



## PAYMENTS FOR LANDSCAPE AND SEASCAPE BEAUTY

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### Abstract

Payments for landscape and seascape beauty are becoming popular mechanisms to generate innovative funding for parks and other areas known for natural beauty. Stakeholders include buyers, sellers, intermediaries, landscape/seascape stewards and brokers. Most of these areas found in the public domain provide public goods but suffer from neglect by central governments. Government budgets are perennially inadequate while non-government organization support has been short-lived and time bound. To generate financing, governments are beginning to sell area services to different buyers. Trust funds and local management boards are being set up to capture monetary payments and to manage and earmark these funds to maintain goods provisioning. Prices are determined using willingness-to-pay surveys that attempt to approximate consumer surpluses and optimize revenues. These payments are earmarked to compensate landscape/seascape stewards for service provisioning and maintain these areas for their scenic beauty. While the potential to generate payments has yet to be realized, there are institutional conflicts arising from policy incongruence, and overlaps that impede the implementation of environmental payments in the country.

### 1. Introduction

For purposes of this paper, we define landscape and seascape beauty as synonymous with nature-based tourism. Despite the long history of nature-based recreation in the country, the markets are relatively immature. Markets between buyers and providers of landscape/seascape beauty have not matured compared to other goods and services traded under existing markets. Markets are mature when sellers and buyers exchange goods or services based on prices derived from the law of supply and demand. Here, the seller has established absolute ownership or right to the good or service being sold. Markets are immature when the price of a service or good cannot be readily derived nor can sellers establish clear and enforceable property rights to the good or service, e.g. public goods.

The failure of markets in securing ecosystem services contributed to the deterioration of many of the Philippines' popular nature destinations. For example, Boracay and Puerto Galera pioneered

nature-based tourism in the Philippines in early 1970s. Now, they have become mass-tourism destinations. Many of what used to be ecotourism destinations now suffer from bad planning, resulting in congestion, pollution, overcrowding and cultural erosion. If landscape/seascape beauty from pristine ecosystems is the "goose that lays the golden eggs", why do these areas deteriorate even if demand for such services is increasing worldwide and windfall profits are accruing to the tourism industry?

The reduction of tourism values in these areas can be attributed to market and institutional failures. Market failure occurs when landscape/seascape stewards are not compensated for the services they provide; hence, there are no incentives for conservation. Conversely, the beneficiaries do not share in the cost of providing such services. Institutional failures occur when policies and plans are inadequate and/or when there is a weak regulatory regime.

## 1.1 Market Failure

Tourist operators and other intermediaries normally capture the bulk of the payments from their clients and little goes to the land steward. In the case of nature-tourism sites, the land steward can be the landowner, lessee, concessionaire, tenant or property-rights holder, who is also the provider of environmental services that maintain the ecological attraction in these sites. Sellers may comprise intermediaries (e.g. operators, middlemen, agents) and may not necessarily be land stewards who are responsible for providing the services (**Table 1**).

The risk of market failure and the lack of incentives to land stewards may cause environmental services to deteriorate. For example, few cottages and resort operators pay taxes to the local government units (LGUs) mandated to maintain environmental services. But the LGUs, because of lack of financial resources, are unable to perform the service. The problem is aggravated in poorly-managed tourism areas where smaller establishments dominate the tourism landscape. The inability of LGUs to collect payments from resource users and the resulting breakdown of service provisioning by the LGUs is a vicious cycle prevalent in many parts of the country. Poor governance inevitably results in unregulated growth of tourism establishments (e.g. Boracay, Puerto Galera).

In our national parks, the Department of Environment and Natural Resources (DENR) acts as the land steward. There are many users of park resources that do not share in the cost of maintaining the park. As a result, many remain as “paper” parks. There are little resources flowing back to the park to finance its management.

There are special cases where LGUs benefiting from tourism values do not compensate other LGUs that bear opportunity costs for conserving their natural resources and foregoing development. One classic case is the ridge communities along Tagaytay that benefit from the scenic beauty of

Taal Volcano. Because of the attractive view that Taal Volcano provides, ridge communities reap tourism dividends including rise in land values, tourism-related livelihoods, business permits and taxes. Interestingly, Taal municipality that hosts the volcano does not share in these dividends, although it is responsible for regulating fishpens, infrastructure development and pollution within Taal Volcano.

The reason why markets fail in the case of Taal Volcano is that the landscape beauty being provided is a positive externality and Tagaytay, as a “free rider”, benefits from this externality. It does not have to compensate the land stewards for their efforts. As service providers, the LGU and DENR pay for the cost of protection while the city of Tagaytay reaps the benefits. Neither LGU nor DENR is aware of the positive externalities of their efforts and the opportunities available to exact payments for their services. Nor are there brokers that would convene the buyers and landscape stewards, estimate buyers’ willingness-to-pay, develop institutional mechanisms to effect transfer of payments and resolve conflicts. The eventual failure of the LGU and the DENR to preserve Taal Volcano would be a loss to tourism values that Tagaytay would have to bear eventually.

## 1.2 Landscape/Seascape Beauty as a Public Good

There are major reasons why markets fail to emerge. Landscape/Seascape beauty falls into the special category of *public goods* or *positive externalities*. Markets fail to compensate those who produce positive externalities because of the absence of property rights and other legal means, or because the service provision is not recognized by the beneficiaries or by the providers themselves.

Public goods suffer from non-excludability (consumers cannot be prevented from enjoying the goods or services) and non-rivalry (the consumption of goods or services does not reduce

the amount available for others). If consumption of goods or services does not result in scarcity, markets cannot emerge.

The case that landscape beauty as an ecosystem service is perceived as a public good is often used to provide justification for government intervention. Having governments set the rules and regulations is the overarching approach used throughout the world to conserve and secure these services. However, imposing rules and regulations draws its own set of problems. Weak bureaucracies, corruption, inefficiency, rent-seeking behavior are major obstacles to this approach. There are certainly institutional weaknesses in the system.

Also, growing budget deficits and mounting pressures compel governments to curtail spending. Public fund is lacking to secure or conserve the public good. Competing priorities for government resources leave scarce resources available for public goods provisioning. Areas of scenic beauty under government control are neglected and a decline in tourism values is inevitable.

For example, the more popular ecotourism destinations (e.g. Boracay, Puerto Galera, Taal Volcano) suffer from the problems associated with public goods. Because these areas are classified as public lands, nobody except the state can claim ownership of the goods. These lands suffer from open access and become part of the tragedy associated with the commons (Hardin 1968). No one can be prevented from enjoying the goods nor does a person's use of the goods diminish their availability for others to use. Visitors going to these places are not required to pay for service provisioning. The government is expected to shoulder the costs, but budgets are perennially lacking and the quality of the goods diminishes over the years.

### 1.3 PES: An Emerging Approach

Payments for environmental services (PES) is an emerging concept that attempts to “close the loop” between beneficiaries paying for an environmental service and compensating stewards who provide the service. Creating markets for landscape/seascape beauty is often justified as a tool to finance the cost of securing or conserving the service. PES allocates these costs and benefits equitably creating “win-win” institutional arrangements. Positive externalities are internalized into the payment mechanisms. However, addressing market failure through PES would depend on two conditions: one, clear and enforceable property rights are held by the landscape/seascape steward(s) where the service emanates and two, the buyers' willingness to pay.

PES may also be used to promote equity and social justice. The payments may not only be designed to cover the cost of service provisioning, but also the opportunity costs borne by those who suffer negative effects as a result of providing the service. For example, small-scale fishers who lose access to fishing grounds as a result of no-take zones to conserve biodiversity have to be adequately compensated for their opportunity costs. In the case of Tubbataha Reefs Natural Marine Park (TRNMP), the LGU of Cagayancillo received a share from the user fees paid by visiting divers, and fishers received livelihood support from external donors for giving up access and jurisdiction when the marine park was established (see Tongson this volume).

