

**Promoting Investments in Ecosystem Services: the Case of the Peruvian Amazon**

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MBA and Master of Environmental Management (EEP)

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May, 2010

Masters project submitted in partial fulfillment of the  
requirements for the Master of Environmental Management degree in

the Nicholas School of the Environment of

Duke University

2010

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## **Acknowledgements**

I am grateful to my advisor, Dr. James Salzman, for his continued guidance, challenging questions, incisive feedback and impressive ability to help me put things into perspective throughout the project and to Dr. Charlotte Clark for helping me understand the processes and theories behind qualitative analysis tools.

I also would like to express my gratitude to Cesar Ipenza and Fernando Leon at the Ministry of Environment in Peru, who provided me with the initial ideas and continuous support for developing this investigation, as well as to all of the people who agreed to be interviewed for this study – the work that each of you are doing for the conservation of Peru’s amazing natural heritage is invaluable and truly inspiring.

I also want to thank all my friends and colleagues who helped shape the Environmental Markets Student Group at Duke, which provided invaluable opportunities to learn about the exciting world of Markets for Ecosystem Services, especially to Wyley Hodgson who cofounded the group with me and to Dr. Randall Kramer who bravely accepted to become our founding Faculty Advisor.

To my parents, Victor and Freda, who have always supported my endeavors and adventures and Andres, my brother, who has always stood by my side: thank you for your continued support, guidance and encouragement.

To all of my friends at the Nicholas School of the Environment and the Fuqua School of Business whose continued support, advice and good sense of humor have helped me throughout the development of this project.

## Abstract

### **Promoting Investments in Ecosystem Services: the Case of the Peruvian Amazon**

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Natural capital and the Ecosystem Services (ES) that flow from it are essential to civilization as they provide both the conditions and the processes that sustain human life. Peru possesses the third largest tropical forest cover in the world and is undoubtedly one of the planet's mega-diverse countries. This document focuses on exploring the viability of markets for ES as a tool for funding conservation in the Peruvian Amazon given the current highly charged climate surrounding natural resource management policies that the government must deal with. Qualitative research methods were used to analyze interviews conducted with high level government officials, NGO directors and bilateral agency program managers in Peru to gain insights into the gaps in existing natural resource management policies that create risks for developing markets for ES. Issues such as institutional capacity, multi-stakeholder decision making, land-use planning, definition and enforcement of property rights, consultation and free, prior and informed consent from local communities for major investment projects as well as the strictness and enforcement of regulations around Environmental Impact Assessments stand out as key shortcomings in Peru's natural resources management policies that create risks for the development of ES markets. Most of the key issues identified in this investigation are not specific to ES markets; rather they are general issues that must be considered for good practices in natural resource management. As such, creating ecosystem service markets will do little if anything to improve the long-term sustainability of Peru's natural capital and the ecosystem services that flow from it if these issues are not addressed as part of an integrated natural resource management strategy.

Approved

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Dr. James Salzman

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Date

Master's Project submitted in partial fulfillment of the requirements for the Master of Environmental Management degree in the Nicholas School of the Environment, Duke University May 2010

*“As scientific understanding of ecological services improves, new financial opportunities emerge.”*

*– The Economist, April 23, 2005*

**Research Question:** What are the gaps and barriers in Peru’s public policies that need to be addressed in order to promote investments in Ecosystem Services (ES)?

## **Introduction**

June 5, 2009 was the date of one of the most tragic events in the recent history of social-environmental conflicts in Peru. A protest that had been escalating for nearly 58 days close to the city of Bagua, in the northern Amazon region, erupted into a violent confrontation between indigenous protesters and the police causing the death of 33 people, including civilians and armed forces – all Peruvian.<sup>1</sup> According to an official report by the Defensoría del Pueblo [Office of the Defender of the People], Peru’s national human rights ombudsman, the causes of the Bagua conflict can be traced to public policies related to natural resource management, land tenure and the promotion of investments in the Amazon region that go back to 2006 with the promotion of the “Law of the Jungle.”<sup>2</sup>

Over the past decade the Amazon region of Peru has been the target of a new cycle of very ambitious but poorly planned public and private investment projects aimed at exploiting its abundant natural resources.<sup>3</sup> The imminent rush for development of the region can be evidenced by the following trend: in 2003 around 15% of the territory in the Amazon region was designated as lots for exploration and exploitation of hydrocarbons; in 2009 this number rose to 70%, or about 55 million hectares of rainforest.<sup>4</sup> A plethora of other significant investment projects are planned in terms of highways, railroads, hydroelectric power plants and other infrastructure projects under the Initiative for the Integration of the Regional Infrastructure of South America (IIRSA), an initiative to create a continental economy, forging ties between all the South

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<sup>1</sup> Defensoria del Pueblo, 2010, p. 3-6

<sup>2</sup> Defensoria del Pueblo, p. 5

<sup>3</sup> Dourojeanni et al., 2009, p.19

<sup>4</sup> Dourojeanni et al., 2009, p. 43

American countries. The aggregate direct and indirect environmental impacts of these projects will be difficult to measure and nearly impossible to mitigate unless they can be properly evaluated.<sup>5</sup>

Moreover, the increasing presence and power of both the Banco Nacional de Desarrollo Económico y Social (BNDES) of Brazil and the Corporación Andina de Fomento (CAF), in addition to foreign direct investment from countries such as China, Malaysia, India and Korea has substantially increased the supply of capital for large-scale projects with standards for technical, social and environmental integrity that are substantially lower than those of the World Bank (WB) and the Inter-American Development Bank (IADB).<sup>6</sup>

