Valuing and financing forests for water

Alessandro Leonardi, CEO, Etifor | Valuing Nature

Global workshop on ecosystem-based adaptation in transboundary basins

Geneva, 30° April 2019
Content

• Why valuing and paying?
• How to do and what to pay for?
• Examples
• Recommendations
Why?

Climate adaptation need a mixed green-grey infrastructure approach

• Point vs landscape action
• Public purchase vs community landscape management
Why?

To change behaviours

Land managers

Final users
Why?

- Decreased public spending
- Post 2020 targets: $100 billion/year of conservation measures
- Current: $4-10 billion/year
- Need to involve the private sector

Dinerstein, 2019

Source: IMF Fiscal Affairs Departmental Data, based on Mauro et al. (2015) and Our World in Data.
How

Biophysical structure (forest ecosystems)

Functions (e.g. water retention, nutrient cycle)

Services (e.g. flood protection, improving water quality)

Benefits (decreased flooding probability, cheaper drinking water)

Value (WTP of the service beneficiaries)

Service attribute (flood probability, water quality, quantity)

Payments, incentives, regulations

Green Infrastructure / Improved management

Translating in economic terms the value of environmental benefits

Human perception (cultural & economic importance given to the service)
POLICY TOOLS

Policy or regulation based

- Open trading schemes
  - Regulatory Markets
    - Habitat/Biodiversity banking
  - Voluntary Markets
    - Offsetting and instream buy back
- Public payments
  - Government payments
  - Taxes
    - Agro-environmental payments
    - Carbon, water taxes, bills.
- Self organized deals
  - Voluntary Markets
    - Consortium of buyers/suppliers
    - Beneficiary pay fund
    - Bilateral agreements

Payments for Ecosystem Services (PES)

Market-policy tools that allow:

• **transfers** of resources between social actors, which aims to create **incentives**

• to **align** individual and/or collective land use decisions

• with the **social interest** in the management of natural resources

(Muradian et al., 2010)
How

Problems → Solutions → Mapping and valuing ES → Stakeholder analysis → Meet the suppliers → Meet the buyers → Design and planning

Know & Check  → Research and Development  → Engagement and feasibility

SCIENCE  → INNOVATION  → GOVERNANCE
Frequency of funding sources

50% of schemes have multiple funding sources

No constant payments

- Utility/Public budget allocation: 49%
- Private budget allocation: 30%
- Agro-environmental subsidies payments: 24%
- National, International, EU fundraising: 16%
- Water rights (fishing, irrigation, etc.): 16%
- Consumer water levy/fees: 14%

Long-term
Integrated financing

Funding / Quantity of ES

- PES funds
- Win-win in kind schemes
- EU structural and environmental funding
- Agro-environmental schemes
- Law compliance

Number of actors and/or land covered by incentives

- Multi-utility – Private sector
- Farmers associations, NGOs, etc
- Public authorities and CSO
- National gov. and EU
## 11 typologies of PES

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<th>Sub-type</th>
<th>Major drivers</th>
<th>Main financing sources</th>
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<td>Public – non-voluntary</td>
<td>Compensation for legal restrictions</td>
<td>Increase acceptance of legal restrictions through compensation of opportunity costs</td>
<td>Public budget allocation or scope taxes</td>
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<td>Public regulated</td>
<td>Agri-environmental schemes</td>
<td>Public goods provision and partial cover of adoption of management practices</td>
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<td>Public bilateral agreements</td>
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<td>Compensatory private initiatives</td>
<td>Water charge - public bilateral agreements</td>
<td>Investing on water quality. Charging customers for water related services via water charges</td>
<td>Scope taxes</td>
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<td>Regulated trading initiatives</td>
<td>Regulatory compensation</td>
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<td>Trading initiatives</td>
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<td>Private voluntary payments</td>
<td>Avoided impacts bilateral agreements</td>
<td>Avoid use of chemical inputs through paying for opportunity cost incurred (no associated benefits)</td>
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<td>Multiple benefits partnerships</td>
<td>Improve hydrological service provision through natural capital maintenance and improvement. Based on partnership model</td>
<td>Multiple sources and instruments</td>
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<td>User funded schemes</td>
<td>Charging final beneficiaries to invest on targeted hydrological services</td>
<td>Beneficiary pays fund</td>
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Example: Operational Group Brenta 2020

- Brenta aquifer provides \textbf{65 Mln cm / year} of pure water, serving 20% of Veneto population

- Equal to \textbf{165 Mln € / year} (2.5 €/mc)

- Green Investments on water source protection from water utilities = \textbf{0 €}

- How to internalize Green Infrastructure costs in water sector/bill?
Water bills and the ERC (art. 9 WFD)

- Reforestation, improved forest management for water safeguards and abstraction areas
- Environmental and resource cost recovery through water bills
- Drinking water abstraction from forest areas
- Distribution through the aqueduct pipelines
Forest infiltration areas to increase water table of the Brenta River Basin
Improved FM to avoid erosion and dam sedimentation (IT and FR)
Forest management for Resilience to Wildfire in water catchments in Colorado (US)
Upstream Thinking (UK)

Umbrella: 10 schemes working in different ways to improve the health of upstream water sources, depending on local conditions: tenure, ecosystems, water issues, etc.
• Economics and governance of payment schemes with a practical view

• Case studies fact sheets

• The most complete and up to date database (177 active schemes)
Creating an enabling legislative framework

- Climate adaptation need a landscape approach
- PES tools are useful to align interests at landscape level
- No new policies or regulations! But integration of existing ones
- Vertical and horizontal integrations of management bodies/structures
- Provision of technical advice platforms, promotion of best practices and seed/start-up funding
Marketing is the act of making change happen. It involves creating honest stories – stories that resonate and spread (Seth Godin, 2018)