Book of Abstracts

Session 14

6th Annual International ESP Conference 2013

Making ecosystem services count!

26-30 August 2013, Bali, Indonesia

Title of the session: Co-investment, rewards and payment for ecosystem services: progress from the field

Type of session: Workshop

Session host / primary contact person:

Beria Leimona	ICRAF	l.beria@cgiar.org

Session co-host / secondary contact person:

Moritz C. Remig	IASS	moritz.remig@iass-potsdam.de

Other involved organisers:

Matheus Alves Zanella	IASS	matheus.zanella@iass-potsdam.de
Sara Namirembe	ICRAF	s.namirembe@cgiar.org
Tri Agung Rooswiadji	Conservation International	t.rooswiadji@yahoo.com



Short description of the session

Payments for ecosystem services (PES) have theoretically evolved and adapted many developing country contexts. Empirical experiences suggest that to be established and operational, PES has to adopt community scale factors emphasising solutions for pro-poor aspects of the schemes. Moreover, commoditisation of ecosystem services may not an entry point for efficient ES provision and fair benefit for smallholder when landscape governance, including land rights is still weak. Concerns about effective participation of poor farmers in the schemes were raised. The discussion on aspects of equity versus efficiency, and the legitimacy of PES policies have also emerged in the debate. Besides, there is growing concern on the possibility and impacts of PES on communal values, motivation, collective action and holistic perceptions on the role of nature. In this case, enhanced participation is the key, not only in terms of adoption rates, but also for the real engagement of providers and users when designing a scheme. This session discusses evidences of PES at local levels and participations of smallholders and grass-root institutions:

- Who are the actors in this scheme?
- How do stakeholders interact in the scheme, including its institutional arrangement?
- Are there any applications to soil and water conservation with landscape approach, beyond tree-planting in increasing the provision of ES? What are positive and negative consequences of such practice?
- What are challenges in sustaining and scaling up the scheme?

Planned output

A report with case studies analysing the design and challenges of PES schemes.

Program

Time	Presentation	Resource Person
13:30 – 13:35	Introduction to Session	
13:35 – 13:50	Initiating Co-investment and Rewards for Environmental Services in Mt. Kitanglad Range Natural Park, southern Philippines	Caroline Duque – World Agroforestry Centre
13:50 – 14:05	Payment for Environmental Services for Watershed Protection In Langat Basin, Selangor, Malaysia	Chamhuri Iswar – Universiti Kebangsaan Malaysia
14:05 – 14:20	Designing an equitable payment for ecosystem services in Kapuas Hulu, West Kalimantan, Indonesia	Rachmat Hafiz – WWF Indonesia
14:20 – 14:30	Comments from panel	
14:30 – 15:00	Q&A and Discussion	
15:00 – 15:30	Coffee break	
15:30 – 15:45	Transaction cost of smallholder farmers' participation in forest management: Policy implications on PES schemes in Vietnam	Florence Milan - IWMI
15:45 – 16:00	The economics of watershed services in the Guapi-Macacu region of Rio de Janeiro (RJ), Atlantic Forest Biome	Vanesa Rodríguez Osuna - ZEF
16:00 – 16:15	Combining land-use modelling and environmental psychology: analysing ecosystem services and the values in the German State of Hesse	Jan Volland – Center for Environmental Systems Research Rüdiger Schaldach – University of Kassel
16:15 – 16:25	Comments from panel	
16:25 – 16:45	Q&A and Discussion	
	Next step and closing	

Presentation abstracts

Registered for conference: Yes
ID: 107

14. Co-investment, rewards and payment for ecosystem services: progress from the field

The economics of watershed services in the Guapi-Macacu region of Rio de Janeiro (RJ), Atlantic Forest Biome

Type: Presentation
Presenting author: Vanesa Rodríguez Osuna[1]
Other authors: Jan Börner, Udo Nehren, Rachel Bardy Prado, Hartmut Gaese, Jürgen Heinrich

