The ES concept and its use in the conservation and rural policies

JF Le Coq

CIRAD – UMR ART –Dev / UNA – CINPE

In CATIE, 5th of November 2013

Joint PCPs Workshop on

MEASUREMENT and PAYMENT for ENVIRONMENTAL SERVICES

4th to 8th of November 2013

agroforestry systems with perennial crops

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PP & I-AL

Objective

- How the concept of ES is used in policy and instruments for conservation and rural areas ?

- What are the current debates on these instruments ?

- What is the role of ES measure / ES valuation in policy process and instruments design ?

Outline

- Dynamic of ES concept and introduction in Policy and instruments

- ES in the diversity of policies and instruments
  - Diversity of instruments
  - PES instruments
  - Other instruments

- Issues on measure in Policy process and instrument design

Historical dynamics of ES concept(s)

Ecosystem services

Constanza et al, 1997

Daily 1997

MEA (2003-2005)

Proto-story (1970 – 1997)

- Study of critical Environement Problem (SCEP 1970) : impact of human impacts on the nature
- First conceptual explicitation Erlich, 1982; Erlich y Mooney , 1983; Erlich y Wilson , 1991)

"mediatization" of ES nocion (1997-2005)

-Accademic controversies on Costanza et al. (1997)

-**MEA process (2000-2005**) : Estabilización del concepto de SE y de sus tipos

Politc use… (2005…)

- multiplication of articles
-+ international initiative (IPBES)
-**Legitimating of conservation policies oriented toward SE conservation / PES**

Amplification and ?confusion ?

Multiplication And diversification of experiences

Market based instruments

Debate on the PES definition and conceptualization

Environmental servicces and PES

Wunder (2005)

international workshop on environment mercantilización (1996-2001)

search for fundiing mecanisms for sostenable forestry (África del Sur, 1996, Oslo 2001)

Autonomization and ampliation of refelxion on PES schemes (2002-2005-…)

- 2002 first publication on PES (lLandell-mills y Porras ; Pagiola, Bishop, landell-Mills ; Pagiola y platais
- 2005 Wunder definición pf PES
- 2008, 2010 special issues in Ecological economics

1970 1980 1990 2000 2005 2010

Source: adapted from Meral (2012)

ES and policies: different agendas

- ES integration in international agenda and international diffusion
  - IPCC, IPBES (Bonin, 2012;…)
  - Role of NGOs, International Cooperation,… (Hrabanski et al, 2013; …)

- ES integration and use in national policies and instruments and results
  - Forest / or Conservation instruments
  - Agriculture / agro forestry instruments
  - Other ecosystems (marine ecosystem… urban)

ES and a diversity of instruments

- Regulatory instruments
  - Spatial or not spatial instrument
- Payment for ES (positive / conditional) … MBI
- Certification and Ecolabel
- Planning
- Green accounting

PES genesis and justification (in literature)

