Remuneration of Positive Externalities in Mountain Regions
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By

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Sustainable Agriculture and Rural Development in Mountain regions (SARD-M)

Related resources:
See the Training Path Policy Learning Programme 2009 for other related resources. Download the Programme Summary for background information and the Overview of the Programme Modules and Sessions for a complete list of resources developed for the Policy Learning Programme 2009.

About EASYPol
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Contents

1) Introduction: Importance of mountain regions for food security

2) Three key questions:
   • What are positive externalities of agriculture in mountain regions?
   • Why and how to develop remuneration systems?
   • What are the bottlenecks?

3) Conclusion: Remuneration of positive externalities in mountain regions presents many challenges
Mountain populations are among the most vulnerable in the world: physically isolated, socially and politically marginalized.

More than 10% of the world population live in mountain regions.

The prevalence of food insecurity in mountain regions is 34% (compared to 13% for the world).
What are positive externalities in mountain areas?

Externalities are the unintended consequence of agricultural production. Externalities are non-market side effects of an economic activity. They may be positive (e.g. preventing floods) or negative (e.g. causing floods)

Examples of positive externalities:

- Biodiversity Conservation
- Carbon Sequestration and Climate mitigation
- Soils protection and preservation
- Water quality and supply
- Natural hazards protection and prevention (avalanche, flood)
- Cultural and natural landscapes and recreation

There are also negative externalities: ex. loss of biodiversity
What are positive externalities in mountain areas?

Mountains are specific and sensitive ecosystems providing critical services to the world population:

- All the major rivers in the world have their headwaters in mountains.
- Around 20 plants supply 80 percent of humanity’s food. Six of them originated in mountain areas - maize, potatoes, tomatoes, barley, sorghum, and apples.
- Mountains are a sensitive indicator of climate change effect and have also a large potential to mitigate it (forest and carbon sequestration).
What are positive externalities in mountain areas?

**Producers of externalities**
- Farmers
- Foresters
- Hunters
- Associations
- Rural communities

**Buyers of externalities**
- Local, regional and national Governments
- International Organization (World Bank)
- National and International NGO
  - Firms
  - Hydro-electricity providers
- Tourists and Tourism Operator
  - Consumer
Examples of remuneration of positive externalities in mountain regions [1]

- **Global:**
  - total carbon market (2008): USD 120.2 billion (double 2007, quadruple 2006); (not in mountain regions only)

- **Regional:**
  - **Nicaragua, Costa Rica, Colombia:** Regional Integrated Silvopastoral Ecosystem Management Project
    - US$ 2 000~2 400 / cattle farmer (from 2003 to 2005)
    - results: impact of payment: 9 730 ha Land Use Change in 2006; carbon sequestration: 71% increase
Examples of remuneration of positive externalities in mountain regions [2]

- **National:**

  - **France:** Quality labels AOC/ Protected Denomination of Origin
    - income and wealth generation from sales: turnover of **230 million euros** in 2007 for the seven AOC cheeses in Savoie Department
    - employment creation: AOC industry is more labor intensive
  - **Nepal:** RUPES Kulekhani hydroelectricity scheme
    - about US$1.50/farmer/year from the royalties paid by state hydroelectric company to plant trees and construct terraces payment
  - **Morocco:** Farmers in mid mountain areas (Western High Atlas) can earn from agri tourism to 73% of their income, or 3500 $/year
  - **Bhutan:** Damage by wildlife to agricultural household: 82 $/year, sample study

Click here to see more info
Why remunerate mountain externalities providers?

- Preserve traditional know how to adapt to climate change
- Mitigate climate change (C sequestration)
- Maintain / restore natural productivity
- Maintain / restore provision of environmental goods to the society
- Transfer resources to mountain communities / contribute to reduce poverty ~ food insecurity
- Increase social dialogue, capacity building

As public good services, positive externalities are so far often not paid i.e., nature’s services are often free. Consequently they tend to decrease. But the society increasingly attaches more value to environmental services (e.g. clean drinking water)
How to remunerate mountain externalities providers (1)

- **Through incentives:**
  - by paying farmers to change their production system or to diversify land use
    
    *Ex: Buffer Zone in Mozambique:* $35 per hectare per year to farmers for seven years for carbon sequestered by various land use activities
  
  - by paying local communities to stop hunting, deforestation, to plant trees...
    