It is clear that these decisions are being made hastily and without adequate consideration for one of the most valuable assets that Peru owns: natural capital. Natural capital and the ecosystem services (ES) that flow from it are essential to civilization.<sup>7</sup> They provide both the conditions and the processes that sustain human life.<sup>8</sup> The academic literature cites a robust list of reasons why natural capital and ecosystem services are not taken into account in decision making. Robert Costanza sums it up in the following statement:

We humans have to make choices and tradeoffs concerning ecosystem services, this implies and requires ‘valuation’, because any choice between competing alternatives implies that the one chosen was more highly ‘valued’... Most environmental decisions involve the problem of having to weigh and aggregate the myriad different kinds of ‘benefits’ of a proposed action against its ‘costs’. In most cases, these benefits and costs are both poorly understood and poorly quantified. In addition, the future vision and social goals that define the degree to which something is a benefit or a cost are themselves evolving and changing.<sup>9</sup>

When the time comes for the Peruvian government to make decisions whereby tradeoffs between the conservation of natural capital needs to be sacrificed for the development of built capital in the form of large-scale investment projects, the benefits are often in favor of built capital investments while the full costs of undertaking these types of projects are largely misunderstood and mostly ignored.

Furthermore, considerations for more basic issues such as property rights are by and large also ignored. This can be evidenced by the superposition of concessions for exploration and exploitation of natural resources on

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<sup>5</sup> Killeen, 2007, p. 74-77

<sup>6</sup> Dourojeanni et al., 2009, p. 22-38; Killeen 2007, p. 74-75

<sup>7</sup> Daily et al., 1997

<sup>8</sup> Salzman, 2006, p.133

<sup>9</sup> Costanza, 2003, p. 19

top of land that has been designated and titled for other purposes, including National Parks, Indigenous Reserves and Reserves for Indigenous Peoples Living in Voluntary Isolation. Definition of property rights are inevitably a large part of the problem, as are other issues in Peru's public policies related to natural resources management, which are further explored in the following pages. In this context, one cannot help but ask if it is possible to attract a different type of investment to the region, one based on protecting and investing in natural capital to benefit from the ecosystem services it provides. It is important to remember that the choice between natural capital and built capital need not be mutually exclusive; on the contrary, it should be complementary. Investments in natural capital are absolutely necessary as a way to counter-balance the impacts from investments made in the development and exploitation of natural resources and can be a useful tool for avoiding social-environmental conflicts, like that of June 5<sup>th</sup>, 2009.

This said, it is important to note that the government plays a central role in virtually every robust ecosystem service market functioning around the globe.<sup>10</sup> Therefore we must ask the question, how ready is Peru's government structure to play the central role required to manage ecosystem service markets? What changes must be made? Can a concept like that of markets for ecosystem services be made applicable as a tool for conservation finance in the context of local policy conditions?

The goal of this document is to identify the gaps and barriers that exist in current policies in order to successfully implement a market for ecosystem services as defined in the academic literature in order to help decision makers in the Peruvian government, civil society and private sector to look more broadly at the opportunities provided by markets for ecosystem services. Opportunities in creating these markets must be identified in the context not only of potential economic benefits, but, more importantly, of incorporating such imperative issues as long-term ecological sustainability and social justice. This paper is organized in two parts: Part I provides background information on the concept of Ecosystem Services as well as a glimpse into the economic potential of the Peruvian Amazon's ecosystem services. Part II is focused on a discussion about the gaps in Peru's current natural resource management policies that present risks to investors in ES.

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<sup>10</sup> Salzman, 2006, p. 141

## Part I: Background Information

In recent years State promoted instruments for the creation of payment for ecosystem service (PES) schemes have begun to gain momentum around the world and particularly in Latin America. Countries like Costa Rica,<sup>11</sup> Mexico, Ecuador, Paraguay and Brazil have started to organize and implement PES schemes through national or regional legislation.<sup>12</sup> Although the scale has been limited, due to localized schemes that are specifically developed in particular watersheds or pilot projects for forest carbon, there exists a great potential to scale up to national and international schemes. Why has Peru experienced such a limited activity of PES schemes? What needs to occur in order to change this situation? This section will begin with an overview of the concept of ecosystem services, their importance, and an approach toward understanding their role in the economy. The second part of this section provides background information on Peru, its natural resources and the importance of its natural capital and the ecosystem services it provides for the health of our planet.

### Ecosystem Services

#### *What are Ecosystem Services?*

Until now, there is no single, formal, agreed-upon definition for ecosystem services in the academic literature. Despite the growing popularity of the term, ecology and economics have failed to standardize the definition and measurement of ecosystem services.<sup>13</sup> As identified by Fisher,<sup>14</sup> the three most common definitions for ES in the literature are:

- The conditions and processes through which natural ecosystems and the species that make them up sustain and fulfill human life (Daily, 1997).
- The direct and indirect benefits that human populations receive from ecosystem functions (Costanza et al., 1997).
- The benefits that people receive from ecosystems (Millenium Ecosystem Assessment, 2005).

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<sup>11</sup> Please refer to Appendix B for further information on Costa Rica's PSA program.

<sup>12</sup> McKenney, 2005; Mayrand and Paquin, 2004; Quintero and Estrada, 2006; Darbi et al., 2009

<sup>13</sup> Boyd and Banzhaf, 2007, p. 616

<sup>14</sup> Fisher et al., 2009, p. 645

Due to the lack of a formal definition, many practitioners in the field look to Sven Wunder's work on ecosystem services which uses five simple criteria to describe the PES principle:<sup>15</sup>

- 1- A voluntary transaction in which
- 2- A well-defined environmental services (ES) or a land use likely to secure that service
- 3- Is being "bought" by at least one ES buyer
- 4- From at least one ES provider
- 5- If, and only if, the ES provider secures ES provision, i.e. conditionality.

