Institutions for Payments for Environmental Services ; Challenges and Opportunities in Uganda

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TABLE OF CONTENTS

1. INTRODUCTION

Paying for the provision of environmental services is a recent policy innovation that is attracting much attention in both developed and developing countries. Markets for ecosystem services such as carbon sequestration, watershed services and biodiversity conservation are steadily growing and can be expected to grow even more rapidly in the next decade. Yet the schemes in Uganda predominate as pilot projects. What then, would it take to transform these markets to impact ecosystem conservation on the global scale? Assuming there is adequate demand for ecosystem services and willingness to pay, what are the institutional preconditions required for suppliers to negotiate a PES deal? If a PES scheme takes off, how will direct benefit transfers work in often remote, cash-poor communities such as those in Uganda—both as resource-use incentives and in terms of local livelihood dynamics?

This paper looks at the policy frameworks and institutions required for functioning ecosystem service payment systems in general and highlights challenges and opportunities for Uganda.

Every market requires basic rules and institutions in order to function. Policymakers and public agencies play a vital role in creating the legal and legislative frameworks necessary for market tools to operate effectively. This includes establishing regulatory rules, systems of rights over ecosystem services, and mechanisms to enforce contracts and settle ownership disputes. Ecosystem service markets pose profound equity implications, as new rules may fundamentally change the distribution of rights and responsibilities for essential ecosystem services. Government and civil society need to take a proactive role to ensure that rules support the public interest and create development opportunities.

Institutions are also needed to provide the business services required in ecosystem service markets. For example, in order for beneficiaries of biodiversity services to become willing to pay for them, better methods of measuring and assessing biodiversity in working landscapes must be developed, as well as the institutional capacity to do it. New institutions must be created to encourage transactions and reduce transaction costs, such as "bundling" biodiversity services provided by large numbers of local producers, and investment vehicles that have a diverse portfolio of projects in order to manage risks. Registers must be established and maintained, to register payments and trades. For example, the Katoomba Group developed a web-based "*Ecosystem Marketplace*"[1] in order to slash the information and transaction costs for buyers, sellers and intermediaries in ecosystem service markets.

1.1 BACKGROUND

[1] See www.ecosystemmarketplace.com & www.katoombagroup.org

1.1.1 What are Payments for Environmental (Ecosystem) Services (PES)?

Payments for ecosystem services (PES) initiatives are a mechanism in which individuals or communities are compensated for undertaking actions that increase the provision of ecosystem services such as water purification, flood mitigation, and carbon sequestration. PES policies rely on incentives to induce behavioral change, and can thus be considered part of the broader class of incentive- or market-based mechanisms for environmental policy.

1.1.2 Types of PES

Wunder (2005) found that four PES types currently stand out:

1) Carbon sequestration and storage (*e.g. a Northern electricity company paying farmers in the tropics for planting and maintaining additional trees*);
2) Biodiversity protection (*e.g. conservation donors paying local people for setting aside or naturally restoring areas to create a biological corridor*);
3) Watershed protection (*e.g. downstream water users paying upstream farmers for adopting land uses that limit deforestation, soil erosion, flooding risks, etc.*);
4) Landscape beauty (*e.g. a tourism operator paying a local community not to hunt in a forest being used for tourists' wildlife viewing*).

Sometimes several services can be provided in a synergetic way — and a 'bundled' payment scheme can enable several service users to package their payments to service providers. But not all services are truly threatened and scarce, and not all users are willing to pay. Partial trade-offs between services are also likely: for example, a fast-growing plantation that maximizes carbon sequestration is perhaps not particularly biodiversity-rich, water-enhancing or attractive for tourists. Environmental services other than those listed above could potentially be traded (e.g. wilderness areas providing pollination services to agriculture), but so far only the four identified above exhibit significant commercial scale. (Wunder, 2005)

Market mechanisms to pay for other ecosystem services--watershed services, carbon sequestration or storage, landscape beauty, salinity control--can (and should!) be designed to conserve biodiversity as well.

2. PES IN THE UGANDAN CONTEXT

Over 90% of Uganda's population depends on natural resources for their livelihoods. Furthermore, Environment and natural resources contribute over 50% of Uganda's GDP. There are disproportionate reward systems for environmental services, where the private investor takes all and the communities earn very small loyalties. However, slowly by slowly there is a growing interest in market-based approaches such as payments/incentives for ecosystem services (PES) to encourage community participation in the provision and conserving ecosystem services. The potential that

these mechanisms pose for encouraging sustainable land management, biodiversity conservation and rural livelihoods is enormous, yet it has not been adequately exploited. It is also quite clear that PES mechanism are still largely at an infant level and they are grossly mixed up with corporate social responsibility schemes, and alternative income generation channels for large corporate institutions such as sugar companies.

An inventory of PES schemes[2] carried out in 2005 found two forms of PES namely:

A) Direct monetary payments to land managers or resource managers as providers and guarantors of a particular ecosystem service;
B) Payments/incentives in kind such as the Organic Products Certification and Eco labelling Initiative which has resulted in access to the lucrative European Union and US markets. The ecosystem services of such products are recognised and compensated through premium prices. Other incentives/payments in kind include access to protected areas, training of farmers in ecologically sound methods that result into preservation of ecosystem services, the carbon market capacity development program, and so on.

The study, though, found very few cases where direct payments occur. Most ecosystem providers were not aware that the services they provide have a monetary value, and the beneficiaries were not aware of the need to compensate the providers. In the few cases where money is changing hands, it was not very clear if the payments given as incentives (as in the case of revenue sharing), or as actual payments for providing an ecosystem service. However, in all these cases, the potential for scaling these up to PES exists and needs to be tapped. It is also likely that Government can and should play a role as catalyst for such payments – either as a direct buyer, regulator and promoter of PES mechanisms to the private sector.

A more recent analysis[3] focusing on the CDM market found that power, waste, transport, forestry and agricultural sectors offer good scope for CDM projects in Uganda. Natural gas and hydro electric power have been found viable for CDM projects in the power sector.