    *Ex: Working for Water Programme in South Africa:* government hire 20,000 people (52% are women) to clean invasive alien plants providing them a regular wage and training
How to remunerate mountain externalities providers (2)

■ **Through the market, payment:**
  - quality label product: paying more for mountain quality product
    
    *Ex:* In France milk price in 2006: 0,31€/l in national average as compared to 0.52€/l in Beaufort A.O.C farms*
  
  - fees

■ **Through the market, in kind:**
  - beehives from down stream communities

■ **Other ways of remuneration:**
  - users’ rights (land / pasture, water)
  - taxes reduction
  - grants (by NGOs)
  - ...
How to remunerate mountain externalities providers (3)

Content / Measures

Peasant family provides:

- Goods & Products
- Services

1. Determination of services based on the needs of sustainable development in the region

2. Concept of remuneration

3. Market development instruments

4. Compensation methods

5. Control of primary production and services delivery

6. No unfair competition
   No fraud

7. Monitoring / Oversight (of 4 & 5)
An efficient remunerating system has to:

- Rely on trust and mutual understanding of the issues (preliminary baseline assessment, awareness raising of stakeholders)
- Offer an acceptable price for each party: covering the foregone benefits of the provider and valuing the improved service to the user
- Be based on a clear agreement with a timing for remuneration + eventual broker
- Take into account transaction costs (they should not exceed payment)

Control / monitoring (certification body) arbitrary instance

Evaluation, communication

Communication to stake holders and to society
How to remunerate mountain externalities providers (5)

- Each case depends on the overall context at national level:
  - Legal framework and regulations (basic level / penalty; checking the overall eligibility of stakeholders; ensuring global framework [food quality label, brand marking]...)
  - Training capacity
  - Control (+ control certification), to remunerate (property rights) or to allow an efficient remuneration frame (broker)
How to remunerate mountain externalities providers (6)

Participatory processes:

- Involvement of local institutions (districts, municipalities)
  - Ability of institutions to work together: ministries ~ directions in charge of agriculture / environment / finance / forest / water resources....
  - Attention to minorities, poor people
Bottlenecks (1)

- A buyer has to be found: user accepting to pay directly or indirectly
  
  *Ex:* Private company on the Voluntary Carbon market: 5.7 $/T 2008
  
  Government (payment for hydrological services in Mexico)

- Foregone benefits of the provider must be smaller than remuneration (opportunity costs)

- Transaction costs must be as low as possible (some times 20% of remuneration)
Bottlenecks (2)

**Poverty reduction:** poverty may not be reduced for the poorest segment of the community for the following reasons:

- Participation to payment schemes is often connected to property rights or users’ rights that the poorest don’t have: the poorest may be excluded.

- Poorest people often lack necessary skills and investment capacity to take advantage of new opportunities.

- Poorest people are often risk adverse or simply unable to conceive another future.
Bottlenecks (3)

Compatibility with trade agreements:

When public funds are to be used, it is important to ensure that the modalities of these payments are compatible with multilateral trade rounds agreements: they must fit in WTO's green box, and not distort trade.
Conclusion / Challenges

Challenges

- The remuneration of positive externalities offers opportunities to transfer resources to mountain communities in a way that is compatible with multilateral trade agreements.
- It has the potential for reducing poverty and food insecurity in different ways but the poorest people might be more difficult to reach.
- It contributes to the preservation of our environment.
- The remuneration of positive externalities is a complex issue but many examples in the world are showing that success is possible.
Further readings

- **FAO**, 2007, the State of Food and Agriculture Paying Farmers for environmental services, Rome, Italy

- **Porras I., Grieg Gran M., Neves N.**, oct 2008, All that glitters: A review of payments for watershed services in developing countries, IIED

- **Leslie Lipper, Takumi Sakuyama & al.**, 2009, Paying for Environmental Services in Agricultural Landscapes, FAO & Springer ed.

Links

Related projects

- Payment for Environmental Services from Agricultural Landscape FAO
- Quality linked to Geographical Origin (FAO)
  http://www.foodquality-origin.org/eng/institution.html
- GIAHS Globally Important Agricultural heritage Systems (FAO)
- RUPES: Rewarding Upland People for Environmental Services (IFAD)
  http://www.worldagroforestry.org/sea/networks/RUPES
- International Network to promote payment for ecosystem services The Katoomba Group
  www.katoombagroup.org
SARD-M project Functioning

**Donors**

- five-year multi-donor project (2005-2009)
- French and Swiss (and Japanese) governments

**Structure**

- **Adelboden Group**: Advising and lobbying
- **Project Steering Committee**: a guidance mechanism
- **SARD-M Project Team**: the operating arm
- **FAO Inter-Departmental Task Force**: backstopping
- **Regional Focal Points**: networking and implementing the project in the field (Italy, Brussels, Peru, Ethiopia)
- **Implementing Partners**: UNEP – Carpathian Convention in Europe, BFSD in Balkan, WOCAN, ICIMOD (Asia)
End notes

Slide 4: Before food crisis: 720 Mio people, 32 % food insecure (world level: 13%)
Raise awareness among policy-makers, the international community and civil society, on the role and value of mountain ecosystems. (Carpathian Convention)
Build national capacity to promote SARD mountain policies and instruments (e-platform)
Support in-country implementation of SARD mountain policies (Morocco, Plan Vert)
This presentation is also replicable for other remote / disadvantaged areas
So far we are collecting preliminary information and preparing a new project. [return to slide 4]

Slide 5: Agriculture in the broad sense: crops, livestock, fish and forest products. Culture / heritage: traditional food products, handicrafts; landscape amenity / agritourism. Biodiversity: Ecotourism; pollination Main types of PE: clean air; water quality regulation; soil protection; biodiversity preservation (pollination); heritage preservation (Landscape, regional food / handicraft; traditional production systems). Other examples of negative externalities: silty water; soil erosion; water pollution; air pollution. [return to slide 5]