Ecosystem services include, but are not limited to: provision of clean air and water; maintenance of soil fertility and structure; maintenance of livable climates; pollination of crops and other vegetation; control of the vast majority of potential pests, diseases and weeds; provision of genetic resources; production of goods like food and fiber; and provision of cultural, spiritual and intellectual values.<sup>16</sup>

#### *Why are ecosystems declining?*

There are many immediate causes for the degradation of ecosystems, but underlying the diversity of causes is the fact that humans give a relatively low value to ecosystems compared to the value given to activities that potentially degrade them. The literature cites several reasons for this trend:

- Lack of information about the benefits that come from ecosystems and the potential to lose them under different management regimes (Daily, 1997).
- Many of the components of ecosystems are publicly rather than privately owned, meaning that private markets that might give price signals when resources decline do not emerge and that decline of ecosystems due to other economic activity is not factored into the costs in those markets (Heal, 2000).
- The economic systems used in most countries emphasize values and preferences of individuals (consumer sovereignty) more than the values of communities (Costanza and Folke, 1997).

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<sup>15</sup> Wunder, 2005

<sup>16</sup> Daily et al., 1997

- Many ecosystem services are not approaching critical rarity, so marginal losses are not given high importance (Cork et al., 2001).
- Many changes in ecosystems have long lead times, meaning that symptoms of decline are not apparent until years or decades after critical thresholds are passed (Cork et al., 2001).
- There are few mechanisms or incentives for investment in ecosystem services (Heal, 2000).

Most of these trends can be addressed through better documentation of what the benefits of ecosystems are to people, what impacts human activities are having and what the costs and benefits of technological substitution are.<sup>17</sup>

### *Understanding Ecosystem Services*

In order to fully understand the concept of ecosystem services we must focus our attention on the receivers of those services. Thus, Cork et al. argue that ecosystem services need to be identified and discussed in terms related to people's perceptions and needs for services from the environment rather than in terms of scientific or economic theory.<sup>18</sup> They propose a conceptual framework (see Figure 1) in which ecosystem services contribute to the economic and social wellbeing of people in two ways:

1. Through the use of natural assets to provide *inputs to production*.
2. By *maintaining natural assets* through regenerating the assets and through the assimilation of by-products arising from production processes or from consumption of goods.

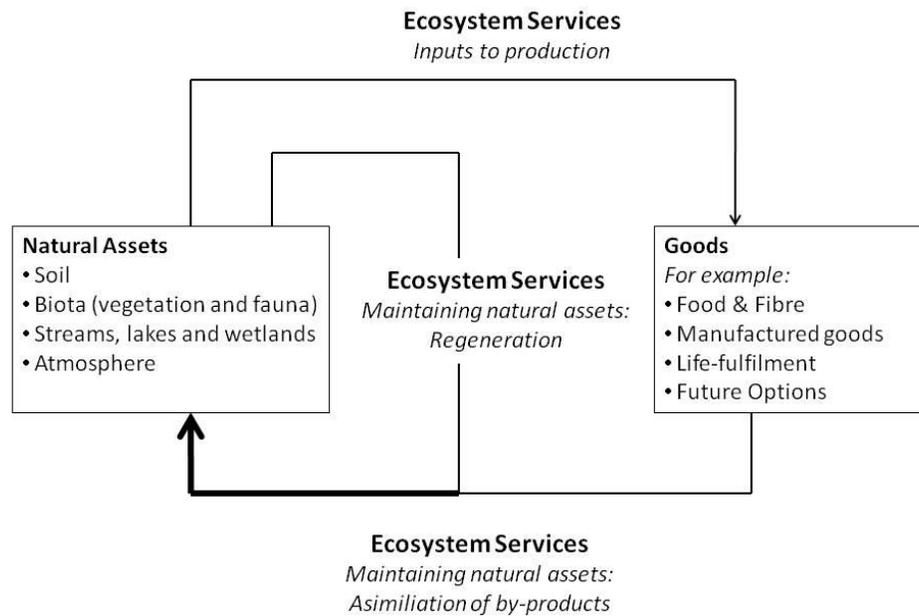
In essence, the relationship between natural capital and ecosystem services can be thought of as “a capital fund capable of yielding flows of ecosystem services ... the term “fund” underscores the concept of ecosystems as a form of natural capital that yields a flow of ecosystem services per unit of time, similar to the way in which a fund of financial capital yields a flow of income or interest.”<sup>19</sup>

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<sup>17</sup> Cork et al., 2001, p.157-162

<sup>18</sup> Idem, p. 159

<sup>19</sup> Lant et al., 2008, p.969.



**Figure 1.**

Conceptual framework defining ecosystem services in terms of three types of transformations: (1) Transformations of natural assets into products valued economically and in other ways by people in a catchment; (2) transformations of the by-products of Type 1 ecosystem services back into natural assets; (3) internal transformations among natural assets to maintain those assets.<sup>20</sup>

## Peru

### *The Policy Opportunity*

Peru is one of the world’s mega-diverse countries. It possesses the third largest tropical forest cover in the world, second largest forest cover in South America and ninth largest on Earth.<sup>21</sup> The country has over 40 million hectares of forest under diverse management mechanisms<sup>22</sup> including national parks, native community reserves, and forestry and ecotourism concessions. There are over 7,388 million hectares of deforested lands and deforestation rates are close to 150,000 hectares per year and increasing.<sup>23</sup> While recognizing the important benefits deforestation has for society by increasing economic opportunities, the loss of rainforests also degrades many critical ecosystem services, such as carbon storage in forests and soils,