2.1 Why PES?

To a developing country like Uganda, PES schemes provide other environmental benefits (*in addition to climate change mitigation, biodiversity, protection and watershed protection*). For example, PES schemes could lead to the introduction of clean technology over and above that which would come from other arrangements; and PES may also bring additional financial inflows to the country.

[2] Ruhweza & Masiga (2005); An Inventory of Initiatives/Activities and Legislation Pertaining to Ecosystem Service Payment Schemes (PES) in Uganda.
[3] NEMA (2006); The Political, Economic and Technical reality of implementing Green House Gas Emission Reductions in Uganda – presented at the ISEE conference in December 2006

There are also social benefits such as creation of employment as well as income generating activities to rural communities. Increased finances could also lead to the provision of clean water, health facilities and education facilities with and without the project. Therefore any baseline would have to look at how the above social services would look like with and without the project.

A large section of the country's poor are unable to compete favourable in the integrated global trading system because they are not competitive enough. On the one hand Uganda has the lowest fertilizer use rate in sub-Saharan Africa at 1kg/ha and other hand people engage in farming practices that are described in FAO literature as non-certified organic agriculture. Local level managers of natural resources have often complained of limited funding yet most of the local revenues generated are from natural resources. Furthermore, opportunities exist for sustainable enhancement and restoration of ecosystems that would have a greater chance of success if they were integrated with PES initiatives.

As such, in Uganda PES initiatives offer a proactive form of engaging local communities in conversation and enhancing the productive value of ecosystems that have been degraded or have the potential to be degraded. Indeed, it is unlikely that private sector will be interested in these ecosystems when they are degraded.

3. LEGAL & REGULATORY CONTEXT FOR PES IN UGANDA

3.1 CARBON

The *National Forestry Business Plan* (2003) promotes the use of incentives to encourage private sector involvement in tree planting activities. It specifically encourages involvement in tree planting and accessing global financing mechanisms for forestry activities such as the World Bank Carbon Funds, and the Carbon trading financing mechanism provided for under the Clean Development Mechanism (CDM) of the Kyoto Protocol to the United Nations Framework Convention on Climate Change (UNFCC). Uganda Investment Authority (UIA) has prioritised the forestry sector, transport and energy sectors as core to investments in carbon trade. The Energy policy for Uganda states government's support and intention to promote alternative sources of energy, and technologies, which are environmentally friendly. It also states government's support for CDM and GEF projects. Government has piloted a credit line through local banks to promote solar PV energy.

The absence of a land use policy means the other land legislation available is ambiguous on people's rights to use land to participate in carbon trade. The procedures that UIA has set out and the fact that the project has to first be in line with national development goals to be accepted by the Ministry of Finance, Planning and Economic Development (MFPED) may lead to a longer planning period and exclude some projects.

The *Local Governments Act, no 1 of 1997* did not envisage that the capacity needs to handle such programmes at local government level. The carbon programmes in

Uganda are therefore still coordinated from the Ministry of Water and Environment (MW&E). With no land use policy the right to sell ecosystem services is ambiguous except for individuals that have concessions for public forest reserves and those who trade emmission reduction credits (CERs) from renewable energy. However, one would still work with the present legislation and participate in the market. At this stage community participation is being initiated. While the current legislation does not bar this type of participation, the procedural stages and the complexities may make it hard for communities to find buyers and satisfy all the other requirements such as validation and certification and capitalisation

3.2 BIODIVERSITY

The National Environment Act Cap 153 (1995) brings together all sectoral agencies involved in environmental management with NEMA as the overall body to maintain stable functioning relations of the environment through preserving biological diversity ; reclaiming lost ecosystems where possible reverse the degradation; establish adequate environmental protection standards and monitor changes in environmental quality; publish relevant data on environmental quality and resource use; require prior environmental assessments of the proposed projects; ensure that the true and total costs of environmental pollution are borne by the polluter;

The *Uganda Wildlife Act Cap 200 (2000)* introduced the concept of tradeable wildlife use rights to hunt, farm, ranch, trade in or use wildlife for educational purposes. The Statute provides for their management and transfer. The wildlife use rights are classified as hunting, farming, ranching, trading in wildlife products, educational scientific or medical uses and general extraction; these wildlife use rights are transferable and in some cases, a transfer permit is needed especially for hunting and educational scientific or medical uses.

The decentralisation system provided for by the Local Government Act 1997 has vested the power of managing environmental and natural resources at Local Government District level. The Wetland Sector Strategic Plan (2001 to 2010) urges for mobilisation of local and international financing mechanisms for wetlands management and conservation in Uganda. The policy promotes new and exciting management approach involving local people in the co-management of fisheries resources.

The *Wildlife statute* preserves community property rights. The statute recognizes and guarantees the historic rights of individuals and communities, which were recognized, in previous laws such as the National Parks Act, the Forests Act, and the Game (Preservation and Control Act). For highly populated protected areas therefore implementation of PES would involve too many stakeholders making it expensive and time consuming.

The *Local Governments Act, no 1 of 1997* created a policy of decentralization pursued by the government and decentralization policy also of natural resource

management to the lowest levels. The local governments now are in charge of protection of wetlands, soil erosion control and forest fires.

While the fisheries policy offers an inroad for communities to participate in the management of fisheries, it does not go far enough in defining rights over lake and river resources. Therefore, the market will always be affected as the service may always be seen as public good, which is non-excludable. In deed, the fisheries policy does not explicitly identify investments that are aimed at enhancing the value of the fisheries unless the investors in fisheries enhancement schemes are also engaged in commercial fisheries as well to directly recover the value of their restoration or regeneration activities. However, government can be involved in providing restoration services as a public good.