Slide 6: 50% world water comes from mountain regions. Glaciers are melting, since 1900, the ice area on Kilimanjaro decreased from 12 sq km to 2,5 sq km. [return to slide 6]

Slide 7: Cultural landscape: Geographical Indication / Protected Denomination of Origin. [return to slide 7]

Slide 8: Nicaragua, Costa Rica, Colombia: financed by Global Environment facility, multi institutional FAO livestock, environment & development initiative. Less degarded pasture; more pasture with tree / live fences; fodder banks. [return to slide 8]
Slide 9: Nepal RUPES Kulekhani scheme (Rewarding Upland People for Payment of Environmental Services + ICRAF = World Forestry Center) paying farmers to plant trees in combination with terrace construction. These plantings required farmers to switch from tradition fallow rotations to permanent-field agriculture and from free-roaming cattle to stall-feeding of animals. The Makawanpur District development committee (DDC) tried to ignore its commitment to follow the guidelines of the environmental Management Special Fund (= doesn’t want to give 20% of the hydropower royalties to the upland people for the environmental services they provided) The DDC followed its usual internal procedures for selecting dvpt projects without consulting the upland people of the Kulekhani watershed. The upland people organized quickly and protested this decision. They publicized their actions in local and national newspapers/radio. And DDC bowed to public pressure and acknowledged its errors Morocco: terracing & terraced plots; fruit tree plantations on slopes; planting ornamental trees around houses; creation and up keep of earth irrigation channels; conservation of the typical architecture of the houses; conservation of local mule breeds... Bhutan: the cost includes lost crops, livestock depredation, time spent guarding the crops, fallow land (farmers don’t want to cultivate); if it doesn’t seem realistic to provide appropriate incentives to all Bhutanese farmers, at least compensation for catastrophic losses could be appropriate. + subsidy for fencing? [return to slide 9]

Slide 11: But under a certain reference level, penalties may have to be paid / not paying the bad boys CAP and TRADE Polluter pays. [return to slide 11]

Slide 13: The implementation of a RPE scheme involves different steps, from the provision of services or goods and products by the farmer / rural community, to the remuneration respectively by the public budget or by the market. This includes: determination of the externality to remunerate (number 1 here under) building a concept of remuneration (2) with legal basis and relevant agreements (intermediaries, brokers...) implementing the remuneration : by public funding (4) or by the market (3) controlling (5) the delivery it self , and the overall system (6) monitoring, evaluating, and communicating + oversight (certification...) (7) [return to slide 13]
End notes

**Slide 15:** what are transaction costs? preliminary consultation & negotiation; establish a baseline; design a project; approval by host government; design monitoring plans + monitoring; certification of monitoring; training; communication; settle disputes... Teaching the stake holders / not only providers or users, but also institutions.  
[return to slide 15]

**Slide 16:** But under a certain reference level, penalties may have to be paid: not paying the bad boys... RPE is possible above normal conditions, not paying the bad boys. what are transaction costs? preliminary consultation & negotiation; establish a baseline; design a project; approval by host government; design monitoring plans + monitoring; certification of monitoring; training; communication; settle disputes...  
[return to slide 16]

**Slide 17:** what are transaction costs? preliminary consultation & negotiation; establish a baseline; design a project; approval by host government; design monitoring plans + monitoring; certification of monitoring; training; communication; settle disputes...  
[return to slide 17]

**Slide 19:** To qualify for the green box, a subsidy must not distort trade, or at most cause minimal distortion. These green box subsidies must be government-funded — not by charging consumers higher prices, and they must not involve price support. They tend to be programs that are not directed at particular products, and they may include direct income supports for farmers that are decoupled from current production levels and/or prices.  
[return to slide 19]

**Slide 23: The Adelboden Group**

“a platform for discussion of policies and policy instruments, exchange of experience, and preparation of initiatives” 
with different stakeholders (civil society, governments and international organizations) from all regions of the world...To face the growing challenges of climate change, poverty and environmental degradation affecting mountain regions, the mission of the ABG is to bridge knowledge with strategic action to promote the coordinated development of a balanced set of policies, institutions and processes based on a multi-stakeholder approach through innovative partnerships for the well being of mountain communities and the sustainability of mountain agriculture and environments.  
**Adelboden Group Mission, March 2008**

The Bureau of the Adelboden Group met in March 2008 and defined the Group’s mandate as follows:
1. Assist national governments to incorporate a “Policies, Institutions, Processes” multisectoral approach. (PIP)
2. To be an action oriented think-tank for early identification of new actions / tools / mechanisms required for both public and private actors to cope with new challenges.
3. Act as a catalyst and driver for PIP through members (organizational and individuals) and appropriate mountain projects (SARD-M)
4. Support local actions to improve mountain livelihoods including through pilot projects with members and partners of governments, NGOs and civil society.
5. Facilitate exchanges of experiences and knowledge amongst various levels of members / players.  
[return to slide 23]