VERTIGO LAB
ECONOMIE & ENVIRONNEMENT

INNOVATIVE INSTRUMENTS FOR WDM
PAYMENTS FOR ENVIRONMENTAL SERVICES

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Regional workshop – CMI Program

AFD · WORLD BANK GROUP · cmi CENTER for MEDITERRANEAN INTEGRATION | CENTRE pour l'INTÉGRATION en MÉDITERRANÉE مركز التكامل المتوسطي · Plan Bleu · irstea

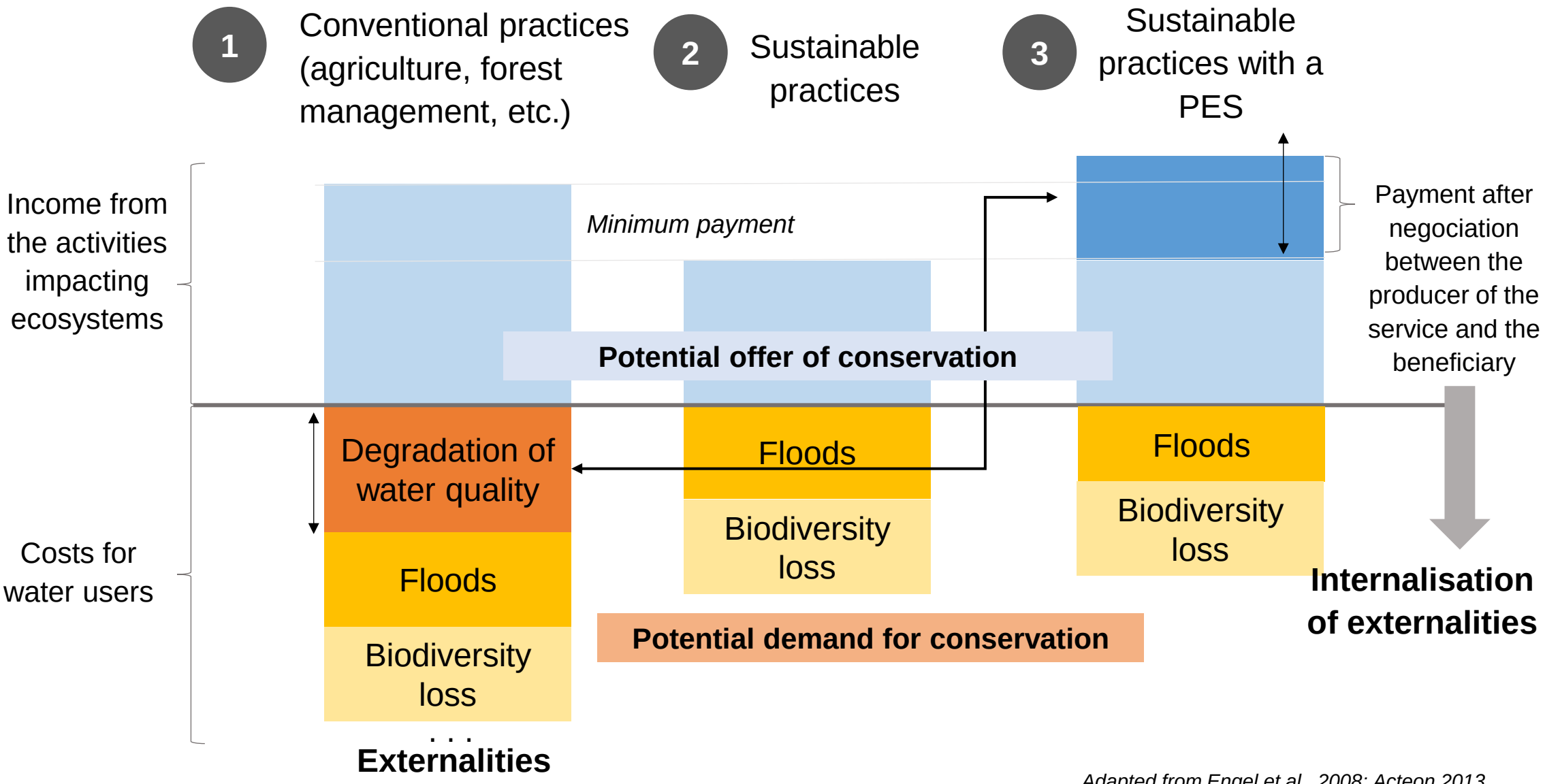
What is a Payment for environmental services ?