Market creation through PES is gaining momentum in many parts of the country. This is gaining popularity due to the failure of government to allocate money for the service. Many of the stewards have begun to charge entrance fees to finance the upkeep of natural areas. Some natural parks also began charging entrance fees (e.g. Hundred Islands, Apo island, Mt. Pulag, TRNMP, El Nido, Apo Reef, Ninoy Aquino Parks and Wildlife, Olango Bird Sanctuary). These schemes, however,

often fall short of rewarding those providing the environmental services and compensating those bearing the opportunity costs as a result of dislocation or loss of access to resources.

### 1.4 Bundled Services

Sometimes it is difficult to disaggregate two more services that are jointly produced even though markets exist for only one service. For example, in watersheds, payments for landscape/seascape beauty are oftentimes bundled with that for water. Although a watershed may generate water and landscape beauty as a bundled service, what the buyers are buying may be different services from the same watershed. Water from watersheds may be the main service that is marketed, but the area is also used for hiking or trekking. It may be the case that the hydropower company pays for water-provisioning while the tourist visitor “free rides” and does not pay for landscape beauty.

The loss of an unmarketed service is not internalized by the buyer, yet the loss of the other is internalized. For example, the hydropower company that pays water fees for watershed protection as a marketed service will not complain if the trails have been closed off to trekkers. But they will complain if water becomes polluted or scarce. To correct this, the landscape beauty should be marketed as well and the visitors required to pay user fees.

It is often assumed that there is complementation in the provision of services where increased investment in one leads to positive spin-offs to the other. It is not always the case that an increased supply of the marketed service will always have a positive effect on the other. Too much supply of tourists in a given area may negatively affect biodiversity due to anchor damage or pollution. Likewise, areas with high potential for landscape/seascape beauty may not be the most diverse in terms of species richness nor have the best carbon sequestration potential.

## 2. Stakeholders in PES Schemes

### 2.1 Buyers.

Majority of the cases reviewed worldwide show buyers of landscape/seascape beauty mostly come from the private sector (Landell-Mills & Porras 2002). In the Philippines, buyers consist of end-users (such as tourists). Tourists often have high disposable incomes to afford travel to and from these destinations.

There are many user-buyers as there are diverse uses associated with these recreation areas. Separate fees are charged for wildlife viewing, diving, boating, kayaking, trekking, filming, camping and others. Advanced countries have developed a more sophisticated typology of fees for each of these uses tailored for specific user segments. In the Philippines, a DENR Administrative Order prescribes to develop a typology of uses and fees but only for protected areas.

The government as a buyer happens when it allocates budgets for the maintenance of natural areas, such as parks, wilderness, and tourism zones. In the case of United Nations Education, Science and Cultural Organization (UNESCO) sites, the government is responsible for maintaining their UNESCO world heritage status by providing budgets for their upkeep. UNESCO provides a modest amount to conserve these areas.

Another category of buyers is the institutional buyer. The New Zealand government, Pacific Asia Travel Association (PATA), JBIC are some of the well-known donors that fund the infrastructure requirements of ecotourism or nature-based travel. The Northern Palawan Tourism Master Plan was funded by the Japanese Government. The JBIC lent money to cement roads connecting the northern major towns of Palawan to the capital. The New Zealand government funded the national ecotourism framework being implemented by Department of Tourism (DOT).

Because biodiversity and landscape/seascape beauty are bundled services, buyers of “biodiversity” are indirectly financing areas with high landscape/seascape beauty. A number of government aid agencies (Netherlands Embassy), World Bank, the United Nations Development Programme (UNDP), and Global Environmental Facility (GEF) are “buyers” of these bundled services. The reverse is also true. The buyers of landscape/seascape beauty also “subsidize” biodiversity conservation (see Perez 2005, this volume).

## 2.2 Providers/Sellers

Providers are those whose activities sustain the provision of the environmental service and who enjoy property rights over the land/water where the ES is generated. Providers can be private landowners, lessees, concessionaires, real estate developers, LGUs, peoples organizations, cooperatives and other tenured entities, and DENR.

Sellers may be the providers of ES themselves; otherwise, they may comprise intermediaries (e.g. operators, middlemen, agents, lessees, concessionaires, tenants).

## 2.3 Intermediaries

There may be intermediaries that sell or package environmental services to end-users. Examples of intermediaries are tour companies, agents, lessees, concessionaires, middlemen, resort operators, time-sharers and others who may or may not invest in providing the service.

There are concessionaires who lease the area for the purpose of selling or packaging the environmental service to end-users. In turn, they pay the service providers through fees they charge their guests. An example would be the Asian Conservation Company (ACC) which entered into a long-term

lease in a protected area in El Nido, Palawan (see Perez this volume). They built a resort in two islands in El Nido inside a multiple-use zone within a protected area. They are providing in-kind and financial payments to the PA office to support enforcement, research, education, waste management and rehabilitation work. They charge fees and bed taxes from passengers and guests, respectively, from which they award donations to park managers. In the same way, an NGO may lease the land from government and charge fees for its upkeep (e.g. Danjugan island).

## 2.4 Brokers

Brokers are those that convene buyers and sellers to come together, negotiate agreements and develop institutional mechanisms. In the context of this paper, brokers are distinct from intermediaries although it is a thin line of difference. In the case of public goods, brokers help in creating markets, estimate recreation values and establish appropriate institutional mechanisms. Brokers need to be trusted by both sellers and buyers. This is an important requirement for negotiations and agreements to take off.

A broker’s role is played by a variety of actors. In the case of Tubbataha Reefs and Anilao, a conservation NGO administered the user fees and brokered the agreements between buyers and sellers. The NGO’s interest is to secure sustainable financing for conservation.

There are transaction costs associated with establishing and running PES mechanisms. Depending on the power relations and the incentive structure, either the buyer or seller bears the transaction costs. Sometimes, the NGO or outside intermediary bears it.

An important role of the broker is to administer the willingness-to-pay (WTP) survey. The WTP survey is one such transaction cost needed to estimate economic values and, subsequently,

prices. There are also costs in preparing the broader class of consumers (i.e. divers) to understand and accept the system through brochures, FAQ sheets, bill boards, etc.

The broker's task is important as it brings sellers and buyers together in setting common goals and prices, and in forging agreements at the start. The broker may also act as conflict mediator when disagreements arise.

A body will have to be set up in areas where there is no actor to continue the brokering function. In Anilao, a Coastal Resources Management Board was established by virtue of a municipal ordinance. The LGU, as provider of the service, is legally mandated to collect fees but cannot act as a broker. The Board is chaired by the municipal mayor and draws membership from diverse stakeholders including divers groups, resorts, NGOs and the academe, and attends to conflict negotiation, agreements and trouble shooting. It is also the venue to demonstrate accountability and transparency — key principles in establishing PES mechanisms. It is important for sellers to be held accountable for the goods and services for which the fees are earmarked for and report back to the stakeholders how the money was spent.

The Protected Area Management Board (PAMB) assumes this role in the case of parks under NIPAS. The PAMB is a multi-sectoral body empowered to develop programs and policies, introduce user fees and resolve conflicts among stakeholders.

## 2.5 The State as ES Provider

Public lands are under the jurisdiction of DENR. Most recreation areas under the public domain are established as initial components of our parks system. In some areas, the DENR enters into management agreements with government offices (e.g. Department of Trade and Industry), with companies or with civil society organizations (Table 1).

In the case of national parks, the provider is the DENR. The establishment and management of national parks are governed by the National Integrated Protected Area System (NIPAS) law, which mandates DENR to co-manage the park through the PAMB. The DENR, through the PAMB, may set fees for entry into NIPAS protected areas. These fees become part of the Integrated Protected Area Fund (IPAF).

Communities also participate in providing the service and charge fees for access (e.g. Apo Island, Olango bird sanctuary, Honda Bay boat owners). Their tenure over public lands is granted by DENR that delegates power to the landscape managers and allows them to collect fees from third parties.

Installing on-site managers in public lands through tenure provision is seen by the central government as the way forward in addressing problems involving the forest commons. The shift of emphasis from companies to community-based organizations is a result of a social forestry policy adopted by DENR. It is envisioned that these organizations, acting as on-site managers, would fill the gaps of government agencies in enforcing environmental laws. In many areas, members of organizations were deputized and became part of the *Bantay Dagat* and/or *Bantay Gubat*. In exchange, they enjoyed usufruct rights to forest resources. There are many good examples of community-based efforts to manage the forest commons (e.g. Kalahan Educational Foundation).