[1]Center for Development Research (ZEF), University of Bonn, Germany

Contact: vanesa@uni-bonn.de

Urbanization processes, intensive agriculture and conversion of riverbank vegetation are continuously degrading hydrological ecosystem services in the Guapi-Macacu watershed. The watershed is located in the Atlantic Forest Biome, a global biodiversity hotspot, and supplies around 2 million urban water users. The petrochemical complex "COMPERJ" in the lower part of the watershed, which is planned to come online in 2015, will further increase the demand for watershed services, while at the same time affecting the potential drivers of ecosystem service loss in multiple ways. Paying farmers to restore natural watershed services has been proposed as means to maintain long-term water supply. But, payments may be more costly than alternatives, such as investments in water treatment facilities. This study quantifies the costs of changing current land use patterns to enhance watershed services and compares these to avoided water treatment costs. We use field data from farm-household surveys and expert interviews to estimate the opportunity costs of land use changes that are typically associated with water quality improvements, such as reforestation of riverbanks, fencing of forest fragments and pastureland to protect riverbanks and reduced fertilizer use intensity. Opportunity cost estimates are extrapolated to the watershed scale based on a land use classification and a vulnerability analysis to identify priority zones for watershed management interventions, such as payments for watershed services (PWS). We then use spatial scenario analysis to estimate the costs of alternative land use management strategies. To assess the potential demand for watershed services, we analyze water quality and treatment cost data from the main local water treatment plant. We find high per hectare opportunity costs of watershed service conservation that range from 526 to 5482 R$/yr for agriculture and are lower than 100 R$/yr for animal production compared with PWS schemes in the region. Land cover changes that significantly improve water quality will thus likely cost land users more than the necessary investments in water treatment. Willingness to pay for land cover related watershed services alone will therefore not be enough to induce additional service provision, for example, through reforestation. Moreover, in many critical areas for watershed services, reforestation is already legally required by the Brazilian Forest Code, thus limiting the scope for additional compensatory payments. Our analysis, however, suggests that monetary incentives could still have a complementary role to play in improving watershed services in this area. For example, if targeted on legally additional improvements to current land management practices, such as fencing off riverbank access from large cattle pastures that affect water supply in the lower watershed area.

Registered for conference: Yes
ID: 215

14. Co-investment, rewards and payment for ecosystem services: progress from the field

Combining land-use modelling and environmental psychology: Analysing ecosystem services and the values in the German State of Hesse

Type: Presentation
Presenting author: Jan Volland[1]
Other authors: Rüdiger Schaldach

[1]Center for Environmental Systems Research, University of Kassel

Contact: volland@cesr.de

Ecosystems are the basis of human life on earth and very sensitive to changes. In the past, population growth and strong expansion of agricultural land have led to dramatic alterations, destruction and to a decline in ecosystem services (ESS). Recently, technological development leads to a decrease of agricultural land in Germany, resulting in a change of landscape and equally of ESS. This phenomenon is also reinforced by the population's leisure behaviour and negatively influenced by climate change.

Our approach is to investigate the effects of global change on ecosystem services in the State of Hesse, located in central Germany. Our objective is to link aspects of land-use modeling and environmental psychology analysis to map the supply and demand of ESS. Important aspects are first to query the population's state of knowledge about ESS and second asking them about possible changes in the future. Based on the concept of landscape capacities, we have developed a questionnaire to identify the demand of ESS in Hesse. For this purpose 23 ESS are considered. To simulate the supply of ESS we use the land-use model LandSHIFT on a resolution of 250m x 250m with different land-use types. The Analytic Hierarchy Process is a structured technique for organizing and analyzing complex decisions. In our study it is used to assess the relevance of each land-use type for the provisioning of individual ESS with a non-monetary value. Furthermore, an additional questionnaire was developed that detects the population's acceptance and valuation of ecosystem services. Based on the results, a monetary estimation of the ESS is possible.

This study provides an overview of the scientific approach using methods of environmental psychology, to get cognitions about the benefits of ESS to the population and make a valuation of each service. The results provide new insights into the current state of knowledge of the population regarding ecosystem services and their values and expected changes in the future. Furthermore, first approaches are presented how to raise the understanding of ecosystems and their related services within the population to increase the attention to the benefits people obtain from nature.