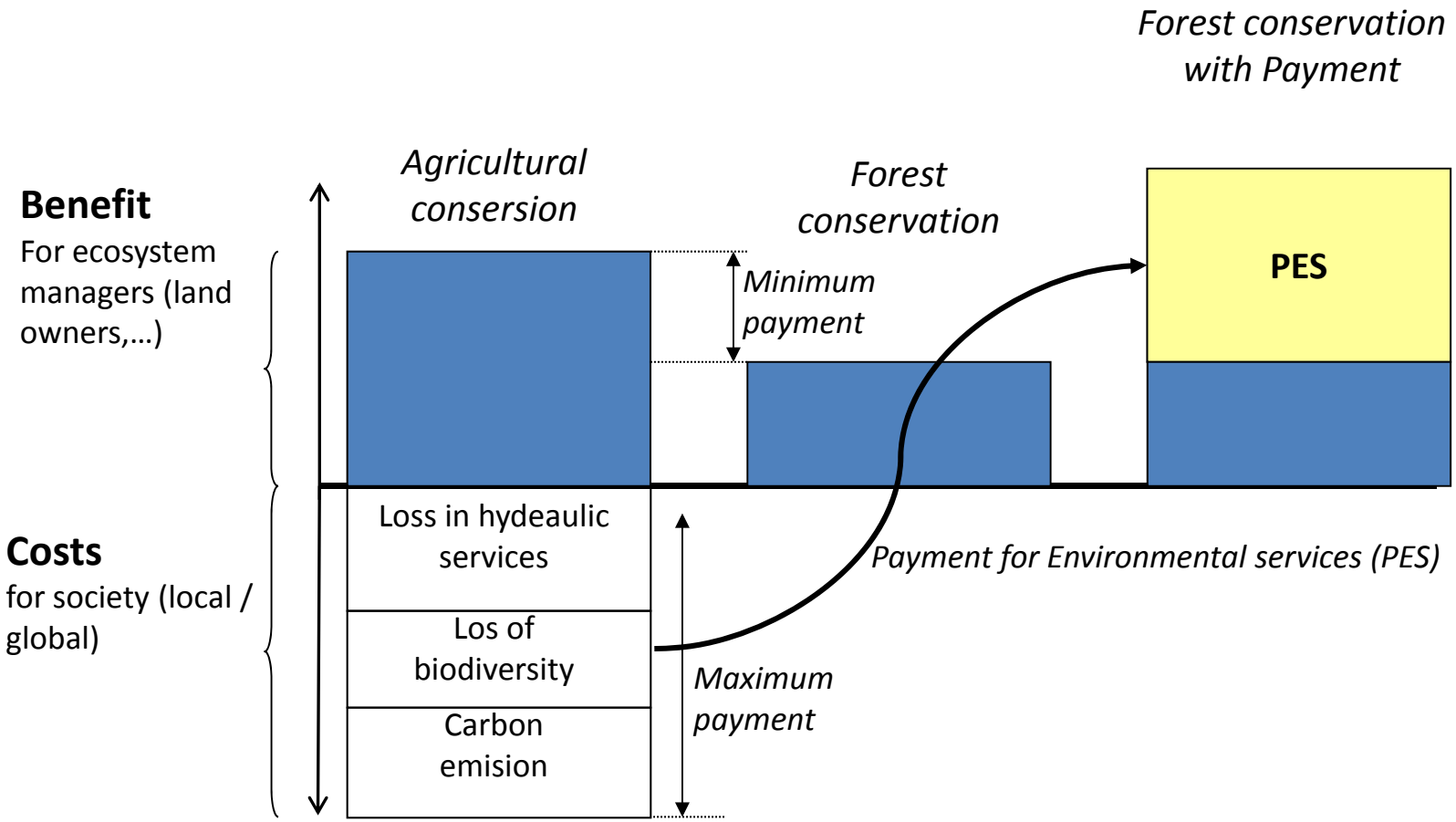
- Difficulties of source of funding for conservation purposes
- Limited national budget (Developing Countries) y restriction in international cooperation budget
- Controversial results of existing instrument:
  - *Command and Control* (CaC)
  - *Integrated Conservation and Development Program* (ICDP)

➡ **PES as an alternative inovative instrument (direct and positive) to attack conservation issue**

Economic principle

- **Externalities :** a economic agent generate with its activities efects (positive of negative) on other person

➔ integrate externality in economic decision

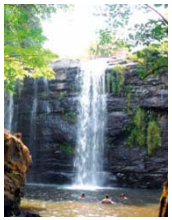


Adapted from Pagiola and Platais (2007)

PES definition

- PES reference definition (Wunder, 2005)
  1. A **voluntary transaction** where
  2. A **well defined environmental services** (ES) -or the land use that enable to provide this ES-
  3. Paid by (at least) one **ES users**
  4. To (at least) one **ES providers**
  5. If, only if, the ES provider secure the sustainable provision, of the ES **(**Conditionality).

- The 4 environmental services "classical"
  1. Carbon capture and storage of Carbon
  2. Watershed protection (hydraulic services/ water)
  3. Biodiversity conservation
  4. Scenic beauty



- **Are defined in Costa Rican forestry law 7575, and** Wunder, 2005; Wunder et al. 2008; Engel et al. 2008, ….) ; this classification differs from the MEA (2005)

Different types of PES

- **PES types according to ES**
  - **PES for watershed** (*watershed*)
    - PES hydraulic (tariffs – ex :ESPH,…)
  - **PES for Carbon**
    - MDP, REDD, carbon market
  - **PES biodiversity**
    - Conservation contract
  - **PSA for scenic beauty**
    - Ecotourism, park entries fees

- **PES for different services (*bundled payment*)**
    - Forest PES (ex PESP Costa Rica)

- **PES types according to funding source** (Wunder et al.2008)
  - *User financed PES*
  - *Government financed PES*

PES: multiplication of experience and conceptual debates

- Multiplication of PES experiences ….
- More PES-like than “real” (Wunder) PES
- Alternative conceptualization (Muradian et al, 2010):
  - « PES as a transfer 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”.