3.3 WATER

The *Water Act*, enacted in 1995, is the fundamental code for the use, protection and management of water resources and water supply; it establishes penalties for pollution, and enables the Government to recover the costs of major environmental damage from polluters. It also provides for the revocation or cancellation of water permits

A ***Sector Planning and Co-ordination Unit*** has also been established under the Directorate of Water Development (DWD) to monitor the implementation of the Water Action Plan.

4. BARRIERS TO IMPLEMENTING PES IN UGANDA

4.1 Informational Barriers:

Potential buyers of ecosystem services (consumers, businesses, utilities, government agencies at all levels, and even conservation NGOs) are often unaware of their dependence on ecosystem services. In addition, potential sellers are not aware of ecosystem service payments and markets and even when they are, do not know how to find potential buyers. Further compounding the situation, few policymakers and regulators are knowledgeable about the policy requirements and implications of payments for ecosystem services. Finally, there is a shortage of service providers and project developers to assist with nascent PES deals.
In Uganda, for example, limited data on emissions is one of the biggest challenges associated with determination of emission reductions for CDM projects. There is lack of useful efficiency data for the required estimations, actual figures are not available for some sectors and the limited historical data poses an obstacle to calculating these GHG emissions. There have been attempts in the past to carry out natural resourcing accounting in the forestry and fisheries sub-sectors, however, these efforts were not comprehensive enough as they relied on secondary data and no new data was collected. Only a few case studies based three to four target districts are used to make estimates about the National potential for CDM projects. Moreover,

the findings of the PES Inventory (Ruhweza and Masiga, 2005) suggest that there are a lot more projects and initiatives that are skipped.

Lack of awareness also impacts the ability to **find willing and able buyers of environmental services**. PES is too nascent and thus risky. Another key issue for buyers is the lack of clarity over what it is they are buying, as the linkages between specific management practices and ecosystem services outcomes are often unclear, particularly related to water and soil sequestration of carbon. Addressing these issues often requires specific technical skills to bring the right kind of information to the buyers – including information on the value of the ecosystem service and what benefits it will deliver. Ideally, a base of intermediaries would exist with the skills to assess linkages between management and ecosystem service outcomes, either in-country or at least in-region. However, this availability of technical assistance is more limited and tends to be costly.

Since without a buyer, no PES deal is possible, it is essential that buyers are clear about exactly what they could buy as well as what risks are associated with the deal. Therefore, having effective mechanisms to identify, develop the interest of, and allay the concerns of buyers is an essential first barrier that must be overcome in all settings.
As a result of these information gaps, most of the projects in Uganda are *ad hoc,* decentralised and do not follow any uniform guidelines. There is a clear need for designated national, and/or regional, institutions that can serve as a repository of information on "how to" guidelines, regulations, national priorities, and other key issues. Awareness programmes for the private sector, financial institutions, parliamentary caucuses and others stakeholders are also needed

4.2 Technical Barriers:-

There is a general lack of individuals and organisations with the requisite knowledge to organize, design and implement payments for ecosystem services (PES) effectively. Even where sellers and buyers may be aware of the ecosystem services, the technical skills needed for PES are seldom readily available, such as experience with methods for calculating the financial value of these services and assessing the price that buyers should be willing to pay and sellers willing to receive. In addition, "best practices" have not yet been established through extensive on-the-ground experience and examples in the region. This gap increases the risks for buyers, both in terms of reputation and return on investment.

For prospective sellers—including land and resource owners as well as environmental stewards—the technical barriers are significant. Few have access to the specialized skills needed to assess the market potential of their resources and the potential resource management options that would focus on restoring and maintaining ecosystem services. Also, PES models that clearly work for to low-income communities are few and often unproven. And if low income community members wish to go beyond carbon or water deals, particularly to consider multiple ecosystem

services "bundled," they find that robust and proven models for biodiversity payments are especially weak.

Within government, policymakers and regulators often have inadequate understanding of PES to determine where, when and in what forms are appropriate, particularly in relation to national or sub-national strategic priorities for conservation and development. And many prospective PES service providers and project developers lack the technical and business skills and knowledge specific to PES, including: market analysis, enterprise analysis, contract familiarity, project design, implementation and measurement and monitoring. Once again, this lack of capacity means that **expertise has to be outsourced – which results in higher start-up or transaction costs which may render the PES scheme unprofitable**

Negotiating and structuring deals serves as another technical barrier as it requires knowledge of how specific natural resource management practices within particular ecological contexts would result in maintenance of the desired ecosystem services. Simply put, the question is whether particular practices will deliver real conservation benefits over time. One approach is by working with specialists and/or institutions that play the role of aggregators—of ecosystem services and deals—who assist with explaining how to "bundle" multiple ecosystem services for purchase by buyers. Such in-country specialists are few, and even of they were available, hiring them is very expensive and ends up increasing the transaction costs

In addition, for communities, there may be barriers to the negotiation of deals related tenure rights, literacy, familiarity with entering into contracts. Communities can also encounter unfamiliar terrain in terms of the logistics related to receipt and expenditure of funds, particularly if the revenues will be paid to the community as a whole and not to individuals.

To address these barriers, there is need for strengthening capacity of buyers, seller service providers, and policy makers by developing the requisite skills and knowledge through training and other interventions

4.3 Policy and Regulatory Barriers:-

In many cases, there is confusion about appropriate government roles in the development and operation of specific types of PES. In some cases, problems have arisen from an insistence by government officials that flows of funds should go through particular agencies. More fundamentally, there are conflicts between delivery of ecosystem services as "private goods" versus "public goods;" over existing rights to ecosystem services and the flow of benefits from their sale; and related to equity issues for low-income buyers or sellers of ecosystem services.

Nonetheless the inventory in Uganda found that policies establishing rights to buy and sell ecosystem stewardship services have not been a prerequisite for pilot activity in PES. The lack of policy support is felt more at the expansion stage as well as, in some cases, reducing the prices buyers are willing to pay. This is because

without policy and regulatory arrangements, potential PES buyers are not certain about the legal standing for purchases and the enforceability of contracts is unclear. Private sector buyers may also be unsure about the political and public acceptability of their role in PES. In addition, both buyers and sellers may be uncertain about underlying tenure rights for land and resources, thereby increasing the risks of long-term ecosystem service agreements.

