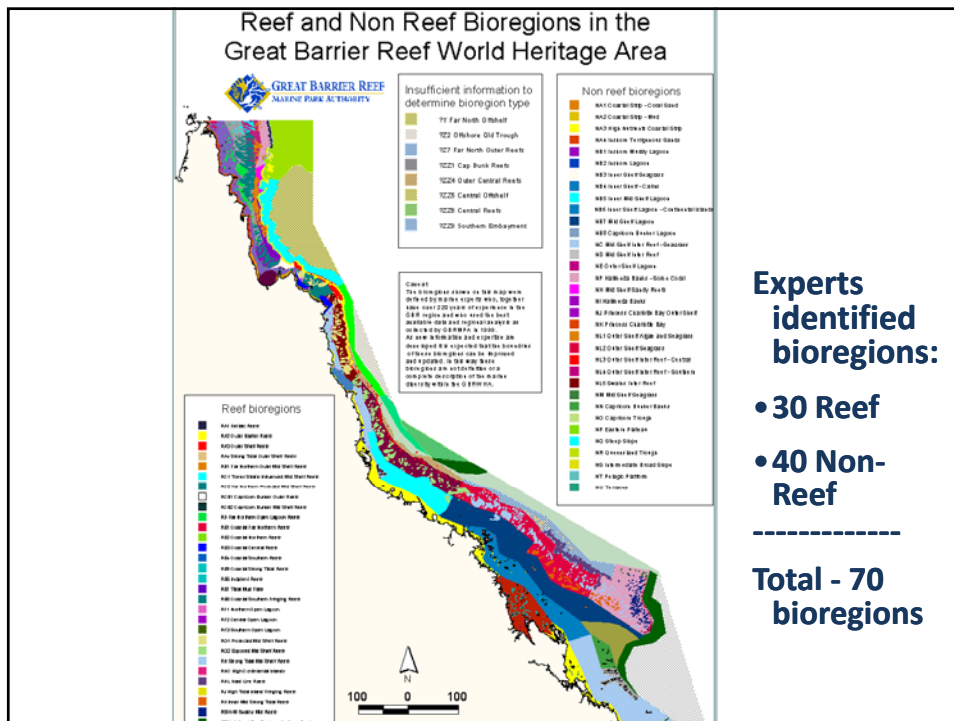
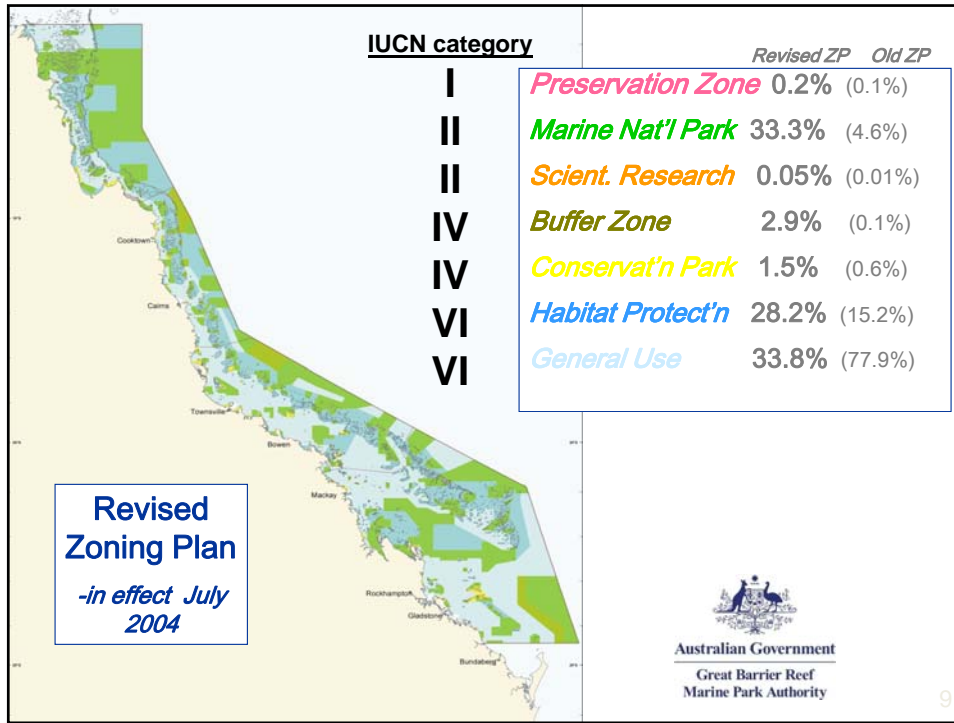
GBRWHA is more than just coral reefs

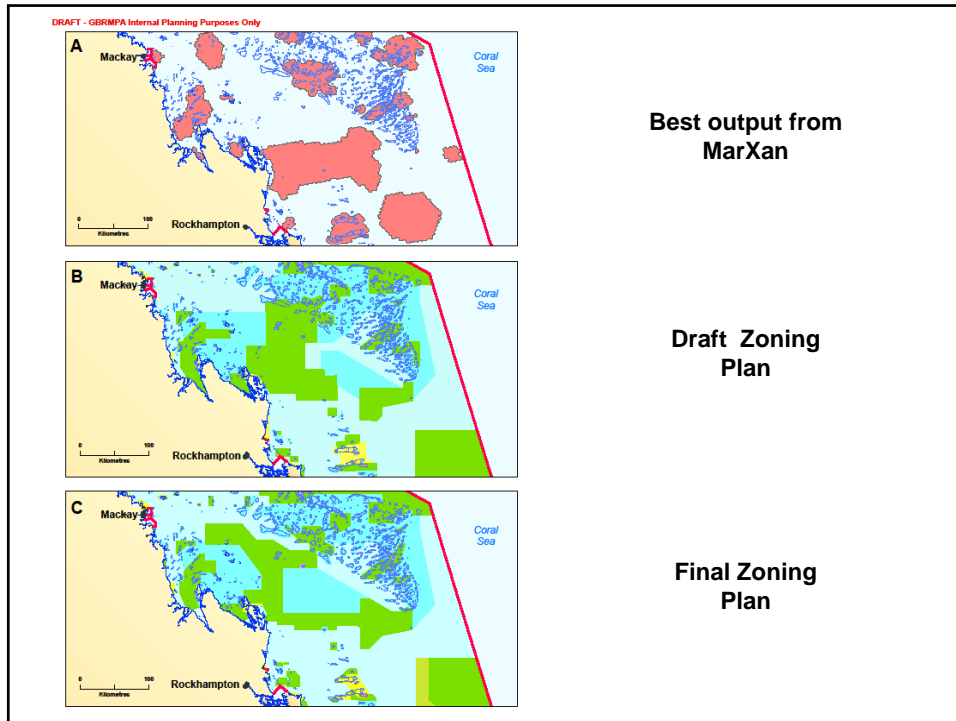
Australian Government
Great Barrier Reef
Marine Park Authority