Multiple typologies of PES (and MBI)

- Degree of commoditization, importance of economic incentives, directness (Muradian et al, 2010)
- General PES / Contractual PES (Laurans et al, 2011)
  - Type of funding from ES beneficiary (Voluntary/compulsory)
  - Type contract (collective/individual)
- PES conceptualization (Schomers& Matzdorf, 2013)
  - Coasian / Pigouvian / beyond Coase and Pigou.
- PES in Market Based Instruments for Biodiversity and ES (Pirard, 2012)
  - Coasian type agreement (PES a la Wunder) / reverse auction
- RUPES (Van Noordwijk & Leimona, 2010)
  - commoditized ES (CES),
  - compensation for opportunities skipped (COS),
  - co-investment in (environmental) stewardship (CIS)

Issue and debates on PES and ES in instrument

- Efficacy
  - Trade off
  - …Commoditization of the nature
- Efficiency
  - Additionality
  - Transaction costs
  - Perenity
  - Leaking effects
- Equity :
  - Accessibility
  - Effect of « poor » or differentiation
- Legitimacy
- Sustainability

- One instrument or Policy mix

Sources: Wunder et al, 2008; Muradian et al, 2010; Pagiola et al, 2005; Bulte et al.,2008,…

Limits of PES

- **Not all payments are markets**
  - Most PES schemes do not fulfill the strict criteria that define markets (high commoditization; high conditionality; voluntariness), mainly due to the inherent complexities of socio-ecological systems and significant transaction costs.

- **Outcomes depends on institutions**
  - The design of payments cannot be "depolitized," and emphasis should be given to the process of policy design.

- **Monetary incentives might crowd out intrinsic motivations**
  - Payments do not always strengthen social and ethical motives, and they may actually undermine such motives in some situations

- **The traps of the compensation logic**
  - The expectation to counteract highly profitable (yet environmentally damaging) economic activities with payments (compensation) may create scenarios where the protection of ecosystems is only possible with increasing levels of compensation due to the increased opportunity cost of conservation.

Source : Muradian et al, 2013

ES concept in other instruments

- ES in spatial regulation instrument : Biologic corridor
  - ES explicitly used to justify limits of area
  - ES to schedule payments

- ES provision in Ecolabel
  - Structural convergence and divergence with PES (Le Coq et al, 2011)
  - No explicit use of ES and controversial effect
    but potential to adjust norms and systematic evaluation (Le Coq et al, 2012)

- ES in planning (De groot et al, 2010;…)

Costa Rican experiences

Instruments	ES use	Ecosystem types	Funding	Governance*
Protected Areas	Not explicit (biodiversity) (all ES)	Natural ecosystem (habitat)	Public (projects)	State driven Territorial
Biologic Corridor	Explicit todos ES (biodiversity)	Forest Agro-ecosytem landscape	Public + (proyects)	State driven + collective action Territorial
National PES FONAFIFO	Explicit use Reformulation Adjustment all ES	Forest + AFS	Tax + project + private contribution + etc.	State driven / controlled + private control (« hybrid) ») Sectorial (forestry)
PES ESPH	Explicit new mecanism Hydraulic Service	Forest	Water Tarrif	Private + public control (sugef)
Certification (RFA, organic)	Implicit, All ES	Agro-ecosystem Landscape	Premium	Private Comodity chain
Agricultural benefit reward (RBA/RBAO)	Explicit All ES (EB)	Agro-ecosystem landscape	State budget	Public Sectorial (agriculture)

*** : Decision rules/ implementation, Regulation mode,**

Adapted from Le Coq et al, 2012

ES concept in policies and instruments

- ES provision as the final objective of the policy / instrument
- ES as a framework to justify existing policy/instrument
- ES as a framework to better adjust instrument
- ES as a tool to design instrument
- ES as a tools to evaluate policy/instrument

ES Measure and Economic valuation

- ES measure (quantification of ES)
  - Generic or site-specific measure
  - Link practices/land use and ES provision
  - Useful for policy in general (sensibilisation), not only for PES
- ES valuation (economic valuation)
  - Different valuation methods for different purposes
  - Often linked with PES design
  - ES economic value is generally different from ES “real” payment in PES program

ES mesure and ES valuation in Policy Cycle

ES mesure:
- Choice between instruments
-PES design (conditionality/ targetting)
-Regulation (collective action)

ES valuation:
- PES design (amount, differenciation)

