



The UN System of Environmental Economic Accounting (SEEA)

‘Accounting’ for parks ecosystem services

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Overview

- SEEA – Experimental Ecosystem Accounts
- The role of SEEA in protected areas (parks)
- International experimentation in ecosystem services
- SEEA Classification of ‘Parks’
 - Ecosystem assets
 - Ecosystem services
- Next steps





SEEA Experimental Ecosystem Accounts

- Ecosystem assets - park or protected area, within the park there are many ecosystems
 - Habitat type, forest type, species area, water shed, cultural area, forest type, etc
- Ecosystem services
 - Habitat, water and air filtration, water storage, carbon sequestration, flood control, timber, tourism, etc
- Challenge
 - Park management considers many trade-offs between a diverse range of services
- SEEA EEA provides an integrated framework to classify ecosystem assets and services
 - Linking investment in parks to changes in asset condition and services



International Policy Drivers

- Post-2015 UN development agenda/SDGs
 - Goal 15 - Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss
 - 15.5 take urgent and significant action to reduce degradation of natural habitat, halt the loss of biodiversity, and by 2020 protect and prevent the extinction of threatened species
- Green Growth/Green Economy
- Broader measures of progress/Beyond GDP



International Policy Drivers Cont.

- Natural Capital Accounting/ WAVES
- Aichi targets (e.g. Target 2)
By 2020, at the latest, biodiversity values have been integrated into national and local development and poverty reduction strategies and planning processes and are being incorporated into national accounting, as appropriate, and reporting systems.
- Poverty and environment
- TEEB



National & Sub-national Policy Drivers

- Protection of rare and threatened flora and fauna
- Tourism
- Cultural values
- Clean water and air supplies

- The above policies aim to provide services that are of benefit to society:
 - Limited funding to invest in all services
 - One asset can provide many services – tradeoffs
 - Integrated approach to assessing the tradeoffs



SEEA and Parks!

- Why is SEEA relevant to protected areas?
 - Explicit recognition of ecosystem assets and services
 - Better understand return on investment
 - Public expenditure
 - Resource scarcity
 - Relative Asset value – physical terms – rare and or threatened
- SEEA provides:
 - Coherent and consistent framework for the classification of parks and the ecosystems they contain
 - A foundation to undertake experimentation in an internationally coordinated manner
 - International and sub-national comparability



Advancing EEA Project outline

- Pilot Countries
 - Bhutan, Indonesia, Vietnam, Mexico, Chile, South Africa, Mauritius
 - Associate countries: Australia, Canada, Ecuador, Netherlands, Norway, Peru, Philippines, Colombia, United Kingdom, United States
- In country missions:
 - Assessment of national policy drivers, data sources, data users, institutional arrangements, etc
 - National Program of work
- Guidance and training materials
- Global strategy to take SEEA EEA forward





World database on protected areas, IUCN





Spatial analysis of protected areas coverage using data from the World database on protected areas (<http://www.protectedplanet.net/search>) and World Administrative divisions





Global Protected area coverage statistics by country

mdgs.un.org/unsd/mdg/SeriesDetail.aspx?srid=784

protected areas of mauritius

United Nations Statistics Division | Department of Economic and Social Affairs | United Nations

IAEG: Countries | Techgroup | English

Millennium Development Goals Indicators

The official United Nations site for the MDG Indicators

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Series Details

Series Name: Terrestrial areas protected to total surface area, percentage
Goal: Goal 7. Ensure environmental sustainability
Target: Target 7.B: Reduce biodiversity loss, achieving, by 2010, a significant reduction in the rate of loss
Indicator: Indicator 7.6 Proportion of terrestrial and marine areas protected

Series Data

Download this data:

Country Data
 Country Adjusted
 Estimated
 Modeled
 Global monitoring data
 Not relevant
 Not Available

Terrestrial areas protected to total surface area, percentage					Last updated: 22 Oct 2013
Country	1990	2000	2010	2012	
Afghanistan	0.37	0.37	0.37	0.37	
Albania	3.42	7.29	10.96	10.96	
Algeria	6.31	6.31	7.46	7.46	
American Samoa	0.69	1.09	2.93	2.93	
Andorra	6.77	7.51	9.83	9.83	
Angola	12.40	12.40	12.40	12.40	
Anguilla		4.91	5.96	5.96	
Antigua and Barbuda	6.44	6.58	10.18	10.18	
Argentina	4.67	5.96	6.90	6.91	
Armenia	6.93	7.04	8.10	8.10	
Aruba	0.48	0.48	0.48	0.48	