Not only should the benefit stream defray costs of those providing the direct service, there is argument to support compensation to those bearing the opportunity costs as a result of providing the service. For example, small-scale fishers who lose access to their livelihoods because of a no-take zone designated as a tourism area bear the opportunity costs. To achieve social justice and equity, they, too, should be compensated for their opportunity costs.

## 2.6 Valuing Landscape/Seascape Beauty: Willingness-to-Pay

Although entrance fees have been used for a long time in our park systems, the rates are often set arbitrarily. Most often the rates are set too low that revenues fail to cover the cost of administering the system, let alone the cost of public goods provisioning.

Capturing the full benefits from consumers of public goods requires estimation of their consumer surplus. This valuation is done through WTP surveys. Results of these surveys have been used in setting fees for entry into conservation-cum-recreation areas. The survey can generate other important information, such as preference of consumers on the institutional structure, payment mechanism, expected benefits, accountability mechanism and their role in decision-making. This information is important in designing structures and institutional mechanisms for administering the user fees. The case of TRNMP, an offshore protected area, demonstrates a viable scheme to close the loop between consumers and suppliers (**Box 1**).

The growing popularity of user fees and valuation studies is evident in the landscape/seascape beauty markets. There have been 20 valuation studies for recreational markets in the Philippines as of 2002, and five were used as a basis for user fees currently being imposed (Rosales 2003). WWF has now developed a user guide in implementing site-based conservation finance schemes based on its work in Mabini, Tingloy in Batangas and in Puerto Galera (Padilla et al. 2005).

## 2.7 Capturing Landscape/Seascape Values: Payment Mechanisms

Payments for landscape and seascape beauty in the Philippines are commonly in the form of entrance fees. The more common payment mechanisms are over-the-counter payments for entrance and user

fees. Establishments may pre-purchase entrance tickets in bulk on behalf of their guests (e.g. Anilao, Tubbataha). Other payments are in the form of bed tax, airport tax and in-kind contributions, such as enforcement, research, education, solid waste management as in the case of the ACC.

Direct negotiation is another mechanism where the tourist and the land custodian agree on a price for use of a service, e.g. beach huts, private rooms or home-stay facilities.

Vertical integration happens when land is bought or leased from a custodian and provisioning of the seascape beauty becomes part of the buyer's core business. A concessionaire may buy or lease the land to which it will bring in its customers (e.g. Laiya Aplaya, El Nido, Amanpulo, Club Noah).

Establishments espousing corporate social responsibility are beginning to realize the need to focus on the triple bottom line — economic, environmental and social welfare (refer to the case of the ACC in Perez 2005, this volume). These firms are internalizing the public cost of service provisioning. The case of Ten Knots in El Nido and Planet Dive in Anilao offers a mix of best practices that contribute to community welfare as well as environmental stewardship. PES are in the form of cost “internalization”, i.e. hiring guards to enforce laws against illegal fishing or conduct reef studies to educate customers.

Trust funds exist to benefit biodiversity conservation though these funds are not earmarked for a specific site (e.g., Foundation for Philippine Environment, Tropical Forestry Conservation Act).

Payments may also be in the form of tenure to communities who are made responsible for the upkeep of the site. These tenurial systems are in the form of Community-Based Forest Management (CBFM) agreements, where the use of the land is tied to tenure. Community organizations can apply for CBFM with DENR and organize their ecotourism programs for their benefit (e.g. Olango

Island, Apo island). Tourists visiting Olango and Apo islands pay entrance fees and for a tour where the proceeds go to these organizations.

## 2.8 Property Rights

Effective institutional arrangements to control access, e.g. by allocating property rights, are a prerequisite for developing reward transfers; otherwise the economic value cannot be captured. Efficient monitoring mechanisms are also prerequisites to implement PES. One of the most important legal requirements is to ensure that property rights over land and environmental benefits are clearly defined (Pagiola et al. 2002; Landell-Mills, N. and Porras, I. T. 2002).

Several laws define property rights regime in the public domain. The implementation of user and/or entrance fees and other site-based conservation finance mechanisms is legally governed by various statutes — the Local Government Code of 1991 (RA 7160), Philippine Fisheries Code of 1998 (RA 8550), Philippine Forestry Code of 1976 (Presidential Decree 705) and the National Integrated Protected Areas System (NIPAS) Act of 1992. The Local Government Code provides LGUs the power to generate and mobilize revenues through fees and charges for efficient and effective governance. The Philippine Fisheries Code bestows upon the LGUs the primary mandate for the management of municipal waters in the coastal zone, which are not covered by the NIPAS Act, specifically municipal waters that extend to a distance up to 15 km from the shoreline.

There are many LGU-led user fee systems that generate significant financing (e.g. Anilao, Hilutungan Sanctuary, Bais Bay). However, because they lack the business orientation and skills to manage these areas as a business enterprise, LGUs encounter difficulties to manage and sustain them.

There are cases wherein rights are conferred to communities through a Certificate of Ancestral Domain Title (CADT) under the Indigenous Peoples Rights Act of 1996 or through usufruct agreements with DENR. In Coron, the Tagbanua Foundation sets and collects fees from visiting tourists within their ancestral domain. In Mindoro, the Mangyans are introducing user fees for tourists trekking into their ancestral lands. Community-based ecotourism has emerged as a viable strategy in conserving natural resources while alleviating the poverty conditions of the poor.

However, rights over land and water are not that clearly defined in the Philippines. Conflicting laws result in overlapping claims by protected area managers, indigenous groups, mining companies and tenured migrants. We discover private claimants in areas designated as public lands (e.g. Taal Volcano, Sombrero and Bonito islands). These overlaps somehow impede the establishment of institutional mechanisms that would allow the natural evolution of markets.

## 3. Lessons Learned, Opportunities and Challenges

### 3.1 Markets for ES Require Multi-stakeholder Cooperation

The development of PES markets for landscape/seascape beauty requires sellers, providers, buyers, brokers and intermediaries to work together within an institutional framework. Usually, the LGUs, concessionaires and local people's organizations function as either sellers or providers; on the other hand, end-onsumers, NGOs and tour operators perform the role of buyers. Brokers are usually performed by NGOs or the academe and, in some cases, a multi-sectoral body is established to continue the brokering role.

### 3.2 Good Governance is Critical for Emergence of Markets

Major issues that concern end-consumers have to do with the role of government in collecting and disbursing the money. Transparency and accountability issues are paramount concerns of the buyers. Majority of the survey respondents are distrustful of the local government because of perceived graft and corruption. Because of their higher income and awareness on the importance of reef conservation, the diving sector welcomed and supported the dive fee systems. In surveys with divers, many preferred that an NGO manage the money rather than the government. The NGOs, however, have no legal mandate to collect money in exchange for a service, unless they derive their authority from the state or the money is donated voluntarily. LGUs are legally mandated to collect fees, but would need to overcome the negative perception by ensuring good governance and transparency over the collection and disbursement of funds.

In some areas where there is historical distrust to allow LGU-led collection systems to be supported, a civic group or private company may be authorized by the LGU to collect fees for them.

### 3.3 Tax or Fee?

A fee is charged to defray the cost of providing a service; in this case, seascape or landscape beauty. A tax is a statutory requirement by LGUs to collect in accordance with the provisions stipulated in the tax laws. The payor of a fee expects the money to be used to perform a service while a payor of a tax does not expect the money to benefit him/her directly, but may be used to construct roads, hospitals, etc. Buyers and sellers under PES need to distinguish the two terms if markets are to evolve. Payments must approximate value exchanges similar to those found between buyers and sellers under existing markets.

### 3.4 Corporate Social Responsibility Should Lead to Environmental Payments

At present, companies “internalizing” the cost of public goods provisioning are doing so as part of their corporate social responsibility (CSR), a close definition of which is corporate philanthropy. The main purpose of CSR is to build goodwill, an intangible asset that would hopefully be translated into positive tangible outcomes, including public goods provisioning benefiting all stakeholders. The danger in these voluntary transfers is the attendant risk of sustainability; e.g. changing board composition that would alter the company’s CSR philosophy. Institutionalizing the payment system through legislation would mitigate these risks.