<sup>20</sup> Idem, p. 160

<sup>21</sup> FAO - Food and Agriculture Organization, 2005

<sup>22</sup> Dictamen Proyectos de Ley No. 2386/2007-CR y 3213/2008-PE, 2009

<sup>23</sup> Dictamen Proyectos de Ley No. 2386/2007-CR y 3213/2008-PE, 2009

regulation of water balance and river flow, modulation of atmospheric circulation and regional climate, and the amelioration of infectious diseases. Thus, the deforestation tradeoff is a balance between realizing short-term gains in selected ecosystem goods, while potentially degrading ecological function and other ecosystem services in the long term.<sup>24</sup>

Peru has seen a recent movement toward legislating environmental protection, mostly as a response to obligations under the Free Trade Agreement (FTA) signed in April 2006 with the United States, which entered into force on February 1, 2009. Chapter 18 of this agreement includes a paragraph in which both parties agree to encourage the development of “incentives, including market-based incentives where appropriate, to encourage conservation, restoration, sustainable use, and protection of natural resources and the environment, such as public recognition of facilities or enterprises that are superior environmental performers, or programs for exchanging permits or other instruments to help achieve environmental goals.”<sup>25</sup> Since then, Peru has made significant advances toward legislating the environment, including establishing a Ministry of the Environment, which was officially created according to legislative decree 1013 on May 14, 2008 as an organism whose general function is to design, establish, execute and supervise national and sectorial environmental policies.<sup>26</sup>

### *The Amazon Basin*

The Amazon basin contains some of Earth’s greatest collections of biological diversity, including a rich array of plant, animal and microbial life forms, which are vital to the functioning of the biosphere.<sup>27</sup> The rainforests of the Amazon also provide crucial ecosystem goods and services to humanity, many of which have considerable economic and societal value.<sup>28</sup> At the moment, there is no mechanism or market that converts the Amazon’s ecosystem services into the financial resources needed to pay for its conservation or to subsidize the sustainable management of its natural resources. The largest economic asset – not yet exploited

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<sup>24</sup> Foley et al., 2007

<sup>25</sup> US-Peru Trade Promotion Agreement, 2006

<sup>26</sup> Government of Peru, D.L. 1013, 2008

<sup>27</sup> Foley et al., 2007, pp. 25-32.

<sup>28</sup> Myers, 1997

– in the Amazon are its vast carbon reserves.<sup>29</sup> Harper et al. estimate the value of Peru's emissions from deforestation at close to US\$360 million per year based on a conservative annual deforestation rate of 78,000 hectares per year at 125 tons of carbon emitted per hectare and a US\$10 price per ton of CO<sub>2</sub>.<sup>30</sup>

Killeen argues that beyond this theoretic calculation, the potential exists to generate income by using more realistic models based on the United Nations Framework Convention on Climate Change (UNFCCC). For example, he states that if the Amazonian countries could agree to reduce their deforestation rates by 5% per year for 30 years, this could qualify as a reduction in emissions of greenhouse gases and generate around US\$ 650 million per year for the duration of the commitment, based on a REDD mechanism that considers an annual deforestation rate of 2,824,000 hectares per year for the entire Amazon region, at 125 tons of carbon emitted per hectare and a US\$10 price per ton of CO<sub>2</sub>. Distributed equally between the approximately 1000 municipalities in the different countries that make up the Amazon basin, this would be equivalent to close to \$650,000 per year per community.<sup>31</sup>

### *Looking Ahead*

*As previously* mentioned, elsewhere in the world and particularly in Latin America, government-led PES schemes have been relatively successful. The essential requirements of such schemes are that investors are given some type of limited rights over ecosystem goods and services so that they can trade them, and that demand either exists due to scarcity or is created by regulations defining acceptable levels of ecosystem goods and services.<sup>32</sup> Potential benefits of market-based approaches include improved resource conservation, more sustainable sources of conservation finance, greater environmental justice in the distribution of conservation benefits and costs, and new and sustainable sources of income for poor people in developing countries.<sup>33</sup> They have an enormous potential to prevent social-environmental conflicts that arise from deterioration of Ecosystem Services caused by large scale public or private investments in infrastructure.

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<sup>29</sup> Killeen, 2007, p.9

<sup>30</sup> Harper et al., 2007

<sup>31</sup> Killeen, 2007, p.81

<sup>32</sup> Salzman, 1997, pp. 887-903; Heal, 2000, both in Cork et al. p.161.

<sup>33</sup> Swallow, 2008

### *Ecosystems Services legislation in Peru*

Efforts to enact a law of ecosystem services have been underway since 2003, yet in 2007 a Law of Provision and Compensation of Ecosystem Services bill made its way into the Commission of Andean, Amazon and Afro-Peruvian Peoples, Environment and Ecology in Congress. After several months of debates and modifications, it was finally approved by the Commission on July 1<sup>st</sup>, 2009 by unanimous vote.

With enormous interest in the potential for a global forest carbon market based on Reduced Emissions from Deforestation and Degradation (REDD), as well as local markets for water provision and quality, scenic beauty/ecotourism and conservation of biodiversity on the government's agenda, the proposed law seems like a step in the right direction. It is a timely effort on the part of the government to provide a legal framework to promote investments and economic incentives for conservation, however there is much skepticism from the NGO community about the applicability and enforcement of such a law. As this legislation makes its way through Congress to be debated and voted upon in a plenary session sometime before the end of 2010, other issues related to creating a positive climate for investment in ecosystem services must be brought to the attention of the public debate.