GBRWHA also includes:

- mangroves
- sandy & coral cays
- continental islands
- seagrass beds (*shallow & deepwater*)
- algal & sponge 'gardens'
- sandy and muddy bottom communities
- deep ocean troughs

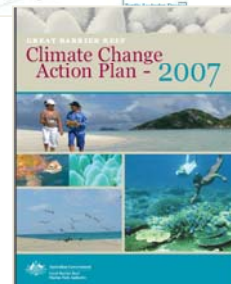
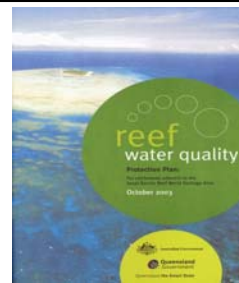
*All these habitats are
'interconnected'*





Key strategies to increase the resilience of the GBRWHA

- Increase the extent of **highly protected areas** (*Representative Areas Program/ rezoning*)
- Improving **water quality** (*Reef Water Quality Protection Plan/Reef Rescue addressing runoff, land use, etc*)
- Promoting more **sustainable fisheries** (*Queensland Fisheries Management Plans*)
- Minimising impacts of **coastal development** (*Qld Coastal Plan, Strategic Assessment*)
- Increasing awareness of, and adaptation for **climate change** (*Climate Change Action Plan; Bleaching Response Plan*)



Partnerships

- Reef Guardians – Schools, Councils, Fishers, Farmers
- Local Marine Advisory Committees
- Traditional Owners
- Science and research
- Industry



Main reasons for strong GBRWHA management



Australian Government
Great Barrier Reef
Marine Park Authority

- **Appropriate funding, expertise and strong political support**
- **a sound governance / legislative framework**
- **ecosystem-level management (EBM)...including management influence /integrated management over a wider context than just the MPA**
- **Zoning provides sound framework**
- **Widespread consensus that the GBR is important, with many industries depending upon its health**
- **effective research & monitoring programs, prioritised to provide information for management**

The main factors for the success of the GBRWHA MPA rezoning?



Australian Government
Great Barrier Reef
Marine Park Authority

The successful rezoning outcome relied heavily on:

- Using best available scientific knowledge
- High level of public / stakeholder participation
- Effective leadership (*within agency & political*)
- Consequent socio-political support.

All four aspects were essential, but the importance of the latter three cannot be emphasised enough.



Others lessons learnt



Australian Government
Great Barrier Reef
Marine Park Authority

- Zoning is important.... but it is only part of an effective EBM approach
- Most issues outside GBRMPA's jurisdiction
- Need for adaptive management (Ports and shipping not on radar 5 years ago)
- Good management / decisions requires more than good science and scientific expertise
- Essential to work with all users and stakeholders and have staff with required diverse skills





Australian Government
Great Barrier Reef
Marine Park Authority

Thank you



For more information:
www.gbrmpa.gov.au



BIOPAMA Oceania meeting WCPA Management Effectiveness and Capacity Development programs

Marc Hockings
University of Queensland, Australia
Vice-Chair, Science and Management of PAs, IUCN World
Commission on Protected Areas

WCPA



Priority areas for WCPA

- Priority Area 1: Protected areas conserving nature
- Priority area 2: Protected areas developing capacity
- Priority area 3: Protected areas achieving quality
- Priority Area 4: Protected areas ... respecting people
- Priority Area 5: Protected areas ... offering solutions

Capacity Development


WCPA programs, activities and people



- Chair – Ernesto Enkerlin
- Deputy Chair – Kathy MacKinnon
- Vice-Chair Capacity - Eduard MÜLLER
 Universidad para la Cooperación Internacional (Costa Rica)
- Vice-Chair Natural Solutions – Nigel Dudley
 Editor of Parks (with Sue Stolton)
- Vice-Chair Science and Management of Parks – Marc Hockings
 University of Queensland
- Vice-Chair Connectivity Conservation – Graeme Worboys



Capacity Development

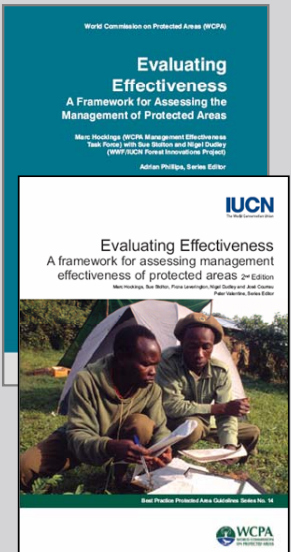
WCPA Capacity Development



- Global Partnership for Professionalizing Protected Area Management (GPPAM) – Eduard Muller
- Leading-edge open source curricula for
 - 1) senior administrators, system directors, planners;
 - 2) chief park wardens, superintendents, PA managers;
 - 3) rangers and field staff.

About Protected Areas		
Concept	Benefits	History
Values of Protected Areas		
Natural values	Spiritual values	Cultural values
Concepts of Management		
What is management?	Management functions	Types of management
Principles of Management		
Natural area management	Cultural heritage management	Financial management
Operational Management Practice		
Law Enforcement	Interpretation	Search and Rescue

<p>Capacity Development</p>	<h2 style="color: yellow;">E-Book Protected Area Governance and Management</h2>
	<ul style="list-style-type: none"> • Development of an e-Book on PA management • Linked to the Open Source curricula • Led by Graeme Worboys, Michael Lockwood and Ashish Kothari • Chapter authors invited for the 31 chapters • Will be available on-line at low cost • Aim to launch book at World Parks Congress Nov 2014 

<p>Capacity Development</p>	<h2 style="color: yellow;">WCPA Best Practice Management</h2>
	<ul style="list-style-type: none"> • 19 Best Practice Guidelines already published • Guidelines under development (and leads) <ol style="list-style-type: none"> 1. Designs for Nature: Regional Conservation Planning, Implementation and Management – Stephen Woodley 2. Governance of Protected Areas: From Understanding to Action – Grazia Borrini-Feyerabend 3. Sustainable Tourism in Protected Areas (BP8: under revision) - Anna Spenceley 4. Urban Protected Areas – Ted Tryzna 5. Climate Change and Protected Areas – Stephen Woodley 6. Managing Alien Invasive Species in Protected Areas – Piero Genovesi 7. Wilderness Protected Areas: Management Guidelines for IUCN Category 1b - Cyril Kormos and Vance Martin