Economic tool aiming at rewarding the conservation of ecosystem services by enabling the maintenance or restoration of the ecosystem through a **financial transfer** (payment) that recognizes the **existence of benefits** (positive externalities) for the community or users benefiting from this environment.

3 **criteria for defining a PES (Wunder, 2005) :**

- **Voluntary,** (often negotiated) transaction
- Clear focus on **environmental outcomes** (specific environmental services are targeted)
- **Conditionality** in a **contractual relationship**: providers commit to action leading to service provision, and buyers to payments – with monitoring and sanction mechanisms to ensure compliance

ECONOMIC MECHANISM



Adapted from Engel et al., 2008; Acteon 2013

PES AND WATER MANAGEMENT

4 main categories of ecosystem services relevant for the implementation of PES

- Carbon sequestration and storage
- Preservation of biodiversity
- Preservation of landscape
- **Protection of a watershed (cf historical examples : Nestlé waters, Catskills)**

Reconsider the role of natural ecosystems in water supply

Encourage the production of positive externalities

Improve water quality, preventive action

Ecosystems

Services

Water storage

Water purification

Low-water level support

MAIN CHALLENGES FOR THEIR IMPLEMENTATION

- ✓ Governance, limit the transaction costs. Wide variety of PES today.
- ✓ Fix the right level for the payment (what is the value of the ecosystem service ? Non-use values ? Opportunity costs?)
- ✓ Measure the environmental effectiveness of the PES (without environmental externalities, the mechanism turns into subsidies): what are the practices to encourage?

Few examples in Mediterranean

2 Success factors

- Prior collective action to manage the resource in a sustainable way.
- The economic mechanism should be the best option for solving the problem (better than regulation)

NEW CALEDONIA

Feasibility study for PES in Yaté Lake

- Two main beneficiaires: ENERCAL and VALE NC
- Service of water replenishment by vegetal cover of watershed during dry season estimated at **3.3 M euros / year**
- Service of erosion regulation that prevent siltation (not measured)

PES learnings:

- Failed to implement PES due to lack of interest to pay for free services
- Question of additionnality (what if the watershed was not protected?)

MEDITERRANEAN FORESTS AND WATER MANAGEMENT

Payments for water-relative **forest services** : example of **PES-like schemes** driven by public authorities in Italy (Pettenella et al., 2012)

PES parameters	Hydropower generation	Tap-water provision	Mineral water supply
Start-up (voluntariness)	Compulsory compensation. Governmental and legislative driving force (Decree 1775/1933 and Law 959/1953)	Voluntary compensation, following the Galli's Act indications (art.18 and 24, Law 36/1994)	Voluntary compensation, following Decree 152/2006
ES definition	Forest hydrological protection (indirectly mentioned in Decree 1775/1933 and Law 959/1953)	Water cleaning service and erosion mitigation service	Set aside forest land to improve its natural evolution
Buyer/s	Hydropower companies	*Romagna Acqua S.p.A.*	Mineral water industry
Seller/s	River basin municipalities and forest owner associations	Municipalities in the catchment area	Municipalities in the spring catchment area
Conditionality	Forest operations to reduce erosion, landslides and forest instability	Forest management change towards close-to-nature silviculture	Land management change to reduce pollutants in the watershed
Basic principle	Polluter-pay-principle	Buyer-pay-principle	Buyer-pay-principle

Forest management practices that reduce soil erosion – 10 000m3/year of avoided soil erosion. Payment scheme to encourage forest owners to adopt these practices.

El Kala National Park (Algeria)

VERTIGOLAB ECONOMIE & ENVIRONNEMENT *has valued the ecosystem services of the National Park of El Kala (GIZ Project)*

- **20 ecosystem services**
- **14 values of services** estimated to amount **8,93 Bn DA per year** (= 63,6 M €)
- All services are dependent upon the lake ecosystem

- Water provision
- Water quality
- Flood control
- Dam siltation control

PES DEVELOPMENT IN EL KALA ?

Ecosystem services provision contributed to increase concertation for National Park development and recognition

Services	Value	Beneficiaries
Water provision (tap and irrigation)	*(non évalué)*	Local pop, farmers
Water quality	**32,6 M DA par an = 230 K €**	Local pop, farmers, fishers, State (avoided costs)
Flood control	**110 M DA par an = 780 K €**	Local pop, farmers, fishers, State (avoided costs)
Dam siltation control	**981 M DA par an = 7 M €**	Local pop, farmers, fishers, State (avoided costs)

Workshop scheduled in El Kala on 21st April 2018 to present ecosystem services valuation, benefits of EL Kala Park management and development of potential economic mechanisms

Thank you !

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