### 3.5 Collective Tenure as an Incentive?

Although tenure (i.e. CBFMA) may be granted to community groups in exchange for complying with tenure provisions requiring them to sustainably manage the land’s resources, several weaknesses are found in the monitoring system especially on the part of DENR. Because violators of CBFMA agreements remain unmonitored and unpunished, the tenure system loses its credibility. This was aggravated at the time of DENR Secretary Cerilles when the CBFMA was unilaterally suspended nationwide. It begs the question now whether CBFMA holders have a long-term interest on the land or are inclined to exhaust natural resources at the quickest possible time. The question is whether the tenure really acts as an incentive for tenure holders to manage their landholdings sustainably. A case may be that family-based tenure system under Social Integrated Forest Management Agreement (SIFMA) is the appropriate instrument to grant real incentives at the household level.

### 3.6 LGUs as Buyers and Sellers: The Need for Inter-LGU Payments

LGUs providing for landscape/seascape beauty should be compensated by beneficiaries, whether private consumers or institutions (other LGUs). Inter-LGU payments are meant to equalize the costs and benefits of maintaining these recreation areas. The payments should reflect the willingness-to-pay and the cost of service provisioning by LGU beneficiaries and custodians. The Local Government Code encourages municipalities to enter into joint agreements. These agreements provide a legal basis for environmental payments to happen.

## 4. Concluding Remarks

Many of the earlier fee systems have been developed in many public recreation areas simply because of their revenue-earning potentials. Little of the money goes to service provisioning by the land/sea stewards. But as markets for landscape/seascape beauty are emerging, land stewards are beginning to charge entry into prime areas. The stewards are beginning to realize that the viability of their service requires investments as well as adoption of a business approach. Despite the growing demand, the growth of markets is constrained by institutional weaknesses, and lack of capacity and capital on the part of land stewards or suppliers of the services, and the lack of planning resulting in the deterioration of the natural capital that produces the environmental service.

The need to set a value on landscape/seascape beauty through WTP surveys and reflect these values in the fee structure becomes more pressing with the tightening of government spending and uncertainty of foreign funding. The sustainability of existing areas and their future expansion would hinge on the amount of funding that such areas can generate independent of public funding. The potential of using entry fees in existing areas that are struggling to maintain their status to

meet their financing needs should be explored. In the Philippines, the full potential of capturing recreational values has yet to be realized.

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### Box 1. User Fee System for Marine Protected Areas Financing: the Tubbataha Reef Marine Park Experience

The Tubbataha Reef National Marine Park (33,200 ha), a UNESCO World Heritage Site (1993) and a Ramsar Site (1999), is located off Sulu Sea, Philippines. This marine protected area is a valuable site for natural science and tourism because of its enchanting coral reef ecosystem and high species richness. It is the habitat of numerous birds (23 species), marine mammals (6 species), algae (71 species), and sea grass (7 species), including fish (448 species) and sea turtles (e.g. Alcala 1993, White and Arquiza 1999, and White et al. 200 in Tongson and Dygico 2004). Because of TRNMP's remoteness, its coral reef atolls — the largest in the country — are vulnerable to over-exploitation and destruction due to dynamite fishing that used to be rampant in the 1980s.

As a national protected area, TRNMP is managed in accordance with the NIPAS Act, which requires the creation of a multi-sectoral governing body (or PAMB) to ensure the implementation of a duly-approved management plan for the site. However, government funds to protect and manage the Park have always been insufficient.

The Park's biodiversity value has been grossly underestimated despite its premium quality and popularity for scuba diving. To enhance the Park's recreational value and at the same time maintain its ecological integrity, the Board, in cooperation with WWF-Philippines and the diving community, decided to develop a new user fee system that would optimally capture and monetize the recreational benefits from tourism. And so, a willingness-to-pay study was conducted in 1999; the survey showed that an average diver is willing to pay \$41 per visit. Using these results, a two-tiered pricing scheme was developed for foreign and local divers (i.e. \$25 for local divers and \$50 for foreign divers). The new collection system is managed by the Tubbataha Management Office, headed by a park superintendent. The system is also consistent with government guidelines on determining fees in protected areas (DENR-DAO 2000-51).

In the last five years, the Park has generated a total income amounting to Php9.3 million from diving fees alone. In 2004, a total income of Php2.5 million from entrance fees and fines was earned, enough to cover 41% of the annual core costs of Php6 million to protect Tubbataha. The experience has shown the importance of adopting a business approach to instituting user-fee systems for long-term sustainable financing of marine protected areas. The short-term economic benefit from tourism should not, however, compromise the long-term and total benefits from biodiversity through sustainable tourism and local fisheries.

Reference: Tongson and Dygico (2004)

Table 1. Major stakeholders implementing environmental payments for landscape/seascape beauty

Provider/ Steward	Intermediary	Commodity	Buyer	Site
DENR	Concessionaire, tour operator NGO, tenure holders	Entrance fees	Consumers	Ten Knots Resort, Club Noahí Amanpulo Danjogan Isl., Olango community
DENR	DENR-PAMB	Entrance fees Film rights Budgets	Consumers Companies Institutional buyers Government	NIPAS sites, El Nido, Tubbataha, Mt. Pulag
DENR	DOT-PTA	Lodges, resort concessionaires	Consumers Institutional buyers	DOT tourism zones
LGU	LGU	Entrance fees Diving fees	Tourists Divers	Anilao, St Pauls underground Hilutungan
LGU	Cooperative Peopleís organization	Entrance fees Boat fees	Divers Visitors	Olango Sanctuary, Apo Island
Private landowners	Leasors Tenants Agents	Entrance fees	Consumers	Villa Escudero, Hidden Valley, etc.
Indigenous community with CADT	Peopleís organization	Entrance fees	Consumers	Coron Island Northern Palawan

DENR - Department of Environment and Natural Resources

PAMB - Protected Area Management Board

NIPAS - National Integrated Protected Areas System

DOT-PTA - Department of Tourism – Philippine Tourism Authority

CADT - Certificate of Ancestral Domain Title

## ■ ■ ■ RUPES: A STEP FORWARD

Beria Leimona

### Abstract

The Rewarding Upland Poor for Environmental Services Program is testing mechanisms to reward the upland poor for the environmental services they provide at a number of sites across Asia. Four years since its commencement, the program has learned numerous lessons in establishing payment for environmental services mechanisms in developing countries with particular emphasis on the upland poor as beneficiaries. A market-based approach for environmental services with potential funding from private sectors delineated the first establishment of this program. As the program has progressed, constraints on operating ‘pure’ payments for environmental services have appeared. This leads to a question of whether or not the market-based system for financing environmental conservation in developing countries will actually benefit the poor or be applicable and effective in the context of Asian developing countries. This paper introduces four approaches that describe the different conditions exercised by two contrasting methods – a market-based payment for environmental services and non-market-based system, in this case, Integrated Conservation and Development Program – in achieving the dual goal of environmental conservation and development. Supported by recent publications by notable authors on payments for environmental services issues, this paper will briefly show the shift of RUPES basic assumptions as a result of lessons learned from RUPES action research sites and its research. Positioning RUPES and its next step will support the progressive development of a pro-poor payments for environmental services concept in the tropics.

### 1. Introduction

Various approaches and policies have been used to address environmental problems and manage natural resources. Conventionally, environmental policies have been based on “command-and-control” mechanisms, in which regulations attempt to dictate certain actions in dealing with the environment. For example, highly specific regulations control potential polluters in developed countries and impose particular patterns of land use in developing countries. In addition to these regulations, responses to environmental problems could also come as remedial measures such as repair of the damage caused by landslides or flooding.