Capacity Development



WCPA Best Practice Management

- Guidelines under development/proposed (and leads where known)
 8. Developing Best Practice Guidelines for Social Assessment of Protected Areas – Colleen Corrigan and Dilys Roe
 9. Healthy Parks Healthy People – Ian Walker
 10. Managing Protected Areas with Sustainable Use of Natural Resources (Category VI) – Claudio Maretti
 11. Economic Evaluation Methodologies for Protected Areas – no lead identified
 12. Islands and Protected Areas – no lead identified

Capacity Development



Journal and journal literature

- IUCN-WCPA Journal - Parks
 - First established 18 years ago
 - Re-launched at World Conservation Congress
 - Open access and online journal
 - Peer reviewed but focus on papers by and for people involved in establishment and management of protected areas
 - Full papers but also short technical notes
- Literature database
 - Database and monthly updates on WCPA website
 - Journal papers relevant to PAs classified by members of WCPA Science and Management theme

Management Effectiveness of Protected Areas

Management effectiveness and the IUCN Green List



Management effectiveness of PAs

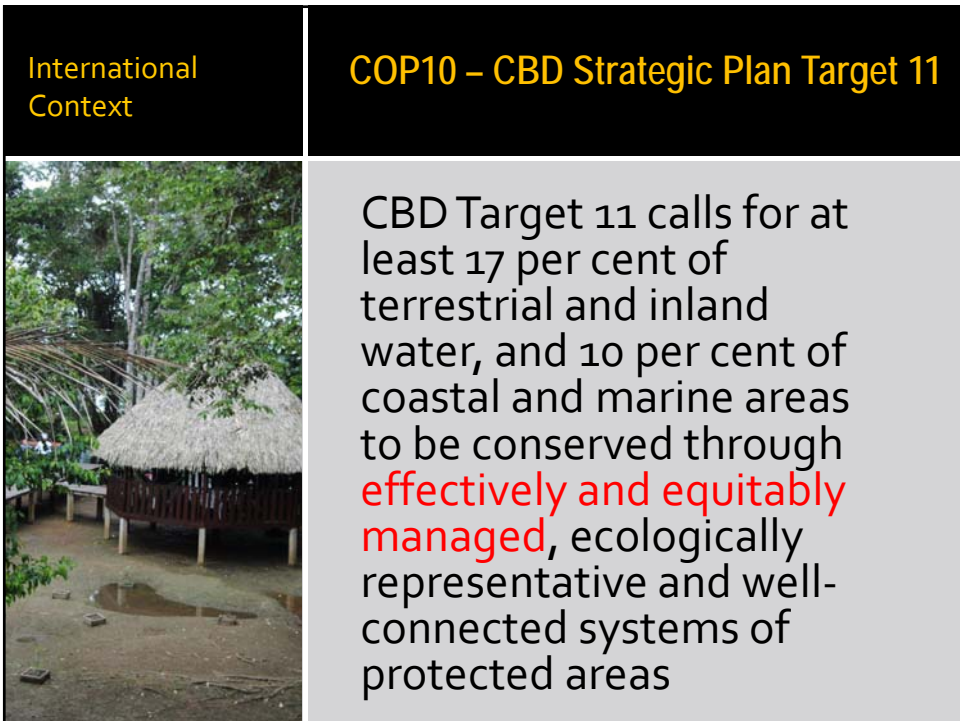
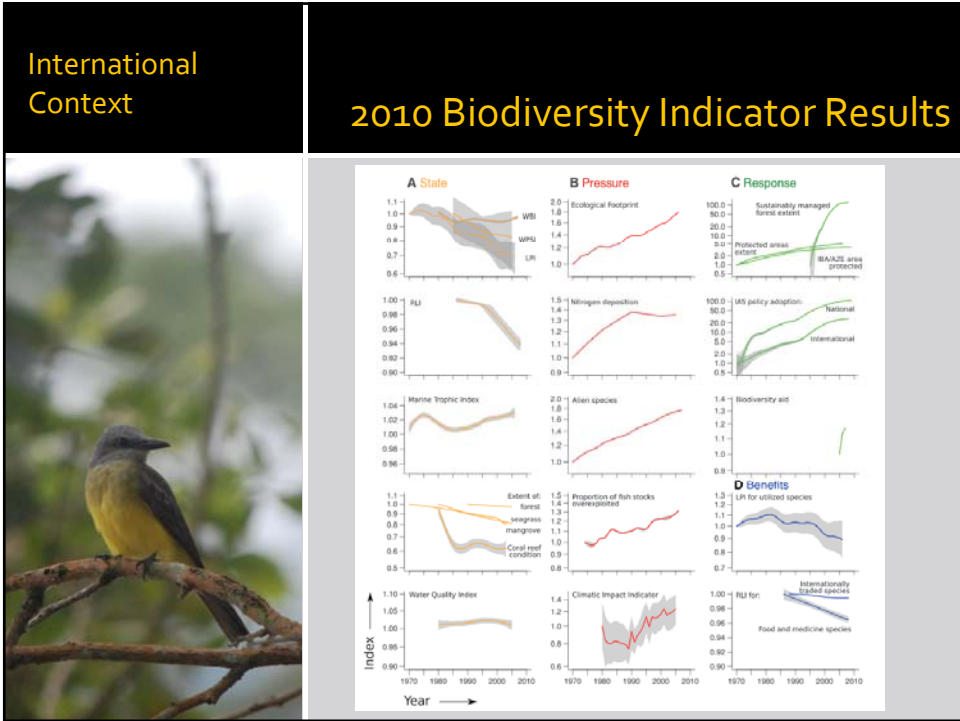
What is Protected Area Management Effectiveness Evaluation (MEE)?