Whether a viable ecosystem services market emerges in Peru depends on the approach that the government takes in addressing some of the more fundamental natural resource management policy issues that are the current causes of many social-environmental conflicts. As identified by Binning and Young (1997) "associated issues [related to ecosystem service markets] include definitions of property rights, debate about what duty of care can be expected of current land owners, and the need for robust methods for measuring delivery of ecosystem services in trading."<sup>34</sup> Issues such as property rights, governance and enforcement as well as the strengthening of institutional and organizational capacities are a major concern to stakeholders, many of which argue that it will take more than passing ecosystem services legislation to attract investments in ecosystem services and promote the use of PES schemes as tools for conservation finance.

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<sup>34</sup> Binning and Young, 1997

## Part II – Gap Analysis of Peru’s Natural Resource Management Policies

### Research Objective

The primary research conducted during this investigation was focused on uncovering key gaps and barriers that exist in the current public policies of Peru that create risks for the development of markets for ecosystem services. By a) identifying the issues and b) reviewing the academic literature on ecosystem services I aim to assess the importance of the issues identified and propose a strategic roadmap for addressing them. In doing so, I hope to contribute to the public debate that needs to take place in order for Peru to develop an integrated strategy to promote investments in natural capital and the ecosystem services that flow from it.

### Methods

This study was conducted utilizing qualitative evaluation methods, defined as “the systematic acquisition and assessment of information to provide useful feedback about some object.”<sup>35</sup> The interview process was executed using a strategy often referred to as the “snowball sampling technique”<sup>36</sup> in which individuals are interviewed based on recommendations from the original interviewees. The process began with a high level official in the Ministry of Environment (MINAM) who mentioned key people in NGOs working on Ecosystem Services projects. Each one of these contacts led to further contacts and so on until a total of 19 interviews were conducted. A variety of people with varying perspectives were interviewed over an 8-week period. The interviewees consisted of 4 government officials, 1 ecotourism entrepreneur, 12 NGO directors and program managers, 1 bilateral agency program manager and 1 executive from a public-private conservation fund.

Respondents were coded to ensure confidentiality, with the first two letters of the code indicating the type of organizational affiliation/category (i.e.: GO= government, NG=Non Governmental Organization, BA=bilateral agency, etc) and the numbers corresponding to the sequence of the interview within each

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<sup>35</sup> Trochim, 2006

<sup>36</sup> Babbie, 1989

affiliation category. The interviews were held throughout June and July of 2009 and typically ranged from 45 minutes to 1½ hours. The interview process served as the primary data collection vehicle. Interviewees were asked probing questions and the interviewer was thus able to gather descriptive information related to their professional opinions on a range of specific subjects related to ecosystem services and relevant public policy issues such as environmental management regulations and governance issues, property rights, et cetera. The interviews were semi-structured<sup>37</sup> with each interview beginning with a brief explanation of the reason for the meeting. Of the 19 interviews, only 7 of them were able to be recorded and transcribed verbatim with verbal consent by the interviewees. The remaining interviews were recorded utilizing detailed field notes. In addition to the interviews, some respondents provided references to additional documents that were subsequently reviewed for inclusion in the analysis.

In the process of designing the interview guide, references were drawn from the academic literature in order to identify and probe specific issues of interest, thus there is a potential bias to only probe the interviewees on those topics which were initially researched and identified from the academic literature. This issue was addressed by asking some open-ended questions at the conclusion of the interview which allowed the interviewee to express concerns or issues that were not covered in the semi-structured part of the interview.

The first stage of the analysis of the data included studying the transcripts and detailed field notes of the interviews to determine trends in the data. Each idea was “tagged” manually and placed into broader categories. Colored highlighters were used to differentiate respondent themes so that the data would remain in context and provide visual indications of the different categories of observations. The themes were then grouped by category and further analyzed, thus “distilling” the data into relevant issues.

Glauser and Strauss (1967) call this process the Constant Comparison Method which is conducted as follows:

While coding an incident for a category, compare it with the previous incidents in the same and different groups coded in the same category. This constant comparison of the incidents very soon starts to generate theoretical properties of the category. The analyst starts thinking in terms of the full range of types or continua of the category, its dimensions, the conditions

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<sup>37</sup> Please refer to Appendix A for the interview guide.

under which it is pronounced or minimized, its major consequences, its relation to other categories, and its other properties.<sup>38</sup>

As the data analysis progressed, broad categories emerged based on themes identified in the interviews and literature review which were further distilled into specific categories which became the material for further research and assessment.

## **Discussion**

Based on the level of expertise of the people that were interviewed, the strong evidence that they gave and the corroborations found in the academic literature, the following issues stand out as the most crucial for the government to address if it is to create viable markets for ecosystem services through legislation. One particular interviewee, a lawyer at a respected NGO, summed it up quite clearly:

We should focus on everything that needs to be implemented in order to take advantage of Ecosystem Services as productive inputs. For example, all the issues around land use planning and registration, inventory of natural resources. All the logic of having an inventory, the rights and properties surrounding these areas as well as the potential they have in terms of positive and negative outcomes according to different management schemes. All this is 'in diapers' in Peru, and this can be confirmed from a recent meeting I attended about the Millennium Development Goals, where we were working with data at best from 1995. [NG4, 7/20/09]

It is important to note that markets for Ecosystem Services must be used as part of an integrated strategy for conservation of natural resources that includes minimizing the damage from industrial operations and large investment projects. It must be seen as one of many tools in the toolbox and not as an end-all solution to financing conservation projects. At a high level, there are several norms and policies that need to function, both as stand-alone policies and in conjunction with each other before a market can function. According to the same environmental lawyer, "these include the norms regulating environmental impact studies, the national forestry law, and the protected areas law, for example. The types of public policies we have in this country need to be straightened out before we can even think about having a functioning market for ecosystem services." [NG11, 7/9/09]

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<sup>38</sup> Glauser and Strauss, 1967, p. 106

In this section, a discussion is formed around the most salient issues that emerged from the interviews. This discussion is not meant to be an in-depth discussion of the problems, as there are many layers to the issues that can be addressed at different levels. Here we are trying to zero in on opportunities for the strategic shifts rather than the tactical modifications needed in current natural resource management policies to reduce country-specific risks related to legal policy for investors in ecosystem services. The aim of this approach is to propose a foundation from which to develop strategies that will better enable stakeholders to identify and work through the tactical obstacles.