Pagiola and Platais (2002) proved that neither regulation nor the remedial approach has been effective. One author noted that, “In the real

world, regulatory systems are rarely discarded and replaced wholesale. Rather, reform of regulatory systems proceeds in an incremental fashion,”<sup>1</sup> but still this “command-and-control” method could be difficult and expensive to implement, monitor, and enforce, especially in countries with weak institutional capacity (Huber *et al* 1998). Hence, market-based instruments (MBIs) have been proposed to reduce the cost of achieving environmental goals and move resources in more efficient ways.

The enthusiasm for markets arose and became increasingly trendy in the 1980s. More than 100 different types of MBIs were identified by the Organization for Economic Cooperation and Development (OECD) in 1989. Such environmental management policies included packaging taxes, effluent taxes and charges, capital or operation subsidies, tradable permits,

<sup>1</sup> Market for the Environment by Richard T. Woodward in CHOICES – the magazines of food, farm, and resources issues 1<sup>st</sup> Quarter 2005 – 20(1).

deposit-refund schemes, performance bonds, liability instruments, and many others. Huber et al (1998) described early OECD experiences that showed various benefits of the MBIs ranging from reduced compliance costs by industry to reduced administrative costs for better environmental and human health. In 1992, the use of MBIs was also endorsed within the Rio Declaration on Environment and Development as an important component of sustainable development. After being promoted for decades by economists, this tool is now beginning to be widely promoted as part of the solution to an ever-increasing range of environmental problems.

However, in spite of their notable successes, the evidence has increased that, as command-and-control procedures have, MBIs are facing constraints – even in developed countries – due to limited institutional capacity to oversee them (Huber et al 1998). Even now, after seven years, Woodward (2005) concluded that a number of unsuccessful efforts to apply MBIs could be observed.

In February 2002, the ICRAF (World Agroforestry Centre) launched Rewarding Upland Poor for Environmental Services (RUPES), a project developing PES mechanisms benefiting poor upland people of Asia, supported by the International Fund for Agricultural Development (IFAD). RUPES aims to enhance livelihoods and reduce poverty of the upland poor while promoting environmental conservation at local and global levels. These initiatives aim to build working models of best practices for successful environmental transfer agreements adapted to the Asian context and tested in six action research sites across Asia (section 2). The RUPES agenda examines the environmental services (ES) that are generated in the upland areas, noting how and to whom they are important. It examines mechanisms to bring together local, scientific, and policy knowledge on ES, supporting negotiation systems and local monitoring.

The importance of markets became the focus of discussions in the early implementation phase of RUPES, and project members concluded that much more attention needed to be placed on market factors for the RUPES program to succeed<sup>2</sup>. It emphasized the importance in dealing with potential buyers of the services. Realizing the potential weakness of the MBI approach if institutions are not capable of proper oversight, local institutional dynamics, capacity at the local level, and national and international policy were acknowledged to need more attention.

In its fourth year running, the program has started to compile and synthesize all lessons learned. This also meant evaluating the approaches to addressing the possibility of establishing of PES mechanisms in Asia with particular emphasis on the potential for the upland poor to benefit. Supported by recent publications on PES issues by notable authors, this paper will show the shift of RUPES basic assumptions as a result of lessons learned from RUPES action research sites.

## 2. RUPES Action Research Sites across Asia

Through a partnership with the IFAD as the major donor, the ICRAF is taking an active role in leading a consortium of partners engaged and interested in developing pro-poor environmental service transfer mechanisms adapted to the Southeast Asian context –the RUPES project. The consortium includes such organizations as: the Center for International Forestry Research (CIFOR), the World Conservation Union (IUCN), Winrock International, Conservation International, World Wide Fund for Nature (WWF), the Ford Foundation, The Nature Conservancy, national partners from each country in Southeast Asia, and other investors. This consortium has supported RUPES to determine the six action research sites across Asia.

<sup>2</sup>IFAD Office Memorandum: ICRAF TAG 534 Start-up Workshop: Developing Mechanisms to Reward the Upland Poor in Asia for the Environmental Services They Provide, Bogor, Indonesia, 6-8 February 2003 – Back to Office Report by Vanda Altereli and Nigel Brett.

At the six research sites – three in Indonesia, one in Nepal and two in the Philippines — the program is supporting (financially and technically) research into which PES mechanisms work and how. The brief descriptions of RUPES sites are as follows:

### **2.1 Ikalahan Ancestral Domain, Nueva Vizcaya Province, Philippines.**

The Ikalahan Ancestral Domain covers 58,000ha of mountainous forest and farmlands from 550 to 1,717 m above sea level, and is located 270 km north of Manila in Luzon. About 90 per cent of the Domain's 20,000 inhabitants are of the Ikalahan tribe. The Ikalahan watershed is 70 per cent forest, and provides water for the cities and irrigation systems below. The Domain's Magat River is downstream from the famous Banaue Rice Terraces, considered the "eighth wonder of the world." High biodiversity characterizes this area, more than 1,500 plant species and about 150 bird species, 35 of them on the CITES or IUCN lists of endangered bird species, have been identified in the domain.

In developing rewards for environmental services, the RUPES Kalahan team is examining services from carbon sequestration, biodiversity, and watershed protection, and test payments for these services. Potential buyers of protection of the Ikalahan watershed include major beneficiaries such as the Magat and Talavera river irrigation systems. Ecotourism may also provide income to bolster the conservation of forest biodiversity.

### **2.2 Kulekhani, Makwanpur District, Nepal.**

The Kulekhani watershed, about 50km southwest of Kathmandu, covers 12,496ha at an altitude of 1,400 to 2,300m. Most of the Kulekhani watershed's 43,000 people are disadvantaged ethnic groups and Dalits, or low caste people. Water from the Kulekhani River and its tributaries is the

main source for two downstream hydroelectric plants. Winrock International will help quantify and value the environmental services that the watershed provides, and identify mechanisms to transfer payments. The Nepal Electricity Authority, a potential buyer, has expressed interest in reducing sedimentation and increasing water availability in the dry season to enhance the capacity of its hydroelectric plants.

Kulekhani watershed community members have begun mobilization efforts, such as establishing an ad hoc group to represent the interests of various community forest users and other community-based organizations in the watershed. Currently, they are discussing the appropriate rewards and reward mechanisms that they might consider once the environmental transfer agreements are further clarified. Decisions are made democratically ensuring that women and other marginal groups are represented. A key lesson is that when communities are made aware of the benefits, they have an incentive to take steps to obtain a share of such benefits.

### **2.3 Sumberjaya, Lampung Province, Indonesia.**

The 55,000ha Sumberjaya - meaning source of wealth – is a sub-district in the Bukit Barisan mountain range that includes the upper watershed for some of Sumatra's major rivers. Its population is 80,000, or 150 persons/km<sup>2</sup>. About 40 per cent of the subdistrict is classified as "protected forest" and ten percent as a national park. Nevertheless, forest cover has declined from 60 per cent in 1970 to 12 per cent in 2000, leaving vast areas of formerly forested hillsides bare. Simultaneously, coffee farms have increased tremendously. Establishing and maintaining "shade coffee" as part of the agroforestry system has been shown to potentially slow both erosion and the decline in water quality, as well as contributing to farmers' incomes. Land tenure rights have been an issue

in Sumberjaya for the past 100 years. Watershed issues and the government's perception that coffee cultivation in this area caused the depletion of the watershed triggered four military campaigns from 1991 to 1996. Thousands of farmers were evicted from their land and their coffee farms burned.

The RUPES project is studying three proposed reward mechanisms. The first, a payment scheme involving a state hydroelectric power company that as a buyer expects better water quality, is being tested. The second is land tenure, the main reward mechanism proposed for watershed protection and carbon sequestration projects. The state forestry department is a potential provider of these rewards for environmental services, because it can issue permits for land use. Local communities and the government have begun negotiations for legal rights to land use, in exchange for better management of state forestland. ICRAF and local non-governmental organizations have helped farmers develop community forestry schemes that envision land tenure for 25 years, after a 5-year trial period. Farmer groups have already obtained 5-year rights in protected forests, with two requirements: they must plant trees and protect the remaining natural forests. Finally, the third potential mechanism being developed to improve the quality of water for domestic use at a local scale is the introduction of direct payment schemes.