'...the assessment of how well a protected area is being managed – primarily the extent to which it is protecting values and achieving goals and objectives'
(WCPA PA Guidelines, no 14, 2006)

It includes consideration of

- design issues;
- the adequacy and appropriateness of management systems and processes; and
- the delivery of protected area objectives including conservation of values



Management effectiveness of PAs

Evaluation Framework

Introduction to MEE

WCPA assessment framework

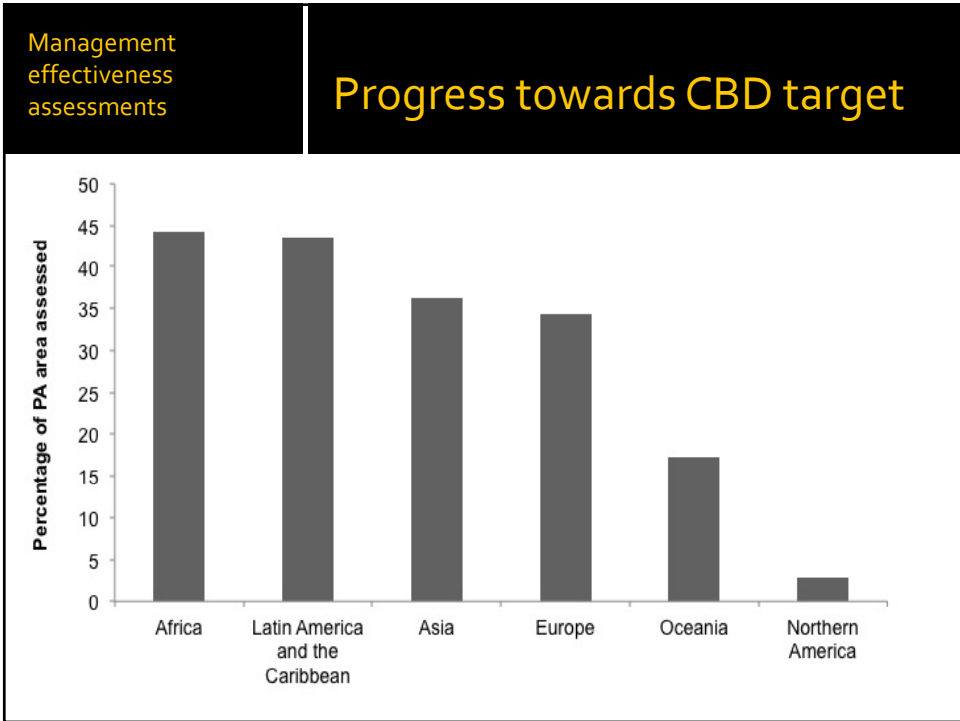
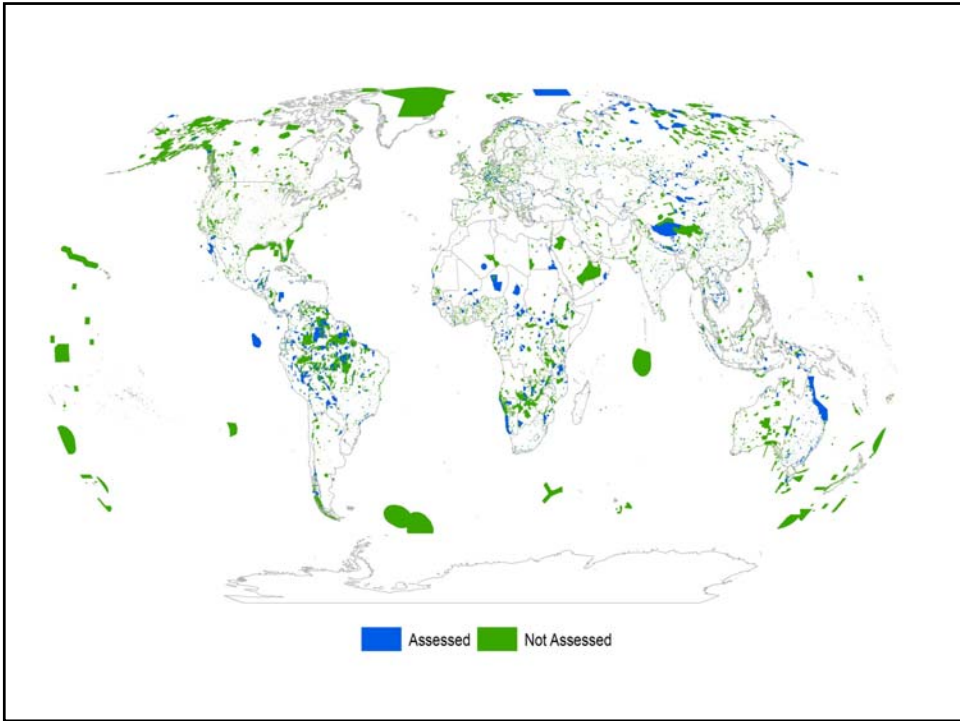
Elements of evaluation	Context <i>Where are we now?</i>	Planning <i>Where do we want to be?</i>	Inputs <i>What do we need?</i>	Process <i>How do we go about it?</i>	Outputs <i>What were the results?</i>	Outcomes <i>What did we achieve?</i>
Criteria	Significance Threats Vulnerability National policy Engagement of Partners	PA legislation and policy PA system design Reserve design Management planning	Resourcing of agency Resourcing of site	Suitability of management processes	Results of management actions Services and products	Impacts: effects of management in relation to objectives
Focus of evaluation	Status	Appropriateness	Economy	Efficiency	Effectiveness	Effectiveness Appropriateness



Global Study of PA Management Effectiveness (PAME)

Three Key Objectives

1. What has been done? – Assess progress towards the PoWPA targets for PAME
2. Status of parks, key threats, factors influencing effectiveness of management.
3. Integrate management effectiveness information into the World Database on Protected Areas.



