

# Integrated valuation of biodiversity and ecosystem services

# The challenge of articulating social, ecological and economic values in ecosystem services science and policy



# **Integrated valuation**

# What, Why and How "Colombian Context"

# **Objetives of the ES valuation**

- Environmental Accounts
- Environmental impact studies, Environmental liabilities,
- Imput to environmental policy tools
- ..... others
- Landscape Management (integrated valuation)

For landscape management (Colombian context and possible other countries) is fundamental to take into account additional elements in valuation of Ecosystem Services (ES):

- Complex reality
   (Multiple relations and actors associated with ES )
- Conflictive reality
   (Conflictive relations between actors associated with ES)



- Heterogeneous reality (different regions, different cultures, and different ways to understand "development")
- Has been studied in a fragmented way

Needs a more holistic and integral analysis: Integral valuation





**105 socio-environmental conflicts in Colombia** (Perez-Rincón 2014)

"Ecosystem services: a social metaphor for the analysis and management of environmental conflicts" Nuclear
Mineral Ores and Building Extractions
Waste Management
Biomass and Land Conflicts
Fossil Fuels and Climate Justice
Water Management
Infrastructure and Built Environment
Tourism Recreation
Biodiversity Conservation Conflicts
Industrial and Utilities Conflicts

Source: EJOLT project http://www.ejolt.org/maps/

**Socio-environmental conflict:** from the distributive ecological conflicts approach, they are defined as the social, spatial or temporal inequalities or asymmetries that arise in the use of ES and resources by humans.





### Trade offs complemented with:

-"Power Asymmetries" -"Environmental justice"





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# Why - Integrated Valuation?

-Contribute to the Landscape management through the "inclusion" of the multiple possible values associated with biodiversity and ecosystem services and the identification of the conflicts associated.

-Support for decision-making processes in contexts where there are heterogeneity of actors with diverse and contradictory interests and values.



# What must integral valuation include?

- Ecological, socio-cultural and economic values
- Qualitative and quantitative values (including biophysical, social and economic indicators)
  - Monetary and non-monetary values
    - Analysis of trade-off
  - Include valuation as a part of a process

Source: de Groot 2010



# Analysis of Tradeoffs

**Spatial - trade-offs** (benefits in one place – costs in another place / functions in one place and services in another place)

<u>Social groups - trade-offs</u> (someone wins – someone loses / different languages of valuation)

<u>Temporal trade-offs</u> (present benefits - future costs)

<u>Trade-offs among ecosystem services</u> (for example, provisioning services improving at the expense of regulating services)



### Inclusion of valuation in a landscape management process



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#### Source: Rincón et al 2014

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Rincón-Ruíz, A., Echeverry-Duque, M., Piñeros, A. M., Tapia, C. H., David, A., Arias-Arévalo, P. y Zuluaga, P. A. 2014. Valoración integral de la biodiversidad y los servicios ecosistémicos: Aspectos conceptuales y metodológicos. Instituto de Investigación de Recursos Biológicos Alexander von Humboldt (IAvH). Bogotá, D. C. Colombia, 151 pp.



#### ESQUEMA DE TRABAJO





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#### Instituto de Investigación de Recursos Biológicos Alexander von Humboldt



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#### 1000 Lordor barringing The Ecosystem Services Partnership

Worldwide Network to enhance the Science and practical Application of ecosystem services assessment



> Homepage > ESP Working groups > Thematic Working Groups > 60. Value Integration

#### 6D. Value Integration

#### Value Integration...

... Is the methodological challenge of consistently combining a diversity of value systems in resource use decisions.

#### Vision of the TWG Value Integration

A world where the multitude of values of nature held by peoples is respected, where natural resources are used within local and planetary boundaries and where benefits and burdens from the use of nature are Biodiversity & Ecosystem equitably spread within and across societies and generations.