### Governance and Enforcement

Sven Wunder, often seen as one of the gurus of PES scheme design and implementation, states that “a scheme with deficient enforcement could easily lead to more environmental damage, for example, if the environmental service buyer causes more deforestation but the environmental service seller does not make the corresponding reduction as required. Many PES tools need to create their own institutional governance framework, such as negotiation, monitoring, and enforcement mechanisms, which may often be challenging and costly, if not outright impossible.”<sup>39</sup>

#### *Strengthen the institutions – “give them teeth”*

Because the Ministry of Environment (MINAM) is proposing a law of Ecosystem Services with the Organismo de Evaluacion y Fiscalizacion Ambiental (OEFA) as one of the regulators of ES and the Organismo Supervisor de Recursos Forestales y Fauna Silvestre (OSINFOR), as the other regulator in charge of ES that flow exclusively from the nation’s forestlands, it is appropriate to begin with an analysis of these institutions. The fact that MINAM and OEFA are relatively new was seen by interviewees as both an opportunity and a threat. The opportunity lies in the fact that because it is a new institution, many of the professionals that were interviewed felt that MINAM can move with more agility to create norms that function properly in regulating the environment. MINAM does not have the path dependency of say the Ministry of Agriculture (MINAG) which has “a certain culture and habits, customs and practices that have

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<sup>39</sup> Wunder, 2006 p. 23

been ongoing for several decades that are difficult to break loose from” [NG9, 7/13/09] Most interviewees (12 out of 18) agreed that it is too early to tell whether the Ministry is doing a good job or not, but in general there is trust in the leadership of the current Minister, Antonio Brack, and the expertise of MINAM’s officials. Expectations for this new era of environmental management are high.

These expectations however, can also be seen as a threat, since, generally speaking, citizens have a negative perception of the Peruvian Government. There is very little trust in the Government because it has failed the people so many times in the past. As a sociologist representing a social studies think-tank stated, “there is a general perception that the Government does not work. More concretely, in the investigation that we are currently undertaking about social movements, one of the themes that we are looking into with the people we interview is their relationship with the State. It is surprising how frequently and almost without exception we hear affirmations about how the government does not work, does not implement the norms or regulations with consistency, does not meet its obligations and fulfill its promises.” [NG9, 7/13/09]

The issue of trust is a threat to the credibility of MINAM and its future actions. More specifically, the threat is related to MINAM’s enforcement arm, OEFA, which is an autonomous institution housed under the Presidency of the Council of Ministers (PCM). A surprisingly high number of the interviewees mentioned that they had never heard of OEFA, which had been created with the same law enacting the creation of MINAM. Those few who had heard of OEFA said they had never interacted with its officials. These are people who work on the front lines of conservation and environmental affairs at the highest institutional levels.

One particular environmental lawyer expressed his views on this new organization stating that trust would not be so much of an issue “if OEFA had been born strong, with good leadership from someone who was not afraid to stand up to the polluters, putting a stop or declaring a battle against obvious problems such as La Oroya, the problems of illegal mining and logging, etc. Now, a year after its inception, we have this organization that few people know about and that has very little actions on its record. That is when people

lose trust.” [NG4, 7/20/09] Not only is the issue of trust and credibility a threat, but it could very soon turn into a liability if these same attitudes and perceptions continue into the future.

On the other hand, most of the people interviewed had heard of OSINFOR, which is a department under the Ministry of Agriculture (MINAG) that is in charge of regulating forestry concessions. Most however, did not believe this institution was currently well equipped to carry out its current tasks, much less to take on new ones.

#### *Coordination among institutions, sectors and layers of government*

Deep down there are strong sentiments from all the people interviewed that the State is not well organized. Specifically, one of the main issues that came up was the fact that there are many decisions that are not taken at the appropriate level and instance; this could be due to the lack of clear directives on which department should make which decisions. Or, as quite a few interviewees alluded, there is a factor that is very strong in public administration in Peru, and that is the presence of the Comptroller General. Many government officials at the mid-level are afraid that if they make a decision or a mistake that does not meet the regulations, which are very complicated, they will end up with a lawsuit against them; therefore the safest thing to do as a mid-level government official is to not make any decisions at all. In other words, there is an incentive for inaction, because the official who takes action runs the risk of getting sued.