PAME Global study results

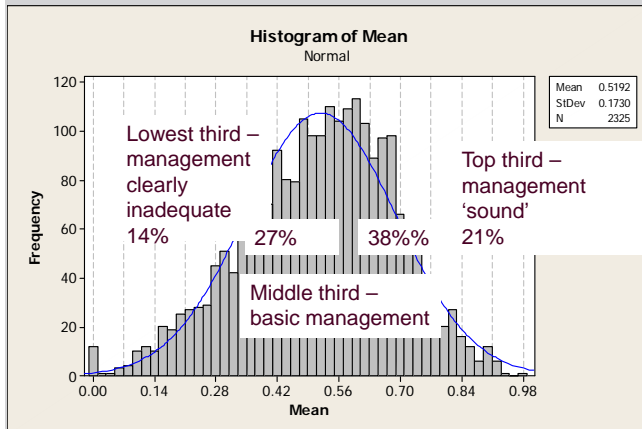
Global Study Analysis

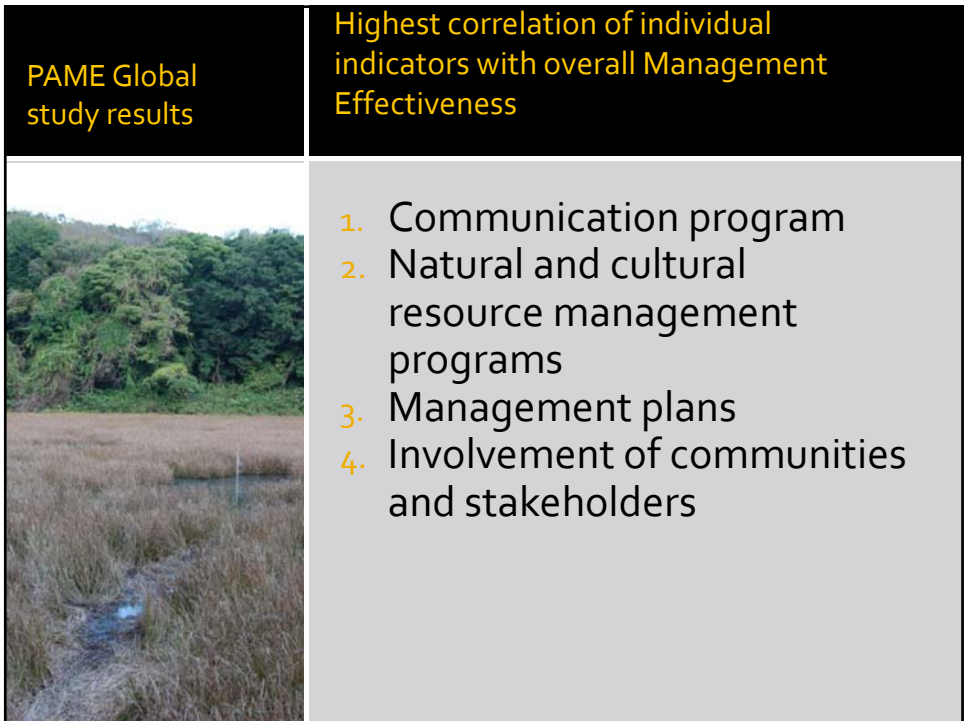
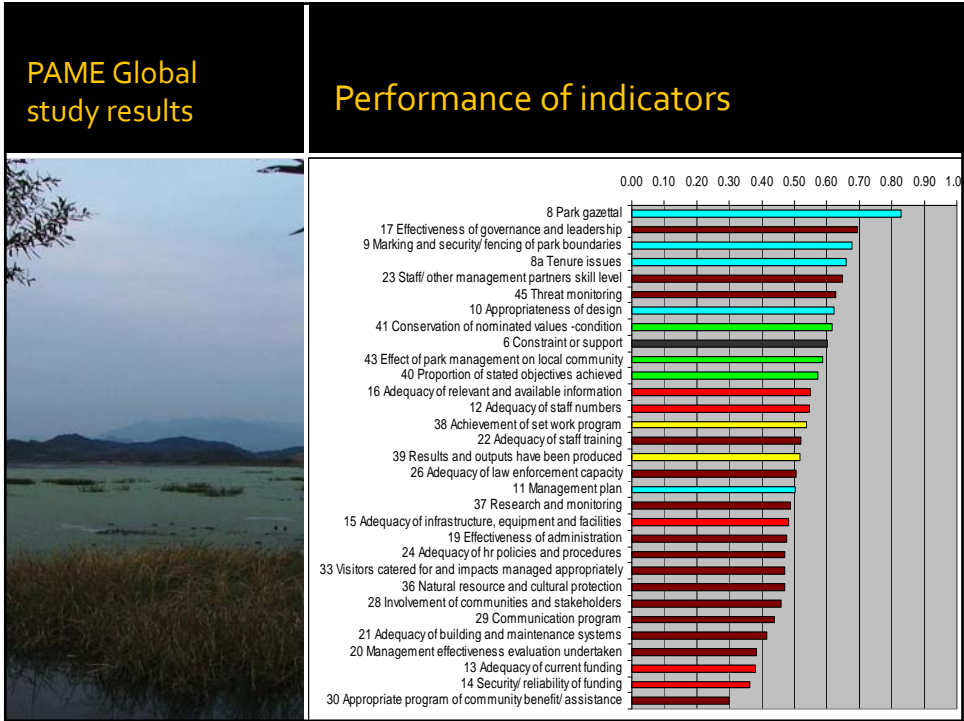


1. Data is available from approximately half of the PAME studies
2. Grouped individual indicators into 45 "headline" indicators and rescaled results into a common 0 to 1 format

PAME Global study results

Overall effectiveness of Protected Area Management





PAME Global study results

Highest correlations with Outcomes



Biodiversity outcomes

1. Skills of staff
2. Resolution of tenure issues
3. Achievement of work program
4. Effectiveness of law enforcement

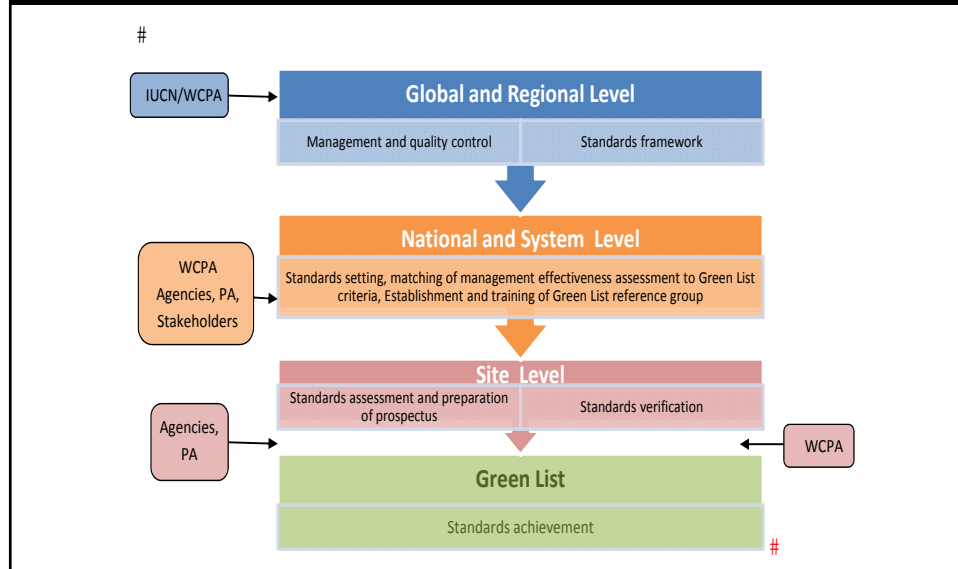
Community outcomes

1. Communication program
2. Program of community benefit
3. Involvement of communities and stakeholders

The IUCN Green List of Well Managed Protected Areas is an initiative to encourage, measure and celebrate the success of protected areas in reaching good standards of management