#### Mission of the TWG Value Integration in ESP

Promote principles of strong sustainability and environmental justice in valuation methodologies, advance the science and practice of ecosystem service valuation, and create awareness on the social, ecological, and economic implications of valuation choices.

Pre-announcement: call for special issue Values +68. Ecosystem Services and "Integrated Valuation in Ecosystem Service Assessments" Public Health

#### Home

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Frameworks & Typologies

Services.

+3. ES Indicators

+4, Mapping ES

.5. Modeling ES

Valuation of ES

+6A. Cultural Services &

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OpenNESS fue un proyecto de investigación europeo que traduce ambos conceptos (SE y capital natural) en marcos operativos que proporcionen soluciones probadas, prácticas adaptadas para V SU integración en la gestión del territorio, del agua y de las zonas urbanas así como en la toma de decisiones.



Capital and Ecosystem Services

#### State-of-the-art report on integrated valuation of ecosystem services

Deliverable D.4.1 / WP4

25 July 2014

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Established in 2012 in Panama by over 100 governments as a mechanism to provide scientific information in response to requests from policy makers

**Current membership includes 124 governments** 

Placed under the auspices of UNEP, FAO,UNDP, and UNESCO, and administered by UNEP

#### IPBES Webinar Series – Webinar 4:

The multiple values of nature, of its benefits to people and of its contribution to a good quality of life.

# The IPBES Values Guide

Host: The IPBES task force and technical support unit on capacity-building Co-Organizer: The IPBES task force and technical support unit on values Presenter: Patricia Balvanera, Head of the TSU on Values and Expert of the IPBES.



www.ipbes.net



# A case study in Orotoy River Basin (Colombia)





# Location

Instituto de Investigación de Recursos Biológicos Alexander von Humboldt



The Orotoy River Basin is located in the department of Meta, in the vicinity of the municipalities of Guamal (Southwest), Castilla la Nueva (South), Acacías (North and Northwest) and San Carlos de Guaroa (Northwest) and has a total area of 18,809 ha with approximately 4,978 inhabitants in a total of 24 rural districts







# Trade offs between Ecosystem Services



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-Workshops -Semi-structured Interviews



## Land cover - the Orotoy River Basin (1986 -2000 - 2014)





# **Principal Drivers of Change identified by the population**

# 1. Oil Activity (exploration and extraction)



Areas of exploration and production in the Orotoy river basin. Source: Agencia Nacional de Hidrocarburos (ANH)





### Groups of actors associated to the river basin



Figure 3. Groups of actors in terms of water resources





Dependence on water ecosystem services and the actors' influence on the use and management of water ecosystem services

- Interviews with Local Groups
- Workshops





# Reexamining the inclusion of values: from the common unit to the inclusion of different values





High

# **Reexamining the inclusion of values: from the** common unit to the inclusion of different values



Scenarios are a participatory construction where differences are recognized and technical elements are integrated. It would even permit the insertion of different values.

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Low

UNCERTAINTY

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Scenarios analysis: more than a method for the integration of values, could be considered a method for the inclusion of values, trade-offs and contexts.







# **Conclusions and reflections**

1. The management of biodiversity and ecosystem services involves significant challenges in decision-making, given the diverse, complex and conflictive territorial contexts in countries such as Colombia. The recognition of multiple values (monetary, sociocultural and ecological) in policy responses represents the main challenge in building methodologies for the analysis of ES.

2. The integration of values is not just technical but also requires a political process based on reaching agreements with the actors through scenarios of use of biodiversity and ecosystem services.



Equal opportunities

sheholders

### **3. Power Asymmetries**

 Generation of information about ES and values of ES.

2. Capacity building for local empowerment

a way to

<u>Correct power</u> <u>Asymmetries</u>



3. The IVBSE represents an approach to the plurality of values, beginning with a participative construction process for the inclusion of ecological and social values, the determination of socio-environmental conflicts, the analysis of tradeoffs; the evaluation of governance; and the design of policy scenarios for landscape management