Indeed this creates an enormous risk to potential investors in the country’s natural resources, including those who want to invest in natural assets and ecosystem services. A great part of the problem is that in the different instances of the State, whether regional, municipal or local governments, “State officials do not take a stand to resolve the issues at hand, whatever they may be. A decision is not taken. The government does not issue a solution to the problem, therefore social pressures start to build up and we can say that the government itself generates conflicts due to its own behavior. This behavior is commented on in the media, especially the government’s behavior in the ‘Mesas de Diálogo’”— the roundtables with multiple stakeholders established to resolve social conflicts ex post facto. [NG9, 7/13/09]

### *Multi-Stakeholder decision making*

Post-conflict resolution is a matter for a different discussion altogether, but there are important lessons that can be drawn about multi-stakeholder decision making in Peru by looking at the outcomes of recent examples in social-environmental conflicts in the Amazon region. Drawing upon evidence from much of the work that the Defensoría del Pueblo has done in social-environmental conflict resolution in monitoring the discussions of the “Mesas de Diálogo”. One clear example of the State’s failure in managing multi-stakeholder agreements can be drawn from the conflict of Rio Corrientes in 2006, where several Achuar communities in Loreto confronted Occidental Petroleum Company for polluting their water sources and degrading their water quality. One particular point in the post-conflict resolution agreement signed in November 2007, known as the Acta de Dorissa, was that for one year, the PRONAA – the government’s food program – would provide food to the affected communities in the area of Rio Corrientes, while the government took care of improving the quality of drinking water in the area.<sup>40</sup> However, nearly a year and a half after the agreement was reached, the food programs had not been administered by PRONAA as agreed. The reason can be traced back to the fact that the decision was made by an official from the Ministry under which PRONAA resides, the Ministerio de la Mujer y Desarrollo Social (MIMDES); however, there was no direct representative from PRONAA present in the negotiations. The decision and subsequent order “caught PRONAA’s administrators by surprise and the result was that PRONAA could not execute the program because it was lacking the funds, mechanisms and infrastructure to deliver such an emergency food program.” [NG9, 7/13/09] Moreover, nearly two years after the Acta de Dorissa was signed, the Regional Government of Loreto, which had drafted a profile of a participatory Integral Plan for the Development of the Corrientes Watershed, “had failed to initiate either the elaboration or the execution of the Plan.”<sup>41</sup>

This type of situation happens repeatedly where parts of the government make decisions to compromise other departments’ resources without the knowledge of that specific department or program. The Ministry of Economy and Finances (MEF) is rarely invited to participate in these negotiations, so after an agreement is reached, the MEF responds by saying, “where are we going to get these resources from? They’re not in the

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<sup>40</sup> Defensoria del Pueblo, 2007

<sup>41</sup> Defensoria del Pueblo, 2008

budget.” The pushing and pulling begins where one department or ministry blames another and vice versa and the government offices get caught up in internal squabbles which diminish their reputation while the population gets frustrated and feels a greater need to mobilize. “There is a behavior of non compliance. In these “Mesas de Diálogo” the State negotiates from an emergency position due to mounting social pressure, so it is forced to reach agreements that it is not able keep.” [NG9, 7/13/09]

If the government cannot coordinate among its different offices and levels to resolve a conflict, then it may be naïve to think that it can be the coordinating body to bring stakeholders together for decision making before a social pressures mount up and conflict begins. Furthermore, the Government’s apparent incapacity to act upon the impending tensions caused by its lack of action and leadership on multi-stakeholder decision making creates risks for any sort of investment in natural resources, including those in ecosystem services. A key feature of PES schemes is that they bring together multiple stakeholders that must be able to agree upon certain conditions under which investments are made and payments disbursed.

#### *Model Institutions*

A surprising number of the professionals who were interviewed said that despite these issues, they had not lost all hope in the Peruvian Government and many had faith in this new era of environmental policy and management under the MINAM. Specifically, a great number kept referring back to the Defensoría del Pueblo, as a model institution of the Government. One respondent from the private sector, an ecotourism entrepreneur who has been operating in the Amazon region for over 15 years stated, “It gives me great hope that there are public offices with credibility, like the Defensoría del Pueblo. I don’t know if this credibility is transferable to environmental issues as it is focused more on human rights, so what we need to do is find ways to transfer the credibility that the Defensoría enjoys in overseeing many areas of the Nation’s day to day activities to environmental affairs.” [PS1, 7/6/09]

Another organization that many respondents (11 out of 19) referred to time and again as one they could trust was, is the Superintendencia Nacional de Administración Tributaria (SUNAT), Peru’s taxing authority. One NGO director stated it in this manner, “if you look at the story of SUNAT, you can see that there was a lot

of resistance from the public at first because the control over the tax system that this organization had was shaky, and when it took action, citizens complained a lot. However, from one moment to the next it seems, we were all very grateful to have a trustworthy and efficient organization on the side of the government even though it was in charge of our tax system and had the reputation of being very tough, but at least it was tough on everybody.” [NG5, 6/19/09]

Many respondents agree that with such an opportunity as that generated by Ecosystem Services markets, there has to be an autonomous independent authority like SUNAT or the Defensoría del Pueblo regulating the market. Both of these institutions are highly respected in Peru and perhaps there are lessons to be learned in from the recent history of these two authorities that can be applied to further develop OEFA and OSINFOR in order for them to gain the credibility required to oversee a potential Ecosystem Services Market. A key to success is for regulators to be tough, and to be tough on everybody.