Green List Process



Green List of Well Managed PAs



Next steps

- Complete pilot studies in Colombia, Kenya and CATS (Tiger Reserves)
- Commence case studies in Australia, South Korea and South Africa
- Review workshop in South Korea (May/June 2013)
- Other case studies as they emerge
- Launch at World Parks Congress 2014



Secretariat of the Pacific Community and BIOPAMA



Brad Moore
Fisheries Scientist
Secretariat of the Pacific Community



The Secretariat of the Pacific Community (SPC)

- Provision of scientific and technical advice to PICTs
- Capacity building
- 26 member countries
 - 22 PICTs plus four of the original founding countries
- Over 700 staff
 - Noumea, Suva, Honiara, Pohnpei



- Multi-divisional
 - Fisheries, Aquaculture and Marine Ecosystems (FAME)
 - Public Health
 - Land Resources
 - Education, Training and Human Development
 - Statistics for Development (Pacific Regional Information System - PRISM)
 - Climate Change
 - Strategic Engagement, Policy and Planning
 - Economic Development
 - Applied Geoscience and Technology Division (SOPAC)
- Operates on a *country-request* basis



Coastal Fisheries Program

- Scientific and technical advice to ensure sustainable management and development of coastal and nearshore resources
- SciCOFish (EU funded), AusAID
- Training and capacity development
- Management Plans
- Aquarium trade
- Resource assessments
 - E.g. Sea cucumber, trochus



- **PROCFish Project (early 2000s)**
 - Funded by the EU
 - Describe fisheries of the region
 - 22 member countries (4 locations per country)
 - Finfish, invertebrate and habitat assessments
 - Socio-economic surveys

- **Climate Change Project (2011-present)**
 - Funded by AusAID
 - Monitoring to detect changes in coastal fisheries resources
 - 5 pilot sites (FSM, Kiribati, PNG, RMI, Tuvalu)
 - Finfish, invertebrate, benthic habitat assessments
 - Sea surface temperature
 - Market and Creel surveys
 - Age and growth rates of finfish
 - Capacity development of local fisheries officers, NGO staff



SPC Coastal Fisheries Programme



Coastal Fisheries Program

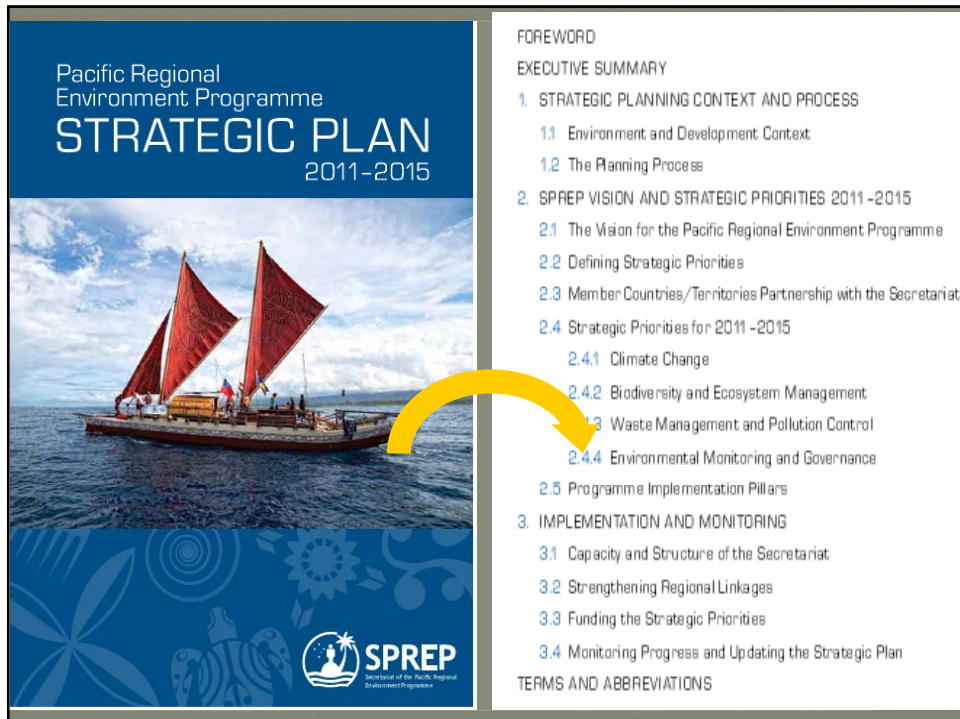
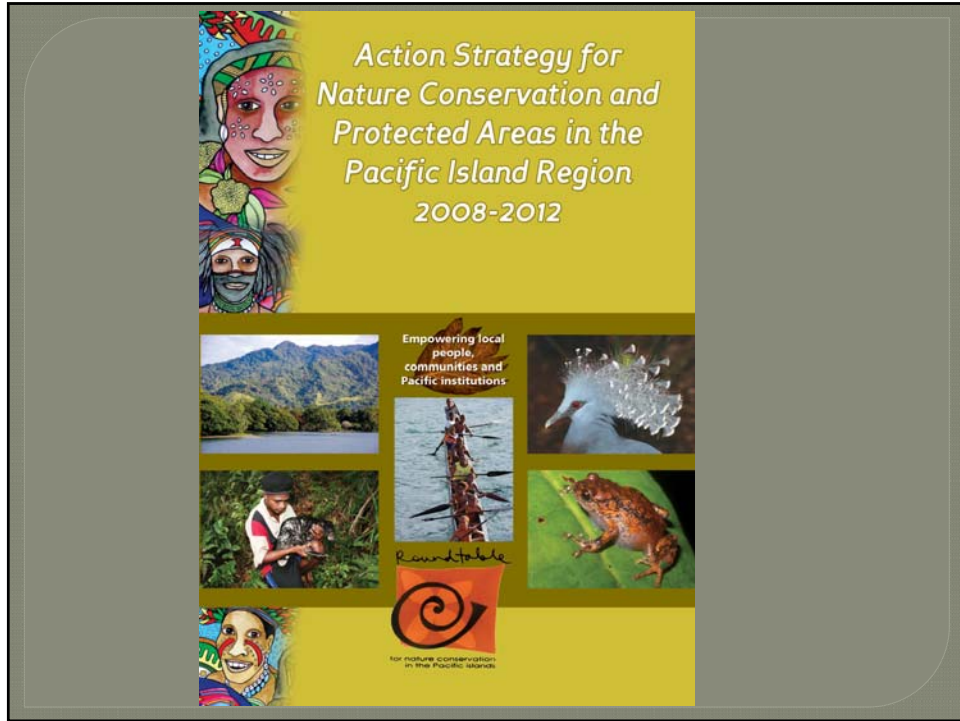
- **Databases and Systems:**
 - Reef Fisheries Integrated Database (live in all 22 member PICTS)
 - Field survey data (e.g. Underwater visual census, Manta tow surveys)
 - Abundance, density, biomass, size data
 - Benthic habitat assessment web portal (live, used in 5 PICTS)
 - Aquarium trade export database (live)
 - Socio-economic survey database (live)
 - Market and Creel Survey database (under development)