Both
- Resource for coalition

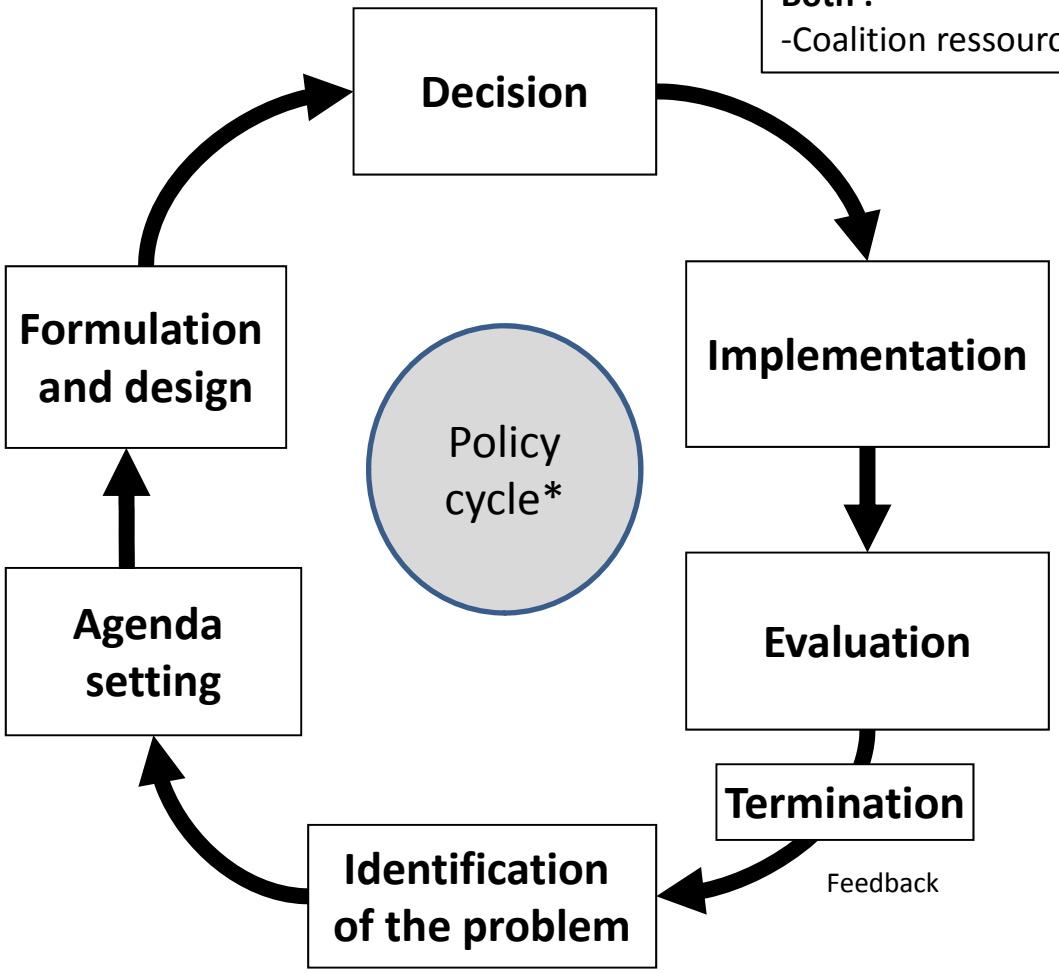
ES mesure & ES valuation :
-Conscientization

Economic valuation
- Trade off between sectors
Both :
-Coalition ressources

ES mesure and ES valuation
-Conditionality
-(payment level readjustement)
-Adjustment of programs
-Learning process

ES mesure
-Evaluation of PES (ES delivery)
ES valuation
-Evalutaion of PES (efficiency,…)

ES mesure & ES valuation :
Revealing the problem of SE loss (global or specific)



*: Birlkland, 2005

Costa Rican experiences

Instrument	Rational and Use of ES mesure and valuation
Protected Areas	Biodiversity inventory to justify investment in parks Park fee valuation
Biologic Corridor	Biodiversity zoning (Gruas) Justification of limits and general funding
National PES Program (Fonafifo)	PES conservation : Payment according to opportunity costs (extensive animal husbandry) PES reforestation : according to cost of investment
PES ESPH	WTP, Value of water, cost of provision/remplacmenet Decision from Sugef Actual tarrif < to ES valuation and WTP
Certification (RFA, organic)	No links betwen value and payment level May justify practices included in the standard
Agricultural benefit reward (RBA/RBAO)	No links with ES valuation % of total investment (to cover ES part)

Source: Durey, 2010; Durey, 2012; Le Coq et al, 2011, Legrand, 2013; Murillo et al, 2011

Characteristics of measure for policy process and instruments

- To be analyze according to objective of measure in policy cycle

- Type of measure
  - Generic / site specific
  - Precision of the measure / evaluation

- Challenge of measure for policy making, a trade off between different characteristics
  - Cost
  - Time consuming
  - Understandable / friendly
  - Legitimacy
  - Accuracy
  - Site specific / generic
  - Adaptation to demand / purpose
  - Scale specificity
  - …

Conclusion

- Many conservation and rural instruments existed prior to ES conceptual development
- ES concept lead to some instruments innovation but mainly reformulation and adjustments
- ES is a potential tool for a wide range of adjustment of existing tools (*from a model to a referential…*)
- ES measure / valuation are necessary, but not compulsory for ES provision incentives design
- ES measure / valuation should be adapted to policy institutional contexts

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Thanks

jflecoq@cirad.fr