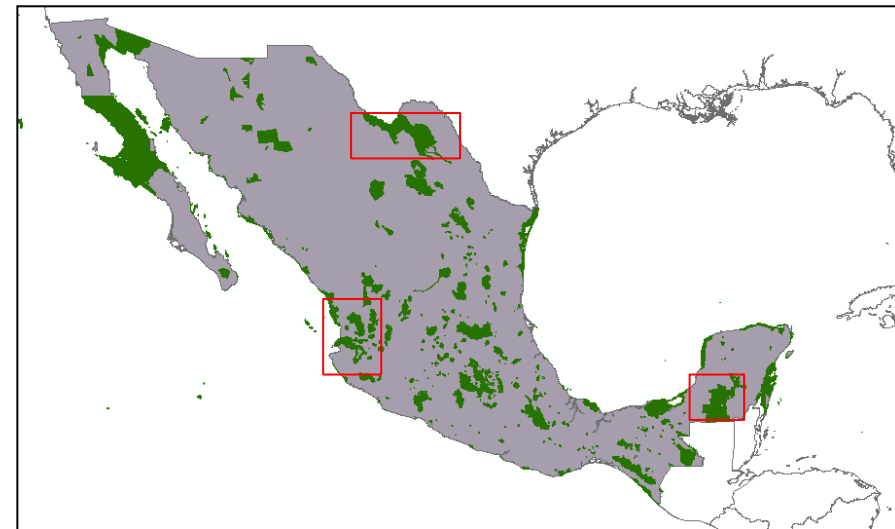


Mexico

Essential differences in protected area coverage can be seen when comparing Parks Watch and WDPA data



Source: www.parkswatch.org

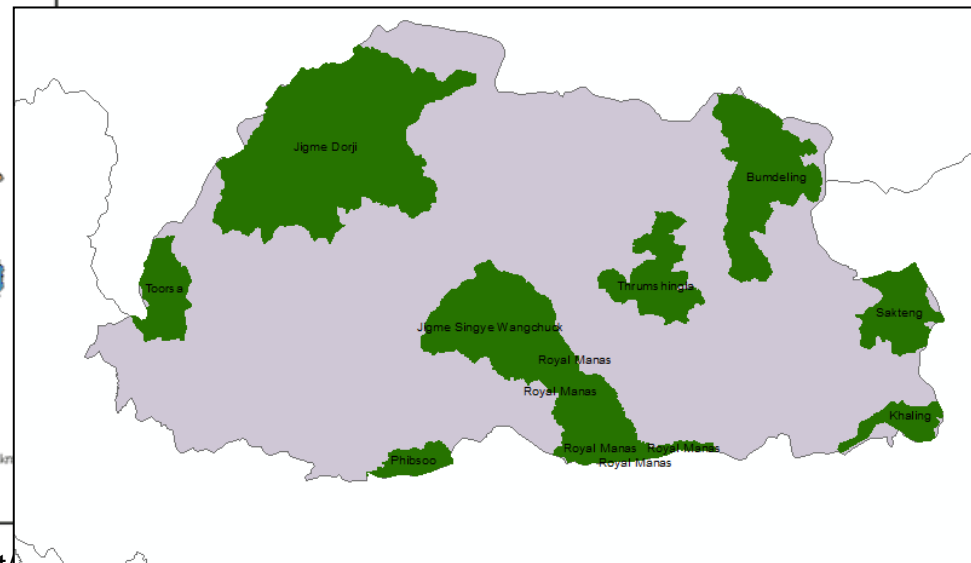
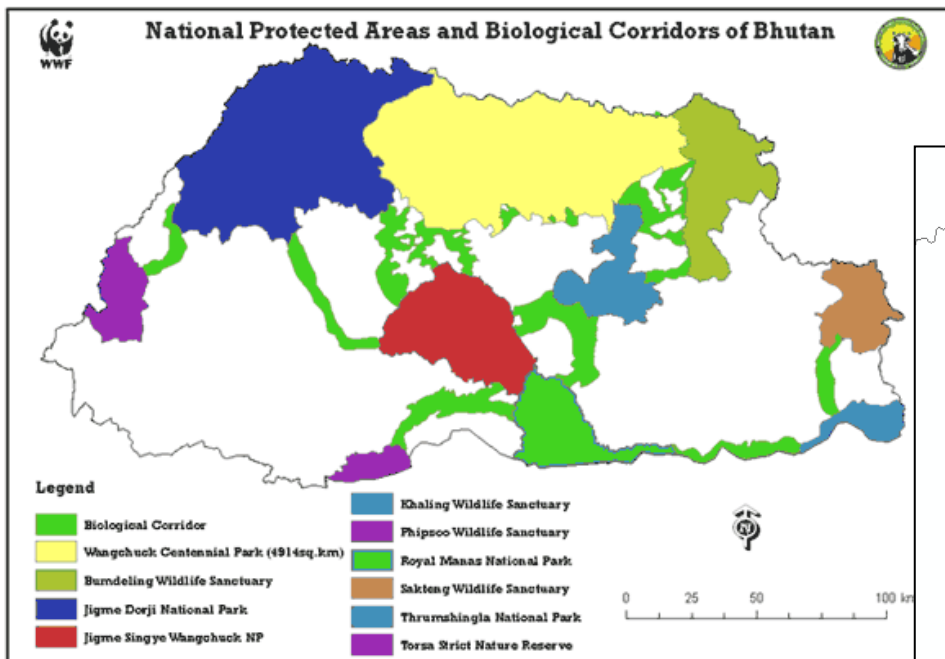