#### **2.4 Bungo, Jambi Province, Indonesia.**

Most rubber is now synthesized from petroleum, but 25 per cent is still derived from tropical rubber trees. Malaysia, Indonesia, and Thailand produce 90 per cent of the world's "natural" rubber. Jambi is Indonesia's third-largest rubber producing province. About 97 per cent of Jambi's natural rubber is produced from "jungle rubber" gardens of five hectares or less. Tapping rubber from wild trees in these huge reservoirs of biodiversity has been a traditional income source—but is disappearing rapidly, as monoculture plantations of rubber and oil palm replace the forests.

RUPES activities are in Bungo district in the 455,308ha watershed of the Batang Hari, Sumatra's second-largest river. Only 12 per cent of the land is higher than 500 m. The population density is about 50 persons/km<sup>2</sup>. RUPES is financing the development and testing of reward mechanisms for communities that protect rubber agroforests and the biodiversity and carbon storage they provide. Two sites in the Bungo district have been identified for testing the RUPES approach after completing detailed site exploration and characterization. The next step will be to analyze the two sites using framework developed by ICRAF and RUPES, namely Rapid Agrobiodiversity Assessment (RABA). RABA is proving useful as an approach to identify the information necessary for providers and beneficiaries of biodiversity protection to devise an environmental service agreement. Interest in RABA has been growing steadily and the tool is now drawing the interest of partners to further develop it.

#### **2.5 Singkarak Lake Watershed, West Sumatra Province, Indonesia**

Intensive upland agriculture and fishing provide income for 77 percent of the 399,000 people, or 205 people/km<sup>2</sup>, who live around Singkarak Lake—the upstream watershed reservoir of the Inderagiri River. The 160-m deep Singkarak Lake, one of Indonesia's largest, covers 13,665 ha and is nestled at the base of a rugged mountain landscape that volcanic eruptions formed years ago. The scenery is spectacular, but the lake is increasingly polluted by bad land use on the surrounding slopes, inappropriate fishing practices like poison and small bombs, and the drawing off of lake water for electricity. The lake provides water for irrigation, hydropower, and recreation. Singkarak Lake is famous in Indonesia for the popular fish *ikan bilih*—but overfishing, pollution, and sedimentation are rapidly depleting its population.

RUPES focuses on 58,469ha of the lake's catchment area, most of which is non-productive Imperata grass that has spread with deforestation. The local communities are increasingly aware of how important it is to protect and increase the forested areas around the lake. One current reforestation program is the Million Tree Planting Program. The main environmental services offered at RUPES Singkarak action research site are watershed protection and carbon sequestration. The state hydroelectric power company and the international community are potential buyers.

## 2.6 Bakun Watershed, Northern Philippines

Bakun is the first indigenous area in the Philippines to be issued a Certificate of Ancestral Domain Title. Even with this significant acknowledgement of their rights over this 29,500ha in the Cordillera ranges of northern Philippines, the Bakun indigenous people is predominantly poor. It is estimated that 90 percent of the local people are engaged in rice and vegetable farming as their main livelihood. Bakun has a rich socio-cultural heritage. Their indigenous way of life governs how they relate to the land, the forests, and each other, making them unique and resilient as a tribe. The Bakun Indigenous Tribes Organization (BITO) has been engaged for the past seven years with an IFAD-assisted project that aims to reduce poverty in the 82 remote highland communities of the Bakun. As part of this partnership, the Bakun people are involved in reforestation and agroforestry projects that will increase their livelihood opportunities while protecting their natural resources. They see these land use practices as responsible stewardship of the environment through careful management.

Currently, RUPES and the Bakun are working together to support and build the capacity of the local communities, institutions, and government agencies in the Bakun watershed to implement fair and equitable mechanisms for environmental service payments. At present there are two hydroelectric power plants operating in the

Bakun watershed. While these companies pay taxes to the national and local governments, it is not clear how much of this is directly benefiting the communities in Bakun who are providing the watershed protection services.

## 3. RUPES Typology of Environmental Services

Reconciling the concept of ecosystem services with human-centric systems led to the distinction of twelve prototype situations, each describing upland-lowland relationships focusing on an environmental service function (van Noordwijk 2005) (**Table 2**). The potential for rewards for upland providers of ES will depend on the degree of dependence of the ecological service on land use. A clear need to link human activity to changes in ecosystem (or environmental) services directly and indirectly, is part of the effort to develop rewards for these services. The provision of ES is site-specific and depends on the natural capital of the area. In addition to those natural factors, human influence through land use practices, which varies from avoiding negative impacts on the environment to stimulating positive impacts, could substantially affect the ES provision.

From the current experience with ES reward mechanisms in Asia through RUPES projects, twelve 'prototypes' for further exploration of a more comprehensive typology have been proposed. Recognizing the importance of dependence of the ES provision on land use, the twelve environmental services indicate what efforts are needed from the ES providers or 'sellers' and what is expected by the ES users or 'buyers'. Among the twelve prototypes, nine of them have been tested under RUPES.

At the first regional workshop of RUPES in 2002, a review of initiatives in developed countries for implementing environmental benefit-transfers presented and provided lessons for the design of RUPES mechanisms in Asia (Gouyon 2003). In this paper, "PUPES" (Punishing Upland Poor for

**Table 1. Twelve prototype situations for ES rewards in upland agricultural systems**

<b>Environmental Service Typology</b>	<b>Providers / sellers influence</b>	<b>Users / Buyers Expectations</b>	<b>Main Issue</b>	<b>Examples of RUPES cases</b>
1. Total water yield for hydroelectricity via storage lake	Impacts on total water yield small; reservoir sedimentation issue may dominate the debate; option for sediment traps and landscape filters	Consumer satisfaction depends on continued functioning; high project investment costs, little subsequent management flexibility	Intercepting sediment flows rather than avoiding them is generally easier to accomplish; sediment flows out of well-managed upper catchments may still be high because of geological and geomorphologic processes	Singkarak (Indonesia)
2. Regular water supply for hydro-electricity via run-off from the river	A change from soil quick flow (saturated forest soils) to over-land flow will have some effect on buffering of river flows and hydroelectric operation time		Interventions influencing the speed of drainage (linked to paths, roads and drains) have the most direct effect on buffering at larger scales	Sumberjaya (Indonesia) Bakun (Philippines) Kulekhani (Nepal)
3. Drinking water provision (surface or groundwater)	Intensive agriculture and horticulture will cause rapid pollution of surface flows and slow but persistent pollution of groundwater flows with nitrogen and pesticides; people residing around streams cause pollution Ecoli & diseases	Willingness to pay for drinking water depends on quality assurance from medical perspective as well as taste	Slow response of groundwater flows to changes in the pollutant status make 'regulation' a more effective solution than results based markets	Sumberjaya (Indonesia)
4. Flood prevention	Land use effects strongest for flow buffering of small-to-medium sized events, with saturation dominating the large events	Relevance of upland land use depends on location ("floodplains") and engineering solutions (dykes, storage reservoirs)	Risk avoidance for the rare category of large events	Not available yet

Environmental Service Typology	Providers / sellers influence	Users / Buyers Expectations	Main Issue	Examples of RUPES cases
5. Landslide prevention	Mortality of deep-rooted trees ('anchors') causes temporary increase in landslide risk	Relevance depends strongly on location in the flow paths	Deep landslides are little affected by land cover	Not available yet
6. General watershed rehabilitation and erosion control	Promoting tree cover and permanence of litter layer protecting the soil is a good precaution	'Holistic' perception of watershed functions survives despite the lack of clear impacts on specifics	Communication gap with scientists who try to enhance clarity	In almost all sites
7. Biodiversity buffer zones around protected area	Use value of buffer zones depend on hunting restrictions, presence of human-life threatening species	Flagship species still dominate the public perception of value	Push and pull factors in human land use; livelihoods operate at larger scales than most conservation plans acknowledge	Not available yet
8. Biodiversity landscape corridor	Still new concept in agriculture/forest land use mosaics in the tropics; use value of patches in the 'stepping stones' similar to the buffer zone case	Relevance depends on dispersion properties of the species of main interest; sometimes higher connectivity not desirable; relevance increases with climate change concerns	Ex ante impact assessment of effectiveness is still difficult	Bungo (Indonesia)