Registered for conference: Yes
ID: 231

14. Co-investment, rewards and payment for ecosystem services: progress from the field

Himalayan ecosystem services and incentive based schemes

Type: Presentation
Presenting author: Laxman Joshi[1]
Other authors: Ujjwal Pradhan

[1]ICRAF

Contact: LxJoshi@gmail.com

Himalayan mountain ecosystems are characterised by an array of ecological functions and processes. The mountain ecosystems that include natural forests, rangelands, wetlands and glaciers and rivers systems, make important contributions to the ecological sustainability and human wellbeing, as well as to economic and ecological resilience both in the mountain regions and in the downstream regions. Mountain products and services form a basis for many economic sectors – food, pharmaceuticals and cosmetics; agriculture, forestry, and rangeland production; hydropower generation; tourism; support and regulation of ecological functions and processes, flood control, climate moderation, and wind and monsoon regulation. The Himalayan region has one the world's highest biodiversity richness and provides a setting for cultural, religious, and recreational activities.

The high-altitude cryosphere provides unique reservoirs of fresh water that is released year round in perennial rivers serving as a lifeline for millions of people downstream. Most cities and villages in the south of Himalayas rely on freshwater from the mountains to grow food, produce electricity, sustain industries, and provide drinking water. Many businesses rely on ecosystem services and they are often also major beneficiaries of mountain ecosystem services, depending on natural assets such as water (bottled water and soft drinks, aquaculture), pollinators (food and agriculture), soil erosion control (hydro-power) and landscape beauty (tourism sector).

Unfortunately, the mountain ecosystem health is deteriorating due to natural and human induced causes with serious impact on the delivery of mountain ecosystem services with huge economic and environmental, and social costs both to mountain and downstream populations. The PES approach can provide rewards to mountain communities for protecting the mountain ecosystem health. Examples from the Rewarding Upland People for their Environmental Services (RUPES) set of work focusing on hydro-power plant in Nepal, and lessons learned from other parts of Asia will be presented. Rewards for and reciprocity of ecosystem services, especially the paradigm shift in focusing on co-investments rather than solely on compensation or commodification of environmental services, can be seen as feasible and innovative mechanisms for ensuring environmental security and transboundary environmental governance. In the Indo-Gangetic plains, there is ample history of the politics of water sharing but another aspect of inter connectedness between the different countries and the Himalayan ecology could be based on reciprocity of environmental services through co-investment in ecosystem management by different stakeholders and nations.

Registered for conference: Yes
ID: 233

14. Co-investment, rewards and payment for ecosystem services: progress from the field

Informing the design of PES and respective legislation to improve the share of benefits and costs of proving water-related ecosystem services in Peru

Type: Presentation
Presenting author: Marcela Quintero[1]
Other authors: Yolanda Puemape, Roger Loyola, Jeimar Tapasco, Natalia Uribe

[1]International Center for Tropical Agriculture (CIAT)

Contact: m.quintero@cgiar.org

The benefits provided by hydrological ecosystem services (HES) have been increasingly recognized over the last decade by different water users and policy-makers. Many attempts have been made to date to explicitly include this recognition in markets, using schemes known as payments for HES (PHES). Most of the earliest PHES initiatives were in Latin America,hence the region boasts the most developed body of experience to draw from as different forms of PHES continue to evolve. The successes and failures of these initiativesraise new considerations for the design of futurePHES schemes.

There is empirical evidence provided by case studies in the Andes that show that the need for improving the equity in the distribution of the benefits provided by HES within a watershed is one of the main motivations of stakeholders to promote PHES initiatives. This focus may ameliorate water-related conflicts and enhance the collective management of water resources among different types of actors.As such, there is a need for additional institutional and policy tools and a broader approach than that of the "pure" PES concept.

This presentation will provide results related to conceptual developments, replicability insights, and the essential information and methods needed to inform decision-makers interested in designing such benefit-sharing mechanisms(BSM) in Peru. Accordingly, this presentation willdefine and outline thePHES-concept as it is being drawn upon the empirical experience froma specific Peruviancase study that is the pilot case of the Ministry of Environment. This approach will be contrasted against the classic definition of PES. The PHES in such pilot casewas designedto ensure the provision of watershed services while enhancing the participation of multi-stakeholders, and in some cases coordinating with existing formal institutions that promote integrated watershed management but that lack proper mechanisms to make them viable and operative.

Regarding the essential information that actors have demanded for the design and agreement towards such PHES, specific results will be provided about the economic significance (or 'value') of the HES to thepotential participants (diverse water users), the evaluation of the sources and magnitude of the HES, and the legal framework that may hinder or enable the participation of diverse actors.

The presentation will finally identify the conditions that render watersheds appropriate for implementing such BSM-schemes and how these conditions have been considered in the formulation of a Law for Promoting Rewards for Ecosystem Services.