Source: WDPA:
<http://www.protectedplanet.net>



Bhutan

The largest protected area and a number of ecological corridors are not included in the World Database on Protected areas (WDPA)



Source: <http://www.bhutangayul.com/about-bhutan/environment/>

Source: WDPA: <http://www.protectedplanet.net>

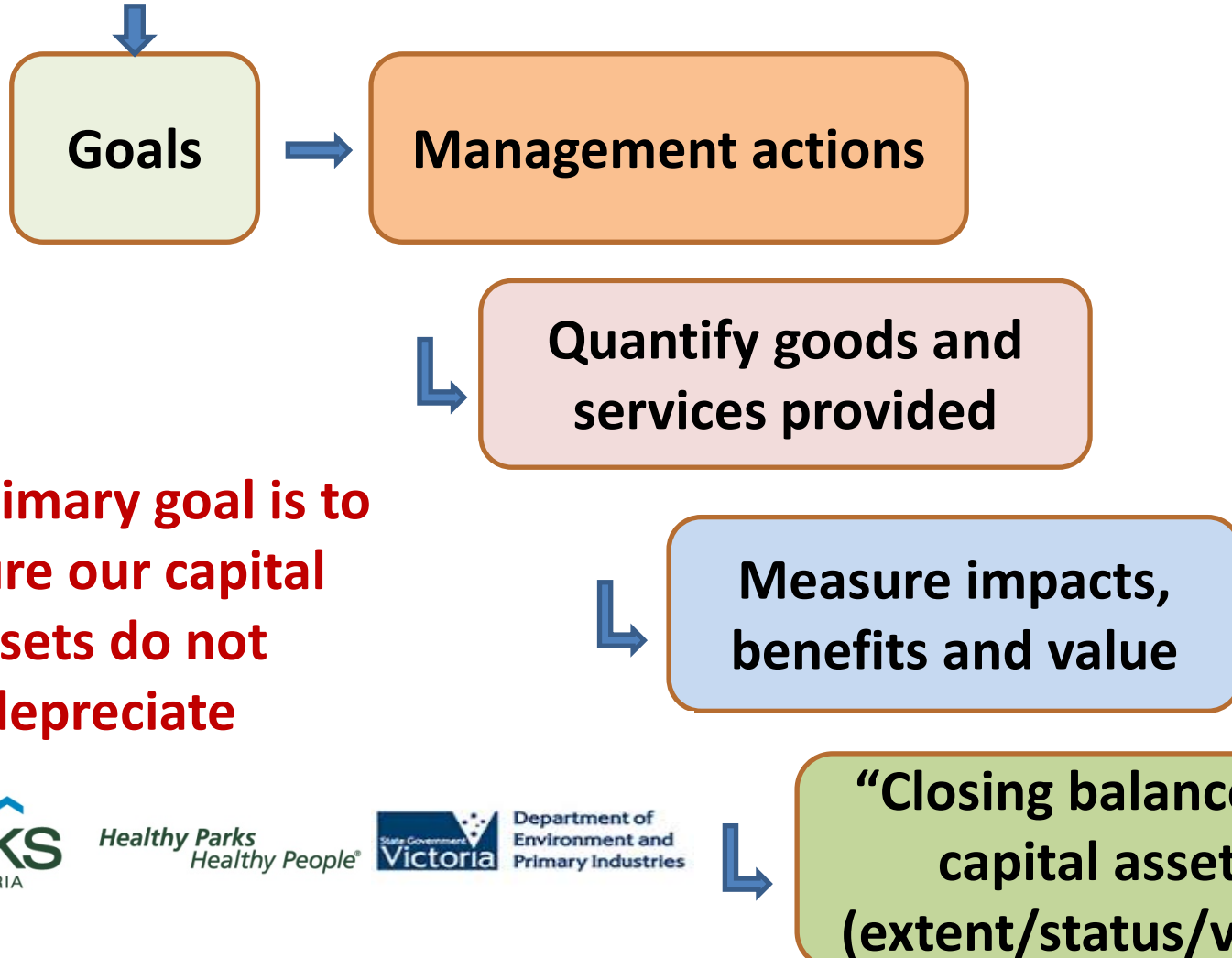


‘Classic problems’ in existing data:

- Classification-related problem
 - country designations do not always follow the IUCN categorization
- Different approaches to delineation of countries’ territories
 - e.g. including coastal waters or not
- Outdated global data sources
 - changing national boundaries (Bhutan)
- Spatial data quality
 - Mismatch between country boundaries and protected areas boundaries
 - e.g. protected areas from neighbouring countries cross the national boundaries

Being more business-like in park management

**“Opening balance”
Inventory of capital assets
(extent/status/significance)**



Our primary goal is to ensure our capital assets do not depreciate



Pilot ecosystem asset account - example

Ecosystem assets in Victorian parks network	Native vegetation (2010)		Wetlands (2014, 2011)		Rivers (2011)		Marine (2014)	
	Extent	Condition	Extent	Condition	Extent	Condition	Extent	Condition
Assets measures	Hectares	Native Vegetation score	Hectares	Index of wetland condition	Hectares with river	Index of stream condition	Hectares	Marine habitat condition
Protected Areas (IUCN PA Categories)								
IA Nature Conservation Reserves	254,255	71	16,009	7	2,911	29	-	-
IB Wilderness Parks	200,094	82	22	1	1,000	41	-	-
II National and State Parks	3,061,274	79	68,681	7	31,874	32	52,809	Very Good
III Natural Features Reserves	63,097	62	1,788	7	4,026	28	231	Fair
IV Bushland Reserves	41,287	61	1,821	6	512	27	-	-
V Protected landscape		62		-			-	-
VI Wildlife Reserves	111,078	63	112,867	6	1,926	25	-	-
Non-protected areas								
Conservation reserve	113,140	62	61,854	6	2,600	29	-	-
Port and coastal asset	1	7	194	10			-	-
Urban, regional and other parks	92,784	63	11,598	7	3,056	25	-	-
Parks total	3,937,010	65	274,834	7	47,905	29	53,040	-
Parks share of total assets in Victoria	38%		42%					

Pilot ecosystem service flow account

Services from Victorian parks network	Quantity	Units	
Regulating services			
Water purification:			
Avoided pollution	182	Tonnes of Nitrogen entering metro waterways pa	●
Avoided sediment output	34,000	Tonnes of solids to regulated national park rivers pa	●
Coastal protection	285	km of coast protecting communities	●
Flood control/protection	40,000	ML reduction stormwater in metro waterways pa	●
	Up to 85%	Reduction in peak flows for 100 year ARI	●
Carbon storage	270,000,000	Total current tonnes of carbon stored	●
Pollination	1,235 – 1,694	Honeybee sites	●
Habitats for threatened species	888 (500)	Threatened species for which selected parks provide at least 50% (80%) of suitable habitat in Victoria	●
Maintenance of genetic diversity	4,431/1,081/333	Species recorded (terrestrial flora/fauna/marine)	●
Maintenance of nursery populations	28,500	Hectares of seagrass, mangrove and reef habitats	●
Cultural services			
Recreation opportunities:			
Enjoyment	53,000,000	Day visits per year	●
Tourism	16,900,000	Tourist nights attributable to parks per year	●
Health	21,000,000	Park visits primarily for physical exercise per year	●
	182,000	Physically active visitors in parks per year	●
Education opportunities	183,000	Participants in education programs per year	●
Scientific research opportunities	215	Research permits granted per year	●
Amenity	12,000	Immediate neighbours	●
Opportunities for cultural connection	648,513	Hectares of joint and co-management with Traditional Owners	●
Social & community cohesion	211,000	Volunteering hours per year	●



SEEA EEA going forward

- Continue country pilots with focused studies on protected areas for some countries
- Focus on physical accounts in the short run
 - Extent and condition
- Improve international and sub-national classification methods
- Integrate economic values where appropriate!
 - Understand the services and how investment can change them



Thank You!

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http://unstats.un.org/unsd/envaccounting/eea_project/default.asp