Environmental Service Typology	Providers / sellers influence	Users / Buyers Expectations	Main Issue	Examples of RUPES cases
9. Carbon restocking degraded landscapes	Options for profitable tree restocking primarily depend on policy reform	Demand is for Certified Emission Reduction (CER) rather than carbon	Additionality issues in CDM; high transaction cost	Singkarak (Indonesia)
10. Carbon protecting soil and tree stocks	Road construction (accessibility) is main determinant of 'opportunity costs' for non-conversion		Not recognized as part of CDM	Ikalahan (Philippines)
11. Guaranteeing production landscapes meet environmental standards	Where the 'ecolabel' process starts from the consumer side, there can be a substantial gap in communication and trust, leading to high transaction costs	Consumers with high sense of personal responsibility; gradually replaced by the introduction of standards and the raising of baselines of 'acceptable' behaviour	Relevance of global standards in the face of variation in local conditions; transparency of the standards and compliance monitoring; transaction costs	Still in very initial thoughts of: Singkarak and Sumberjaya (Indonesia) for coffee-ecolabel
12. Providing guided access to landscape amenities particularly ecotourism	The local and international appreciation for landscape beauty depends on culture and time (fashion); rewards are for roles as guide and provider of accommodation, food, transport and handicrafts; gender aspects of provider roles may be prominent	The appreciation of landscape beauty and cultural traditions does not reduce the need to provide security and comfort to potential tourists	Global ecotourism is a highly volatile market where security and political concerns can interfere	Ikalahan (Philippines)

Environmental Services) in contrast to “RUPES” (Rewarding Upland Poor for Environmental Services) was introduced. Three main conclusions were presented.

First, there is the potential for market-based mechanisms to offer financial benefits compared to existing public aid budgets for environmental and poverty alleviation programs. These schemes can be effective RUPES mechanisms whenever they are implemented by the private sector in cooperation with NGOs or other institutions enabling the involvement of all stakeholders. However, the market-based mechanisms provide uncertain benefits. This uncertainty stems from the dynamics of ES supply and demand, where a clear link between the environmental service and the reward is the necessary element for a PES scheme. In addition to this condition, a fair amount of institutional development and capacity building is necessary if the poor are to become the target of these mechanisms and environmental conservation is to be effectively promoted. Finally, the PUPES paper concluded that non-market based mechanisms are theoretically more appropriate for meeting social goals and poverty alleviation objectives. Case studies of ICDP implementations were discussed, although the impacts of these schemes have been mixed. The authors added that the biggest lesson of this review was the difficulty of separating market-based from non-based market mechanisms in practice. The following sections of the paper will discuss the relevance of the three conclusions above to the lessons learned from RUPES and the emerging ‘new trends’.

#### **4. Is the Role of Market-based Mechanisms Still Valid?**

Gouyon (2003) indicated that market-based mechanisms seem to have much larger potential in terms of funding availability and can be effective in meeting RUPES objectives, but they are best implemented by the private sector in cooperation with NGOs or other institutions enabling the

involvement of all stakeholders. In general, the role of private companies was concluded to often result in greater efficiency, under the condition that their activity is closely monitored and complemented by NGOs representing all stakeholders.

Market-based mechanisms are characterized by a prime role for economic incentives, the involvement of multiple actors, choices, and competition. The mechanisms strongly link demand and supply through a process of price adjustment. However, in line with other research conducted in developing countries, the RUPES project developed a typology of environmental services in the context of ES rewards (section 3) and found that it was not a true market system. The research on RUPES typology shows that in most RUPES cases, ‘holistic’ perceptions of watershed functions are dominant. This means that locals believe a ‘good’ watershed involves the promotion of tree cover and permanence of litter layer as precautions for erosion control. This perception is caused by a lack of clear impacts on watershed functions by the existence of trees. Obviously, communication gaps between the government’s and scientists’ perceptions exist and need clarifications. When this becomes the case, the continuum of public regulations—public investment in environmental services plays an important role in finding funding for such mechanisms. These schemes usually produce a ‘memorandum of understanding’ between a group or community and a single ‘buyer’, such as a state-owned-hydroelectric power company under its community development program, and it is clearly not market-driven.

Wunder (2005) emphasized that markets for ES do exist in some developed countries, but in developing countries, they seem remote. At least three obstacles in mainstreaming PES have been recognized. The first obstacle is limited demand from the ES beneficiaries. Since PES is still nascent in developing countries, not many ES beneficiaries are confident about the PES mechanisms, often because the link between land

use and ES provision is insufficiently understood or ambiguous. Additionally, a second obstacle is poor knowledge about the dynamics of ES supply. In developing countries, the institutional preconditions required for suppliers to negotiate a PES deal sometimes do not seem clear enough, especially with regards to how to direct the payment to the poor communities. Wunder (2005) suggested that more hands on experiments were needed. Finally, communicating the PES concept is problematic. In many cases, proponents often use an economic rationale in delivering the PES scheme, while skeptics counter with their perspectives from other social sciences.

### 5. Where does RUPES Stand?<sup>3</sup>

Van Noordwijk and Place (2005) described four different methods encompassing two contrasting approaches to upland area protection– market-based payment for environmental services and non-market based schemes, in this case the ICDP and looked at their effectiveness in achieving the dual goal of environmental conservation and development. The four methods are (1) markets regulating payments for actual ES provided (PES); (2) rewarding/paying land users for accepting restrictions on their land use (the current RUPES principle); (3) co-managing landscapes to reduce poverty and enhance the environmental services of the area; and (4) implementing ICDP. The interactions between providers and beneficiaries of environmental services are analyzed according to six criteria: type and level of rewards/payment; target population and its poverty effect; assumed characteristics of the ES; attribution of ES or conditionality of ‘rewards’; role of a local institution; and priority of actions (**Table 2**). These four approaches resulted from analyzing four levels of interactions between local actors and external stakeholders in their efforts to conserve the environment and achieve development objectives (**Figure 1**).

The first level of interaction begins with the establishment of a set of criteria and indicators between the local stakeholders (or providers of ES) and the external ones (or beneficiaries of ES). The relationship is dependent on how both parties follow the previously set criteria and indicators. The expression ‘pay for what you get’ becomes a modus operandi for the external beneficiaries. This first level is the foundation for any market-based mechanisms. In most cases, the type of payment is monetary and would create new flows of income for the ES providers. The price level, resulting from negotiations between the ES sellers and buyers, is stated in a contract that becomes the basis for the ES payment deal. This contract agreement therefore demands secure control of land tenure from the ES providers. The provision of ES is often measurable as a precondition for the payment and proportional to the activity of providers. Strong local institutions are encouraged to reduce transaction costs and provide economies of scale. Transaction cost reduction and real impact on income become priorities when creating replicable payment models.

At the second level, ‘rewards’ are given if the local actors make efforts that are perceived as good actions by external stakeholders, for example, maintaining good land management that meets specified restrictions or protecting a piece of land that is ecologically sensitive. Agroforestry practices in the tropics are a prime example of how ‘domesticated forests’ can provide local benefits and positive externalities appreciated by the outside stakeholders. In addition, there are many models showing how local communities effectively implement the protection status without calculating the opportunity cost of doing so. In RUPES, the terms ‘stewards’ or ‘guardians’ are recognized for providers of ES. The external beneficiaries will ‘*pay for what they (the local actors) do or don’t do*’. The second level is a basis for the current RUPES principle –rewarding/paying land users for accepting restrictions on their land use. Clear guidelines of land use practices that could lead