Addressing all of these policy and regulatory issues would require the establishment of "pro-poor" PES legislative and regulatory frameworks that take all the above issues in consideration including policies/regulations for the establishment, or certification of service providers for PES.

4.4 Institutional Barriers:-

Uganda lacks necessary institutions across the value chain from seller to buyer — such as certification bodies; financial intermediaries; national registries for ecosystem services; and so on—therefore current PES transaction costs are very high as these have to be outsourced. In most of the CDM projects for example, to actually achieve ecosystem service benefits requires effort over a larger area than a single company can afford to finance. PES-friendly institutional mechanisms are therefore essential to provide economies of scale and scope in finding and negotiating with buyers, bundling multiple ecosystem services for different markets, and achieving efficiencies in management, monitoring and certification.
Currently, most PES support is provided by international public sector or by conservation NGOs still in the early stages of the PES learning curve, rather than by business leaders or seasoned leaders in PES development.
There is therefore a need to establish PES enterprise support centers for advisory and capacity-building services. There is also a need for community level institutions to engage and train prospective sellers, as well as financial institutions at the community level for efficient delivery of payments. Finally, public private partnerships are important to develop to encourage an enabling environment for PES deals. The essential element is to create a context in which the parties entering into deals feel confident that revenues flowing in from the PES scheme will be administered appropriately and will go to the intended uses as outlined in the agreement

Even though some local organizations/consultancy firms and NGOs that provide some of the above services are starting to emerge in Uganda, it would be cheaper if such activities are taken over by a fully facilitated Government body which can offer them at a subsidised rate. Even if PES initiatives were to stay in the private sector domain there is a need for strong regulatory and enforcement mechanisms to ensure all the revenue does not end up in private hands. One of the major driving forces for a government orientation is that the potential beneficiaries of PES schemes are poor people who may not be empowered enough to make claims for the environmental services they provide. Additionally, the district level environment management officers are not yet adequately skilled to run PES initiatives. Indeed, where activities akin to PES exist the authority is often usurped by the local politicians. It should be

noted that the environment departments for many districts in Uganda are weak as they are not seen as income generators.

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Absent consideration of how institutional interactions will occur—between new and old oversight practices within existing entities and/or across new and old entities—it is likely that unintended institutional complexities and consequences will occur.
Therefore, there is a challenge of meshing PES accountability and transparency mechanisms with existing institutions—from a government through a rural community level.

A program that begins to address the core barriers to PES methodically—through building capacity among the key players in regions and countries—will lay the foundation for significant new revenue streams for ecosystem restoration and conservation well into the future.

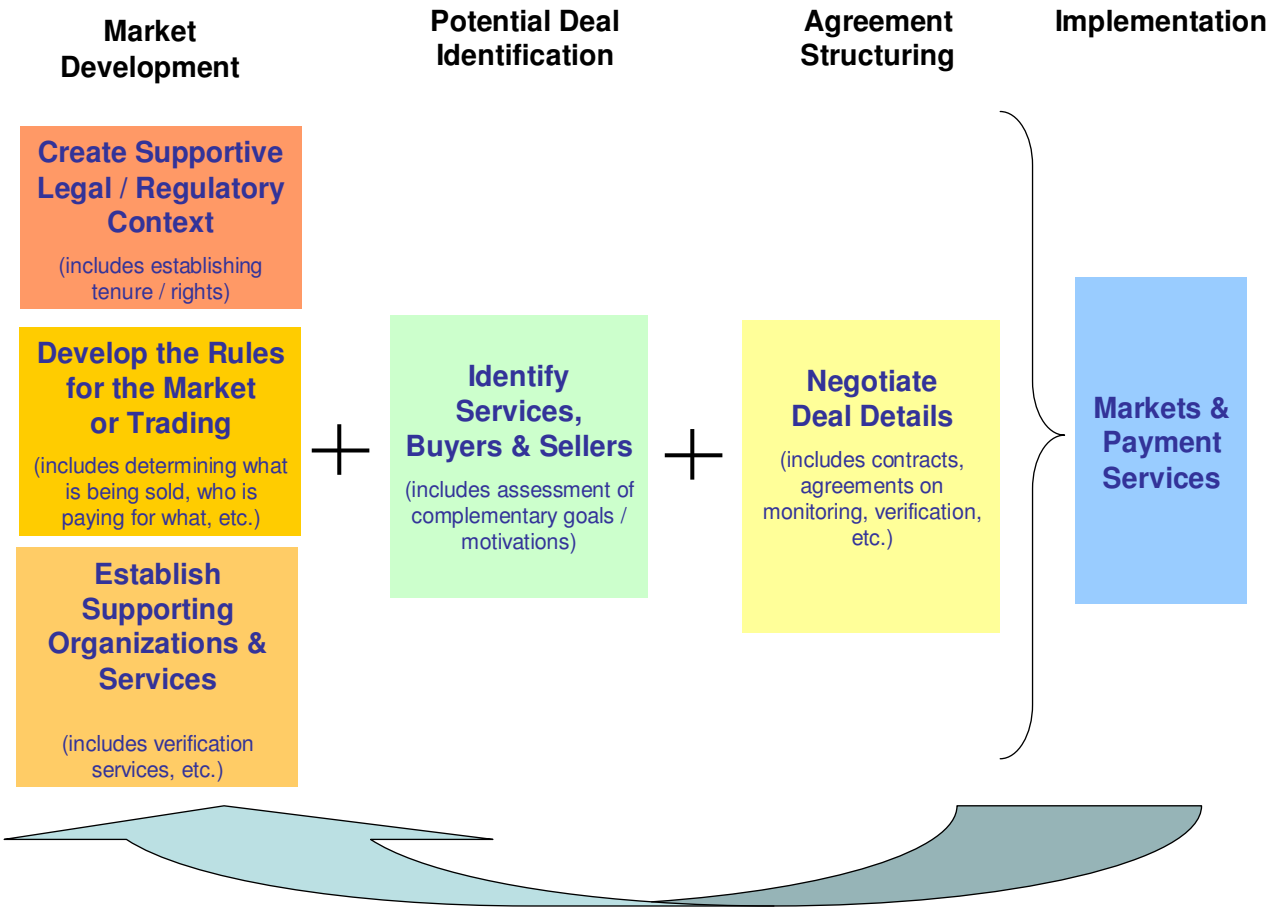
5. A CLOSER LOOK AT INSTITUTIONAL ISSUES FOR PES
The Challenges and Opportunities for Uganda