- All data, databases and servers owned by member countries



SPC Coastal Fisheries Programme





Achieving the Vision:

The SPREP Strategic Plan

*The Pacific Environment,
sustaining our
livelihoods and natural
heritage in harmony
with our cultures*

Regional Action

- ◉ Working in partnership - regional scale initiatives (e.g. PoWPA, Action Strategy for Nature Conservation, Oceanscape)
- ◉ Financial and political commitment to CROP agencies for effective technical support
- ◉ Continue to support cross-sectoral working groups (MSWG, SDWG, etc)
- ◉ Effective environmental monitoring and reporting – baselines for decision making
- ◉ Achieve global and regional biodiversity targets.

National Political Commitment

- **National level – mainstreaming of biodiversity and ecosystem management into all aspects of policy implementation – national champions**
- **Implement the CBD NBSAP and PoWPA processes and achieve national targets**
- **Expand and resource national capacity – strengthen environment across all sectors**
- **Focus limited technical staff on national issues**
- **Environmental monitoring**

Biodiversity and Ecosystem Management Division

1. **Work with Members to Achieve Strategic Plan goals and targets:**
 - **BEM1: ...management and conservation of island, coastal, and marine ecosystems and region's unique biodiversity**
 - **BEM2: ...threatened and migratory species management and conservation**
 - **BEM3: ... invasive species management**

Biodiversity and Ecosystem Management Division

2. Build capacity to service members:

- Additional staff (permanent or project) in NBSAP and PoWPA implementation support
- Secure a staff position for EbA
- Secure resources for invasive species
- Strengthen partnership engagement: technical support, secondments, etc
- Ensure that lessons are learned to ensure service delivery to members
- Effective staff performance monitoring

Biodiversity and Ecosystem Management Division

3. Work effectively with other divisions:

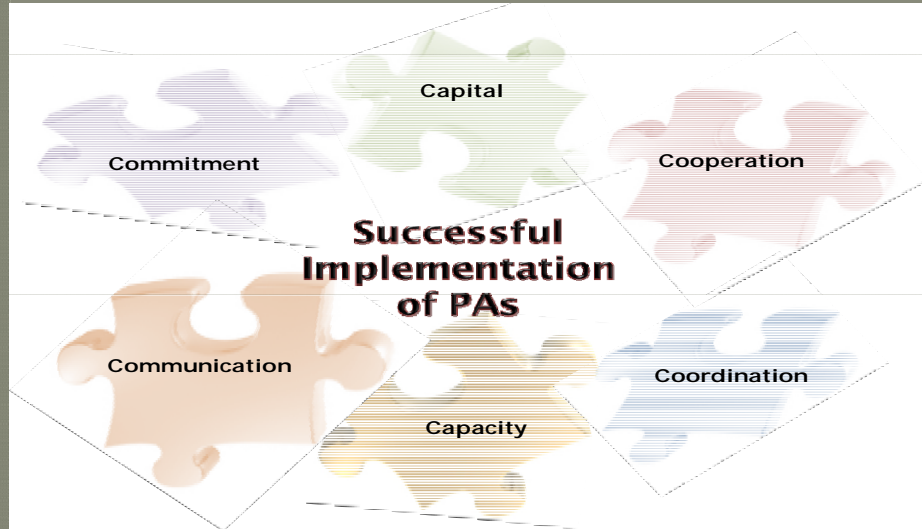
- Integrated approaches to programme and project implementation – ‘1 SPREP’
- Ensure that the ‘cross-cutting’ areas of capacity building, communications, governance, monitoring are fully and effectively utilised
- Contribute to corporate management and improvement to ensure overall effectiveness of SPREP as an organisation

The Programme of Work on Protected Areas PoWPA



Merging Nature, People and Protected Area Management

The Six Key Elements of Success in implementing the CBD Programme of Work on Protected Areas

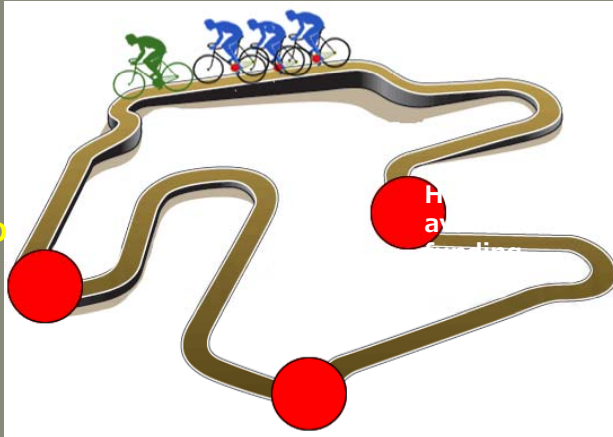


PoWPA - Sub-regional Approach

On the track to effective implementation of the Programme of Work on Protected Areas

Lead by a sub-regional coordinator

SPREP have been designated by CBD for this role



Technical support

Capacity building

Overview

- 1. The Secretariat of the Convention on Biological Diversity ("the CBD Secretariat") and Secretariat Pacific Regional Environment Programme (SPREP) agree to cooperate to sustain, continue and, where possible, expand efforts to implement the Programme of Work on Protected Areas (PoWPA) (hereafter referred to as the project) by providing support to Pacific Island Countries (PIC).

- 2. Under this project agreement SPREP shall act as a reference / focal point and provide support to CBD Parties in relation to the development of the aforementioned network.
- 3. SPREP is well-placed to carry out the work due to its existing biodiversity conservation activities and contacts in the region and the fact that it already engages in enhancing management effectiveness of conservation areas including all IUCN Protected Area Categories and World Heritage sites. It is intended that the project will work across multiple levels – influencing policy and other institutional frameworks as well as carrying out direct field actions. This thematic and programmatic approach will contribute to building the capacity of PIC, SPREP Member States as well as the network of partners including members of the Pacific Islands Round Table for Conservation and Protected Areas.

