## UNEP WCMC United Nations Environment Programme World Conservation Monitoring Centre

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### MEASURING AND MONITORING THE IMPACTS OF ECO-COMPENSATION AND PAYMENT FOR ECOSYSTEM SERVICE PROGRAMMES (PES)

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## **PES / Eco-compensation** planning

Ecosystem service mapping to maximise benefits



## Practical choices to make before mapping:

- Purpose
- Spatial scale
- Resolution of analytical units
- Temporal scale

#### Input data:

- National statistics
- Field assessments
- Remote sensing
- Indicators and proxies
- Modelling

#### **Introductory guidance: Mapping Ecosystem Services**

https://www.unep-wcmc.org/system/comfy/cms/files/files/000/000/801/original/Ecosystems\_Services\_Mapping\_2016\_WEB.pdf

2. Identify available data

No

No

4. Can a

proxy be

produced

Do not map

No

Yes



Mapping multiple benefits of REDD+ in Paraguay: using spatial information to support land-use planning



Map 13a: Multiple benefits: carbon, biodiversity and soil erosion control Drawing on the maps of biomass carbon (Map 7a), potential richness of threatened forest species (Map 9), Important Bird and Biodiversity Areas (Map 10) and the importance of forest for limiting soil erosion (Map 12), it is possible to identify forest areas of importance for more than one benefit.



#### Map 16a: Incidence of poverty in relation to biomass carbon

REDD+ actions in areas of high poverty should be designed with particular care and attention to the needs of the poor, and the potential for both benefits and risks to local livelihoods. Dark brown on the map indicates areas high in carbon and high in poverty; blue shows areas low in carbon but high in poverty; and orange reflects areas high in carbon but low in poverty.



#### **Example: Examining the benefits of avoided deforestation in Paraguay**

https://www.unep-wcmc.org/system/dataset\_file\_fields/files/000/000/301/original/Paraguay\_brochure\_ENG\_150121.pdf?1423823959



## MONITORING THE IMPACTS OF PES / ECO-COMPENSATION

What to measure and how



Monitoring in payments for ecosystem service / eco-compensation scheme

#### MEASURING ECOSYSTEM SERVICES

#### GUIDANCE ON DEVELOPING ECOSYSTEM SERVICE INDICATORS





## Identifying the purpose of indicators

## Process of producing indicators

Mechanisms to ensure indicators are useful and therefore data continues to be collected Example ecosystem service value indicator used in UN Environment Global Biodiversity Outlook assessments.

Status of bird and mammals used for food and medicine



#### **Introductory guidance: Measuring Ecosystem Services**

https://www.unep-wcmc.org/system/dataset\_file\_fields/files/000/000/303/original/1850\_ESI\_Guidance\_A4\_WEB.pdf?1424707843

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## THE SUSTAINABILITY OF PES / ECO-COMPENSATION

#### Securing impacts in the long term



#### The Benefits of Natural World Heritage

Identifying and assessing ecosystem services and benefits provided by the world's most iconic natural places



Alongside recreational, tourism and spiritual benefits Natural World Heritage sites also deliver significant additional benefits, for example:

- 66% of sites important for water quantity and/or quality;
- **52% for carbon sequestration;**
- 48% for soil stabilization; and
- 45% for flood prevention.

Recognising these wider benefits (beyond the core aim of the policy) is likely to be important going forward as pressures on land-use and natural resources increase.

#### Wider benefits of investing in ecosystems

https://portals.iucn.org/library/efiles/documents/2014-045.pdf

# The relevance of natural capital

#### **Natural Capital includes:**

- Species
- Ecological communities
- Soils
- Freshwaters
- Land
- Minerals
- Atmosphere
- Subsoil assets
- Oceans
- Natural processes & functions

Maintaining the condition of the natural capital stock is essential to the long term flow of the benefits that are the focus of PES / Eco-compensation





Biodiversity is a crucial element of natural capital in this context, especially with respect to the wider benefits of payments



#### Towards a global map of Natural Capital

https://www.unepwcmc.org/system/dataset\_file\_fields/files/000/000/232/original/NCR-LR Mixed.pdf?1406906252

	Mountains, moors and heaths			Enclosed farmland			Semi-natural grassland			Woodlands			Freshwaters			Urban			Coastal margins			Marine		
	Qun	Qul	Sp.	Qun	Qul	Sp.	Qun	Qul	Sp.	Qun	Qul	Sp.	Qun	Qul	Sp.	Qun	Qul	Sp.	Qun	Qul	Sp.	Qun	Qul	Sp.
Food																								
Fibre																								
Energy																								
Clean water																								
Clean air																								
Recreation																								
Aesthetics																		/						
Hazard protection																								
Wildlife																								
Equable climate																								
				Above, at or just below target			Status Below target t			Substantially below target (>50%)			G.Mace et al (2015)											
Trend	Positive or not discernible Negative Strongly			A B C			B B C			B C C			<u>http://onlinelibrary.wiley.com/doi</u> /10.1111/1365-2664.12431/full											

#### **Natural capital: Assets and Risks**

Identify key assets and the trends in their status helps understand whether the benefits we draw from them are likely to at risk in the long term. This may not be observable from looking at the flows of benefits alone.

## **Conclusions and recommendations**

Understanding and mapping a wider range of ecosystem service benefits can help choose where to invest in protecting ecosystems

Monitoring the results is important to understand if payment have been effective in delivering the outcomes desired.

Assessing the wider benefits of investments can help understand who benefits and how, and provide wider support for the policy intervention.

Monitoring the status of the stock on which the benefits rely is also crucial to ensure the ecosystem is being maintained in a condition which means it will be able to continue to provide the benefits we are seeking in the longer term.



# THANK YOU

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