PES schemes cannot function without having the necessary institutional capacity in place. This is important at the local and national levels. National governments have to play a pivotal role to create the necessary legal framework, while International institutions and NGOs may be needed for brokering, monitoring, and evaluation tasks. This would also include identifying the leading institutions relevant for PES design and implementation and distributing responsibilities among them according to capacity.

Within the objectives of reducing overall transaction costs related to the implementation of PES schemes and limiting the financial risks involved, new institutions might also need to be created[4]. A continued dialogue between market and environmental experts[5] will be necessary in order to assure a sustainable and efficient regime. *(**Figure 1** below illustrates the stages that a PES scheme goes through from the beginning to the end – and underscores the importance of institutional mechanisms for PES*)

Figure 1: AN OVERVIEW OF PES "LIFE CYCLE"

[4] Sherr, S., White, A. & Khare, A. (2004), op. cit.
[5] Some organizations that could potentially take a leading role in this continued dialogue could include, but are not limited to, the Katoomba Group and its Ecosystem Marketplace, the Convention on Biological Diversity with its clearing house mechanism, the World Bank and the Global Environment Facility (GEF), the World Wide Fund (WWF), as well as potential partnerships between UNEP and IUCN.



Adapted from Brand, David. 2002. "Investing in the Environmental Services of Australian Forests," in S. Pagiola, J. Bishop, and N. Landell-Mills (editors). *Selling Forest Environmental Services: Market-Based Mechanisms for Conservation and Development.* London, U.K.: Earthscan Publications.

5.1 Property Rights and Land Tenure

In order for environmental markets to work efficiently, property rights need to be clearly assigned[6]. In many prime application areas for PES schemes such as biodiversity-rich tropical forestlands, such property rights are often ambiguous, not enforced, or even non-existent. A further complication arises from the fact that the land users are often not the owners**. In Uganda, most women do not own land –, despite the fact that they frequently carry out the activities that lead to ecosystem stewardship. They, therefore, are not in position to negotiate a PES scheme let alone benefit from their activities. Furthermore, land in some parts of Uganda is communally owned which makes it difficult in identifying – who to pay**

If sufficient governmental institutions are present, property rights can be clearly assigned and enforced. Owners of these rights then become potential sellers in PES schemes. In this case, rights can be given to individuals, firms, or communities.

[6] Kumar, P. (2005), op. cit.

Assigning property rights distributes wealth and should thus be seen in the context of making PES schemes pro-poor. If property rights are difficult to establish or clarify, it may also be possible to work with the 'de facto' property owners, i.e. the land users[7]. In the long run, this can, however, raise the incentive for profit-oriented companies to acquire land for ecosystem service delivery, which may restrict access for traditional land users.

5.2 Legal Systems and Implementing Institutions

Legal systems are relevant to PES schemes in two ways. Firstly, the selling and trading of ecosystem services needs to be enabled within the legal framework of the respective country or province[8]. Legislation can go further by specifying the details of the process and by assigning oversight, certification, and monitoring responsibilities to governmental institutions, NGOs, or private businesses. Most of the laws in Uganda enable PES – however, they are not directly specific to PES. Therefore, they may limit certain aspects of PES such as what the price charged should be, etc. However, many of these tasks can potentially be specified through voluntary agreements or other negotiated frameworks. Formal and informal institutions outside the effective legal framework may be helpful in making markets more efficient and in reducing transaction costs[9]. This is particularly important in areas where property rights are not clearly defined, as transactions will only be able to occur through informal agreements.

Secondly, legal frameworks at local, national, or international levels can use regulations to impose certain caps on the depletion of natural resources and pollution. This could stimulate demand for ecosystem services if the framework allows emissions or resource use to be offset by purchasing ecosystem services from service providers. **Uganda's National Environment Act provides for this through the polluter pays principle – but it has been very difficult to operationalise because the Finance Ministry has to give the final word – yet environmental issues are not that high on their agenda. There are also issues around where the funds raised will go – who will manage them, how they will be used and so on. On the other hand, the environment sector has not articulated its position on PES sufficiently for government to see a revenue stream that can benefit national priorities of poverty eradication, employment, and empowerment of rural communities. There is still work to be done to convince government that PES can indeed one of the ways of ensure sustainable utilization of natural resources in the country.**

5.3 Managing the PES Transactions

[7] Ferraro, P. & Simpson, R.D. (2003) *Protecting forests and biodiversity: Are investments in eco-friendly production activities the best way to protect endangered ecosystems and enhance rural livelihoods?* Paper presented at The International Conference on Rural Livelihoods, Forests and Biodiversity, May 19-23 2003, Bonn, Germany

[8] Savy, C.E. & Turpie, J.K. (2004), op. cit.

[9] Kumar, P. (2005), op. cit.

Distributing the Payments: - Establishing a well-functioning market for ecosystem services is dependent on the capacity to distribute the payments efficiently. Private deals that are established on a voluntary basis do not face any complications in this regard. However, publicly managed payments schemes and cap-and-trade programs need to be aware of the distribution mechanisms when designing PES and IPES. Once again, in Uganda, the question would remain as to which entity is rightly placed to manage and distribute payments? Is it the National Environment Management Authority or the Ministry of Finance? The latter has been sceptical in letting funds go into the hands of any other entity – rather preferring to be the custodian and letting the entities submit budgets. This is not really ideal because the finds are commingled and may not go back to manage and restore the ecosystems they are meant to restore.