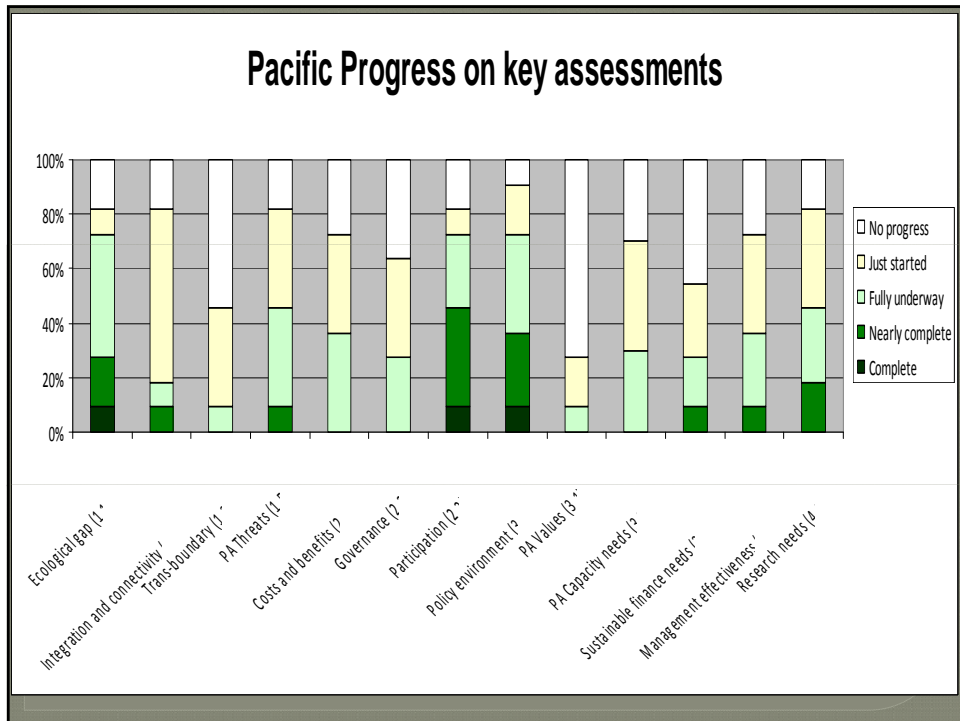
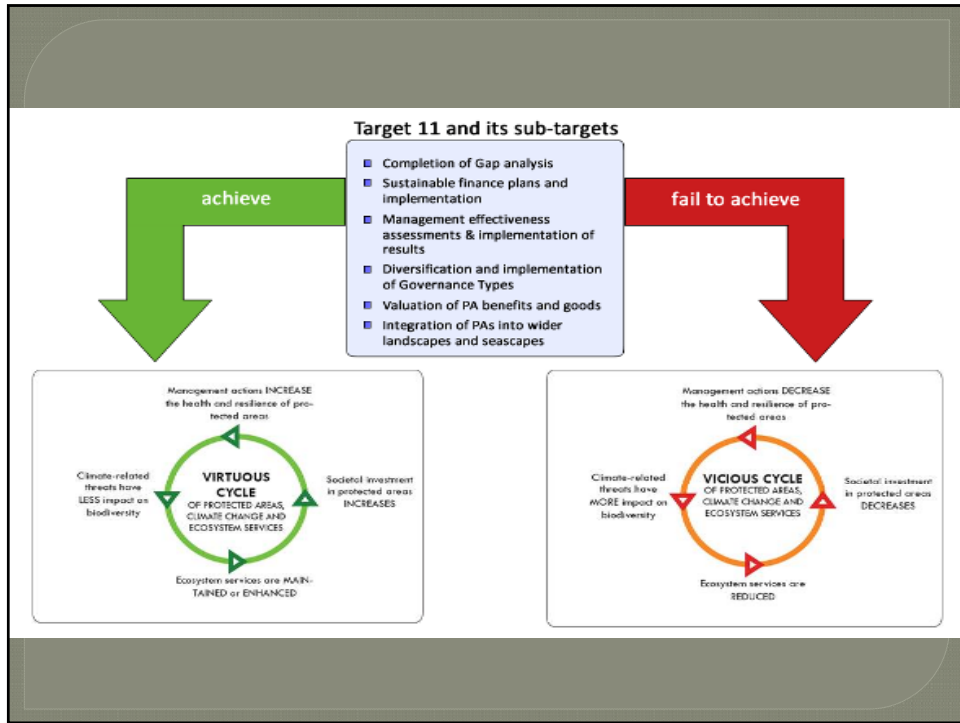
- SPREP also undertakes to support efforts to implement other international conventions Multilateral Environmental Agreements (MEA) including the United Nations Convention to Combat Desertification, Convention on Biological Diversity (CBD), UNESCO World Heritage Convention. This is already an established foundation for SPREP's work in the region. This work has particular importance for PICs where the governance and sustainable management of natural resources is an important element of daily life.

Project activities`

- Provide logistical support to the CBD Secretariat in preparation of relevant workshops;
- Facilitate targeted capacity building and technical training on key PoWPA thematic areas to each PIC requesting support within the sub-region;
- Maintain communication on PoWPA action plans or funding proposals with national PoWPA, CBD, and GEF focal points, UNDP country offices, UNEP offices, ILC representatives, NGO partners and others within the sub-regional network;

Project activities

- Use the PoWPA e-learning curriculum and online course room as a part of targeted capacity-building efforts and train national PoWPA focal points and country representatives as trainers;
- Plan and conduct a sub-regional technical clinic funded by the Secretariat;
- Support countries to submit timely and appropriate coordinated projects under their GEF 5 allocations and coordinate the support for their implementation as needed;
- Plan and conduct technical clinics and other capacity-building activities (subject to funding) with Parties on targeted common themes relating to implementation of a GEF proposal.



PoWPA a successful Programme!

“The Programme of Work on Protected areas without doubt can be seen as one of the most successful programmes of the CBD”

Statement by the delegation of Germany to SBSTTA 14

“The Programme of Work Protected Areas is one of the great successes of the Convention on Biological Diversity and helped stimulate rapid growth in both the number and effectiveness of protected areas throughout the world” **Julia Marton Lefevre, IUCN-DG and Nik Lopoukhine, previous Chair IUCN-WCPA**

“Parties to the CBD and the world’s protected area community have hailed the CBD Programme of Work on Protected Areas (PoWPA) as one of the Convention’s most successful initiatives. **Achim Steiner UN Under-Secretary General & UNEP Executive Director**