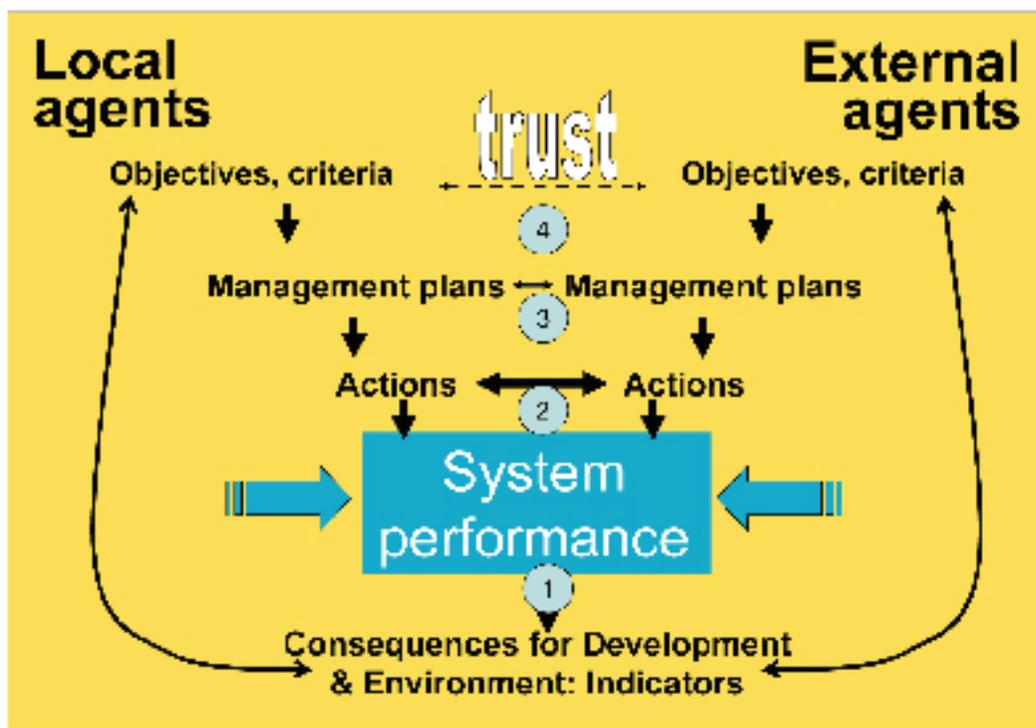
<sup>3</sup>This section adapts the unpublished draft version of ‘Carrots, sticks, donkeys, roads and markets for environmental services: approach change on the PES-ICDP continuum as impact’ by Meine van Noordwijk and Frank Place.

to the improvement of ES provision need to be further developed. Also, as opportunity costs are the basis for sellers to negotiate, the measure of these opportunity costs becomes important.

The third level of interaction introduces the term 'management,' understood as the 'right to regulate internal use patterns and transform the resource by making improvements,' from providing linkages to risk-sharing and conflict resolution (Carlsson and Berkes 2005). Partnership is the essence of co-management and therefore stopping 'PUPES' before implementing 'RUPES' or looking at the concept 'To Not Punish is To Reward' introduced by Gouyon (2003) is relevant at this stage. For example, lifting policies that promote environmentally harmful practices or/and discriminate against the poorer or smaller farmers can create great impacts on behavior. Harmonizing of perceptions on managing the environment to achieve a 'win-win solution' is promoted by the

external stakeholder, who will 'pay for the way they (the local actors) decide what to do or what not to do'.

The fourth level is based on the ICDP principles, which aim to combine the objectives of environmental conservation with poverty alleviation and greater participation of local communities in conservation strategies and activities. Popular participation is secured at all the ICDP cycle stages –from design to implementation, monitoring, and evaluation. People are also expected to provide resources to the project to ensure that they have a real interest in its realization, even if the contribution is limited to labor and the use of local materials. Ferraro and Simpson (2005) referred to the ICDP as an indirect intervention for meeting the environment and development goals that likely require a sustained flow of funds over time to maintain conservation outcomes. Support and trust of mutually agreed upon objectives and criteria become the main basis of this practice.



**Figure 1.** Schematic representation of four levels at which the interactions between local actors and external stakeholders can take place (van Noordwijk and Place 2005)

## 6. Conclusions

At their first stage of implementation, RUPES projects modified market-based mechanisms with conditionality—they strived to operate at the second level of the four approaches mentioned. However, lessons learned from the implementation of the projects at RUPES research sites indicate that RUPES operates more toward the third level of interaction, considering that a ‘holistic’ perception of environmental services still dominates and the main challenge in RUPES mechanisms is poverty alleviation. The conditions that are likely to occur in developing countries, such as inadequate policy and institutional framework including in the field of land tenure, inappropriate intellectual rights on natural resources, lack of institutional framework for local peoples consultation and participation in decisions that affect them, and a general lack of law enforcement, support this conclusion. The recommendation of Gouyon (2003) that three things are needed in designing RUPES mechanisms: laws, policies, and institutions, fit with the immediate actions taken by current RUPES Program.

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**Table 2. Four approaches for the interaction between local and external stakeholders (van Noordwijk and Place 2005)**

Markets Regulating Payments for Actual Environmental Services Provided (PES) – level 1	Rewarding/Paying Land Users for Accepting Restrictions on their Land Use – level 2	Reducing Poverty and Enhancing ES –level 3	Integrated Conservation and Development Projects (ICDP's) –level 4
Type and Level of Rewards/Payments			
Recurrent monetary payments	Recurrent monetary payments	Negotiated, conditional tenure security Reduction of current land use conflicts	Investment in ecofriendly enterprises. It expectedly will lead to long-term payoffs for both rural welfare and conservation
New flows of income	Substantial new fund- ing & investment resources for poverty reduction	Reduction of conflicts and collateral damage to both environment and rural welfare Modest new financial transfers	Trust between conser- vation agencies and rural communities will allow for mutual benefit
Price level is fully negotiable, the market price is the right one (by definition)	Fair price for sellers depends on knowledge of opportunity costs for the land user Buyers 'efficiency' is protected by requiring 'additionality above baselines'	Improved public services (above base- line) can be a suitable form of rewards	Essentially public investment to enhance welfare at the level of society
Target Population; Poverty Effects			
Land owners or at least persons/agencies with secure <i>de facto</i> control	Land owners or at least persons/agencies with secure <i>de facto</i> control	Any marginalized communities, including migrants	Upland and 'indigenous' people in and surrounding areas of high conservation value
Assumed characteristics of the environmental service			
The ES is 'divisible' and at least propor- tional to the activity of providers Exclusion from the service is possible 'Optimum levels of threat' are the main selling point for providers	Land use prescriptions are the most effective way of guaranteeing persistence of the service, as they can be easily monitored and understood	Environmental services are 'emergent proper- ties' and only exist if all land users are involved ES thus require land use planning & management Need trust, shared responsibility for effective co- management of landscapes	Integrity of the core protected area implies continuity of the envi- ronmental services The main function of the 'buffer zone' is to provide local income while protecting integ- rity of the core area

Attribution of ES; Conditionality of ‘Rewards’			
No LU prescriptions/ micro-management; as long as the service is there payments will continue ; stimulates local inventiveness and increase in efficiency of ‘producing’ the service desired	Clear, identifiable ES can be attributed to providers & activities	Complex causality, no simple attribution possible in many cases  Public funding justified when ES provision (result) depends on level of participation  (Broader ‘emergent properties’ of ES provision)	Integrity of the core area is the target
Potentially any positive externality (lateral benefit flow) or desirable condition can be rewarded Payments are conditional to ‘service indicators’	Only those land use prescriptions that generate lateral benefit flows that exceed a baseline of ‘business as usual’ can be rewarded	Enforced baseline of ‘good’ behaviour  Expected/normative quality standard is non-trivial  Rewards must build on standard of improved care	The investment cannot be withdrawn, conditionality is replaced by ‘trust’ and self-interest in mutual goals
Local Institutions			
Local institutions can help reduce transaction costs and provide economies of scale	Strong local organizations needed Ready for project cycle transactions and negotiations	Local conflict resolution needed Access to info about landscape level ES is priority Environmental education needed: formal & informal channels	Environmental education needed: formal & informal channels
Priority Actions			
Create replicable, payment models Reduce transaction costs & provide economies of scale	Establish clear guidelines of land use practices to be avoided/ promoted Measure opportunity costs	Stop lose-lose scenarios for poverty & environment (Prevent/reduce “PUPES”)	Establish trust in clearly prioritized areas of high conservation value