Determining the Form of Payments: -When designing PES schemes, one has to carefully deliberate the form in which the payments are to be made. Suggested currencies include money, technology, or goods and services[10]. Clearly, the form of payment may alter the incentives and effects of a PES scheme on both potential buyers and sellers[11]. Cash is the most flexible currency and seems to be appropriate when ecosystem services suppliers forgo cash income by providing the services. However, most development practitioners fear that money payments may be a problematic approach when dealing with rural communities who may lack the education and experience to use the newly acquired funds wisely. Tenure issues also play a part here- especially in areas like northern Uganda where land is communally owned. Therefore, using in-kind compensation for provision of ecosystem services may in some cases be more appropriate.

Potential buyers might also be sensitive to the payment currency. While donor governments may be interested in offering debt-for-nature swaps or in combining development aid projects with PES schemes, private sector investment in ecosystem services may prefer cash payments for the sake of simplicity (and avoidance of further liability). There is need to take a closer look at how the form of payment fits in with the general conservation goals, and the necessary institutional change that would have to go along with whatever form of payment is chosen.

Permanence of Payments: - The duration of a contract can have a strong influence on the type of service that will be provided. In the case of carbon sequestration contracts, for example, forests could be cut down as soon as the transaction has been completed. In Uganda, there are already questions being raised about whether is really worthwhile to ask farmers to dedicate their land to tree planting for 15 years at a rate of $3 - $8 dollars per tonne of C02 sequestered. Unless it can be proven that the present value profits of alternative land uses do not differ by much, in which case a one-time payment may tip the balance and can induce land users to change their behavior for good, especially if an investment is necessary in that conversion

[10] Perelet, R. (2005) *Towards Sustainable use of Ecosystem Goods and Services: Economic Issues* document prepared for the Central and Eastern European Regional Expert Workshop on Sustainable Use of Biodiversity, Moscow, May 30 to June 2, 2005.

[11] Wunder, S. (2005), op. cit.

process[12]. However, in order for the PES scheme to be worthwhile, it must incorporate some kind of mechanism to make payments continuous and contingent upon compliance by the seller[13]. Uganda's National Environment Act also provides for this and it should be operationalised

5.4 Monitoring and Evaluation

In the case where the beneficiary of a service can directly observe the delivery of the service (*e.g. the downstream water user who depends directly on the managed flow of water*), monitoring and enforcement are quite straightforward. The beneficiary will simply cease payments if the service is not delivered (*breach of contract).* However, other services may require outside monitoring or some other monitoring mechanism to ensure delivery. This is the case for the Kyoto Protocol, where emission abatement needs to be certified before an emission permit is issued. The same will probably need to apply for most PES schemes where demand is induced through governmental regulation.

Voluntary schemes might also benefit from a monitoring mechanism so that potential buyers are not required to monitor the transactions themselves, because it might often be inefficient or even impossible to do so, especially in Uganda where there is lack of capacity and manpower to carry out the monitoring. In this case, it may be helpful to further explore more elaborate monitoring tools and techniques such as Geographical Information Systems (GIS) and remote sensing[14].

Just as the delivery of services needs to be monitored within a particular PES scheme, there has also been discussion concerning the monitoring and evaluation of PES projects themselves. While many resources are invested in the design and implementation of PES-like schemes, the evaluation of the successes receives much less attention[15]. In Uganda, this is especially true in wetlands and forest reserves where encroachers have been evicted and there is need to monitor the progress of ecosystem restoration.

It has been argued that some of the money flowing into the creation of payment schemes should be used to run some case study experiments and quasi-experiments using advanced statistical techniques in order to assess the effectiveness of PES schemes and the conditions necessary for their success[16]. The gathered data could enhance the work related to PES in general. In addition, some simpler and easy-to-apply guidelines for project evaluation, which help project implementing organizations to rigorously assess their efforts and improve efficiency, may need to

[12] Pagiola, S. et al (2004), op. cit.
[13] Wunder, S. (2005), op. cit.
[14] Kerr, J.T. & Ostrovsky, M. (2003), *From Space to Species: Ecological Applications of Remote Sensing*, Trends in Ecology and Evolution, Vol. 18 No. 6, June 2003.
[15] Ferraro, P.J. & Pattanayak, J.K. (2006), *Money for Nothing? A Call for Empirical Evaluation of Biodiversity Conservation Investments*, Plos Biology, April 2006, available at: http://biology.plosjournals.org/archive/1545-7885/4/4/pdf/10.1371_journal.pbio.0040105-L.pdf
[16] Kerr, J.T. & Ostrovosky, M. (2003), op. cit.

be developed. The East and Southern Africa Katoomba Group is looking for ways to do this in Uganda and other participating countries[17]

5.5 Equity Issues

While economies of scale and lower transaction costs can certainly be achieved by favoring large PES contracts, most farmers in Uganda are small scale and could become marginalized in the process. The issue of property rights is also a key determinant in ensuring equitable participation, potentially excluding landowners (and especially women) who do not hold proper land titles. Consequently, the conservation of areas where property rights are not clearly defined becomes impossible.

Also on the subject of participation, institutions implementing PES schemes need to be wary of the free-rider problem, which is often present when dealing with public goods and services. An example is the tourism industry, which benefits directly from beautiful and diverse landscapes. Key beneficiaries such as tour operators and hotels will need to be tapped into. Uganda is hosting the *Commonwealth Heads of Government Meeting* (CHOGM) in November this year and a number of hotels are being constructed. This would be a good opportunity to engage the investors in payments for Uganda's environmental services (such as beautiful and diverse landscapes, wildlife) – and to also engage them in how to ensure the event is "*carbon neutral"*

5.6 Gaining Political Support

If payment and trading platform schemes are to be used more intensely in Uganda political support needs to be increased. For this, the relevant Government institutions (both national and local) and top policy makers (members of parliament inclusive) need to become more familiar with the concept of ecosystem services and how it can be used as an environmental policy tool.

Gaining government support is essential to the functioning of PES schemes for various reasons. Firstly, the cooperation of institutions that provide ecosystem services is needed when implementing local projects. Their support is necessary to clarify issues of property rights and legal frameworks, and existing government institutions and agencies may be a valuable asset of overall institutional capacity. Secondly, governments are potential buyers of ecosystem services. Thirdly, any effort to create demand through regulation will need government support.
It is equally important to get the private sector more involved, and considering private companies as key stakeholders in the process of implementing PES. There are many companies in Uganda that depend on ecosystems (water, forests, etc) for most of their business operations. Their interest in conservation can only grow as payments for ecosystem services become more and more widespread.

[17] See www.katoombagroup.org/africa

Increased cooperation and information exchange with the private sector, governments, relevant NGOs, and other potential buyers can help assess and channel the existing demand for ecosystem services, thus giving opportunities to create new markets. In Uganda, *The East and Southern Africa Katoomba Group* is holding roundtables with prospective ecosystem service buyers (such as breweries, hydro-electric companies, timber processing companies, water bottling companies, etc) in Uganda to determine whether they are becoming aware of linkages between their core operations and critical ecosystem services on which they rely, and whether or not they see a business case for investing in the restoration and maintenance of ecosystems for reliable and flows of ecosystem services.

5.7 Coordinating at the International Level

Many institutions, NGOs, governments, and companies are working on PES schemes. An increasing number of PES or PES-like projects are being implemented throughout the world and the knowledge available is increasing. However, most PES efforts are small and *ad hoc* mainly because of lack of institutional capacity to operate at regional or international levels.

Scaling up PES efforts to the international level can be beneficial in various ways. Firstly, the increased international coordination across institutions, governments, organizations, and the private sector can create synergies. Lessons learned can be shared among interested parties, expertise can be combined for joined efforts, and resources can be targeted more effectively. Secondly, operating at the international level can raise awareness and increase the likelihood of large corporations getting involved in the process. A salient example is *the Katoomba Group* and its *Ecosystem Marketplace*[18]. Thirdly, and maybe most importantly, many ecosystem services are of global importance and may need globally orchestrated activities to ensure their sustainable provision – at least in the long run. The Clean Development Mechanism of the Kyoto Protocol, which deals with carbon sequestration services, can perhaps serve as a reference for efforts in the fields of biodiversity and other services.

In general, international efforts should aim at creating synergies and increasing impact while taking local needs into account[19].

6. PES AND THE POOR

Uganda, like many developing countries has an overarching goal of reducing poverty. Therefore, PES needs to be seen within that context. It has been argued that by the very nature of the system, participation in PES schemes is purely voluntary, and therefore nobody should be worse off than they were without PES[20]. Furthermore,

[18] www.katoombagroup.org and www.ecosystemmarketplace.com
[19] This has been mentioned for example in ten Kate, K., Bishop, J. & Bayon, R. (2004), op. cit.
[20] Pagiola, S, Arcenas, A. & Platais, G. (2005) *Can Payments for Environmental Services Help Reduce Poverty? An Exploration of the Issues and the Evidence to Date from Latin America*, World Development, Vol. 33, No. 2., 2005.

payment platforms constitute a new source of income and increase welfare, particularly because PES schemes can help transfer money from urban to rural areas[21].

Also, land use change may help alleviate pressures on local ecosystems and may also reduce 'tragedy of the commons' effects. For instance, PES schemes may give poor communities the incentive to manage their formerly heavily overgrazed common land more sustainably. While they get compensation for reducing soil degradation under the PES scheme, they also benefit from an increased profit per grazing animal. Thus, overcoming "tragedy of the commons" effects can potentially increase income even for non-participants. Some further positive externalities of PES, such as the creation of social capital have also been recently suggested[22].

There are, however, some concerns regarding the effects of PES systems on the poor. People can only benefit from new markets if they have access to them, which is the often the case, especially for the poor and uneducated[23] in Uganda and other countries. Also, companies may try to reap the benefit of payments under PES schemes, which can be particularly problematic if land users do not own clear property rights for their land as is the case in Uganda. Another concern is that successful PES systems may result in reduced access to forest lands for local communities who may depend on gathering non-timber products from forests[24].

There is a lot of criticism towards assigning a monetary value to nature due to the fear that the privatization of natural assets may have detrimental effects on both nature and the poor[25]. Further work on PES schemes and their effects on the poor, on how to make PES schemes more pro-poor, and on how to generally incorporate the MDGs into PES activities are important goals that should not be overlooked and may even be helpful for raising political support. In Uganda, there are efforts geared towards involving the Ministry of Finance in policy actions related to economic instruments for environmental management and environmental fiscal reform in order to gain their support

CONCLUSION

Scaling up PES in Uganda will meet many challenges, prominent among them is the need to ensure secure tenure and property rights, high transaction costs, creating the need for intermediaries that can bring together local sellers collectively to deal with international investors and a need to instill transparent regulatory systems and good governance systems and also building institutional capability at National and local levels.

[21] Gutman, P. (2006), op. cit.
[22] Pagiola, S, Arcenas, A. & Platais, G. (2005), op. cit.
[23] Landell-Mills, N. & I T Porras, I.T. (2002), op. cit.
[24] Pagiola, S, Arcenas, A. & Platais, G. (2005), op. cit.
[25] GRAIN (2005) *No, air, don't sell yourself …*, Seedling, April 2005. http://www.grain.org/seedling/?id=332

There is some way to go to convince the government's Ministry of Finance that PES is indeed a positive mechanism for enhancing community participation in livelihoods enhancement while safeguarding (conserving) integrity of the environment.

Awareness rising is the major starting position. Small new mechanisms should be up scaled, which will provide an indication to government of the potential inherent in PES schemes. In addition, there is need for work to discover where the opportunities for PES lie and at what scale they exist. Indeed, the successful scenario to offer to government is when the incomes of a significant proportion of the country's population can be enhanced through imitative that empower the communities, generate revenue for communities and government and the pressure that government feels whenever conservation is brought forward as a priority in national planning.

Finally, it is worth noting that even though the CDM Board and other international bodies have put sustainable development and equity on agenda, carbon projects essentially represent an emerging market and not a grant-in-aid scheme

ANNEX 1 - ON-GOING CDM PROJECTS IN UGANDA								
Project name & Address	***Fund Invested***	***Emission reduction targets (Carbon offsets) t CO_2e***	***Start Year***	***Registered & Year of Registration***		***Project Description***	***Status***	***Started Trading in ERS***
				DNA	***UNFCC***			
MT ELGON HYDRO POWER CO. LTD P.O Box 26426 K'la Email:mtelgonlydropower@yahoo.co	US$ 14.5 million	69,062 t Co_2e p.a for 30 years	2001	YES 2004	NO	Mini hydro power generation on falls of Mt. Elgon five sites Project Incorporated by 11 share holders	PDD drafted	No
Bakojja New Wood County P.O. box 4795 K'la Located in Kasambya – Kitanga Mubende	US $ 4 million	104000 tCo_2e in 25 Years & 206500 (tco2e) in 50 Years	2003	No but submitted documents	No	Tree planting for commercial & Conservation purposes	PIN developed	
Kakira Sugar Works (1985) Ltd. Kakira Co generation Project Butembe County, Kakira Village P.O. Box 121 Jinja	US $ 51 million	60,000 ton co2e per year & 900,000 turns of co2e for 15 year	2002	Submitted document in 2005 awaiting certification	NO	Cogeneration plant to generate electricity for its own use and sale to national grid using baggase as the principal fuel	PIN developed	No
Trees for global benefits (TGB) by ECOTRUST	1,000,000 Euros	900,000 tons over ten years	2003	NO	NO	Planting indigenous Trees by small land holder farmers for Carbon sequestration, poverty reduction & environmental conservation benefits.	PIN developed	Yes
Kampala, Jelton Suppliers Ltd P.O. box 30430 K'la	US$ 109, 054	52,453 ton co2eq for a	2000	Submitted documents	NO	Production & Marketing Bio mass	PIN developed	No

ANNEX 1 - ON-GOING CDM PROJECTS IN UGANDA								
Project name & Address	***Fund Invested***	***Emission reduction targets (Carbon offsets) t CO_2e***	***Start Year***	***Registered & Year of Registration*** ***DNA***	***UNFCC***	***Project Description***	***Status***	***Started Trading in ERS***
		period of 14 years		awaiting certificate		fuel briquettes from agricultural wastes & residues		
The International Small Group and Tree Planting Programme(TIST)	US$ 1.2 million By WB Carbon fund., USAID, & Dow chemicals	2.3mtCO2e By 20017	SINCE 1999	-	-	Tree planting,Carbon credits to CAAC, and TPs and NTFPs to comunity	PDD developed	Yes
Forest Rehabilitation in mt.Elgon & Kibale National Parks.invested by FACE foundation & implemented by UWA	-	7.1mtCO2e over 99years	Since 1994	-	-	Tree planting. Carbon credits owned by FACE and TPs,NTFPs by community	PDD developed	Yes
Nile Basin Reforestation implemented by NFA and invested by WB carbon fund	-	0.25mtCO2e by 2017	2006	-	-	Planting of pine & mixed native species.Timber benefits share with locals . carbon credits for the WB	PDDdeveloped	-
Energy Systems Limited,ESL,Kampala	US$2,800,00	320,000 in 20 years	-	No	No	Solar PV based Rural Electrification in Uganda to abate/reduce accumulation of carbon dioxide in the atmosphere	PIN developed	No

ANNEX 1 - ON-GOING CDM PROJECTS IN UGANDA								
Project name & Address	***Fund Invested***	***Emission reduction targets (Carbon offsets) t CO_2e***	***Start Year***	***Registered & Year of Registration***		***Project Description***	***Status***	***Started Trading in ERS***
				DNA	***UNFCC***			
East African Energy Technology Development Network(EAETDN-U)	US$1,153,227	6500 in 20 years	-	No	No	Micro Hydro Power For Rural Electrification	PIN developed	No
NutrixMix Feeds Ltd	-	-	-	No	No	Uganda Cattle Methane Reduction project	PIN developed	No
Global Woods AG	US$78M	2,703,375 in 14 years	-	No	No	Timber plantation in Kikonda Forest Reserve	PIN developed	No
City Council of Kampala(KCC	US$1,890,000	690,270 in 14 years	-	No	No	Kampala Landfill to Energy Project Landfill located about 10Km outside of Kampala	PIN developed	No
Hydromax Hydro Project	US$25M	575,000 in 14 years	-	No	No	Hydro power generation on Wambaya River in Hoima	PIN developed	No
Liberty Development Trust (est1995)	US$3,000,000	44,000 In 25 years	-	No	No	Planting of Fruit Forest	PIN developed	No

ANNEX 1 - ON-GOING CDM PROJECTS IN UGANDA								
Project name & Address	***Fund Invested***	***Emission reduction targets (Carbon offsets) t CO_2e***	***Start Year***	***Registered & Year of Registration***		***Project Description***	***Status***	***Started Trading in ERS***
				DNA	***UNFCC***			
Nanga Farms Ltd	US$3.5M Equity ;US$1.0M	120,564 in 50 years	-	No	No	Planting of trees in luwero	PIN developed	No

Adopted from Jenkins, M., Scherr, S.J. & Inbar, M. (2004) Markets for Biodiversity Services – Potential Roles and Challenges, Environment, Vol. 46, No. 6, 2004

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