Another avenue to explore would be the creation of a public-private partnership to raise the necessary funds to administer the market. One of the most successful examples of public-private partnerships for the conservation of nature is the Peruvian Trust Fund for National Parks and Protected Areas (PROFONANPE) which was created in 1991 with a \$5million grant from the Global Environment Facility. Since then, it has capitalized over \$95million, an 18x multiple over its seed capital funding. It is designed to invest and finance programs and projects carried out in Peru’s Protected Areas (PA) that cover the following aspects: recurrent management costs; production and implementation of management plans; establishment and management of buffer zones; training of professionals in park and wildlife administration; education and environmental awareness programs for local communities in PAs; sustainable productive projects integrating conservation and development efforts for the benefit of the communities living in the PAs and their buffer zones; institutional support to strengthen field work carried out by the institutions of the Servicio Nacional de Areas Naturales Protegidas por el Estado (SERNANP); purchase of equipment to implement administration offices

and monitoring stations; preparing surveys and making diagnoses of the flora and fauna in the Protected Areas.<sup>42</sup>

### Land Use Planning

One of the greatest concerns from all the people that were interviewed was the lack of land use planning in the government's project development agenda. Marc Doroujeanni, an expert on Amazonian Forestry issues who recently published a book exposing the government's infrastructure development agenda in the Amazon, Peruvian Amazon in 2021 – Infrastructure and the Exploitation of Natural Resources: What is happening and what does it mean for the future? stated in a interview with Jaime de Althaus on Peru's Canal N:

What is really surprising is that there is no plan. There is no integrated development plan for the Amazon, and in reality an evident national development plan for citizens to consult does not exist. So what happens is that each one of the projects that one day or another are launched and appear in the press or in bilateral agreements do not respond to any sort of plan. One cannot help to question where these initiatives come from. In reality they are registered with each sector. But what one sector has registered is not coordinated with the registry of another sector. It's a complicated situation.<sup>43</sup>

Moreover, while many experts agreed that while there have been some important advances with the Zonificación Ecológica-Económica (ZEE) land-use zoning project, most see the initiative at a very early stage in need of further development, specifically at the micro-level, to be effective. The general perception from those experts consulted was that the ZEE was not yet an effective a management tool because “it provides a lot of technical information, with analysis of maps and quantification of data. However if it were just up to the technical characteristics of land, this tool might actually work. In reality land use planning is as much a political process as it is a technical process. Development is a process of negotiation.” [NG5, 6/19/09] Some are more critical of this process, like the ecotourism entrepreneur, who stated that “the ZEE is just a symbolic ‘salute to the flag’ because the moment that the State becomes interested in promoting an investment project, the last thing they look at is the ZEE, this is evident in the experiences in the Amazon with hydrocarbons, mining and agriculture.” [PS1, 7/6/09]

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<sup>42</sup> Paniagua, 2003

<sup>43</sup> Dourojeanni, 2010

Failing to address these interactions through a coordinated planning system creates risks for investors in the country's natural resources. Most other countries in the world have some sort of Ministry of Planning or central government agency in charge of coordinating and consolidating information about land use and major infrastructure development projects; however none is present in Peru. A clear example of the risk that this lack of planning creates stems from a conversation with the ecotourism entrepreneur who gave the following example: "If you are able to obtain a concession for ecotourism and invest in a lodge, there is no guarantee that next year the government will not grant concessions for gold mines next door to your eco-lodge. So what have they granted you in reality? Nothing at all, if you have four gold mines surrounding you, nobody will come to your eco-lodge and your investment has been in vain." [PS1, 7/6/09]

One of the problems is the lack of precision in setting boundaries. Two well known NGOs that are working with Geographic Information Systems in the Amazon, Centro para el Desarrollo del Indígena Amazónico (CEDIA) and Instituto del Bien Comun (IBC), have found that one of the major scandals regarding the bothersome process of achieving land titling is that if communities do not make any efforts to obtain their own copies of the files they run the risk of the Ministry of Agriculture simply losing their file, which has happened on several occasions in the past. In fact, as a social scientist specialized on these issues revealed, "MINAG has lost most of the archives through reorganizations, disorganization and staffing problems. If the files exist, then the geo-referencing is not exact, because before the existence of GPS units the measurements were very approximate. Even with GPSs the officials go to the community and create very rustic maps because to do it properly would mean walking the entire boundaries of the land and well, that just requires too much effort." [NG9, 7/13/09]

The lack of accuracy in the land cadastres was recognized by most interviewees as a major problem, although it must be recognized that serious improvements have been made since the 1990s and efforts are underway to continue making improvements. If Peru is going to create markets for ecosystem services through legislation, then an inventory of such services must be included in the cadastre so that the mechanism can reward those land managers that through their management practices are actually incrementing ecosystem service flows. There is a clear opportunity for integrating information services that must be addressed, and a clear gap in

institutional capacity to fulfill this need. The opportunity lies in creating articulated information systems to be able to retrieve information to be able to make decisions on multiple levels.

As one NGO director stated, “there is one task that is key and that needs to be done. This is to utilize the information from forest concessions that have been certified. It is not necessary to do this at the level of square meters, but we should have some type of inventory about how the different concessions or general areas provide different ecosystem services. Certainly there are some that will be more important to water resources, as others will be to carbon storage, but we need to do some groundwork to identify these areas. We are lacking this information.” [NG11, 7/9/09]

Once there is a more accurate, micro level zoning based on an integrated information system, it is important to take the next step and initiate a public, national debate with different stakeholders in order to at least identify zones in the country that due to the value of ecological services provided, some areas should not be open to any sort of exploitation of minerals, oil or gas, etc. There should be other parts of land which are set aside for social reasons, for example in areas where there are populations that live in voluntary isolation.

In crafting an agenda for this national debate, it is important to remember that the landscape does not only consist of interacting biological and geophysical elements but also of people, land uses, infrastructure, social organizations, institutional arrangements, and cultural, spiritual, and utility values.<sup>44</sup> The people that affect the landscape are inevitably linked to wider-ranging transportation and communication networks and markets. Therefore, the “rights to access, use and manage natural resources then becomes more subject to social conventions and negotiation which are framed by more formal rules set down by distant government agencies. Together these features shape people’s lives and produce the natural resources, ecological services and social and economic relationships on which they depend.”<sup>45</sup>

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<sup>44</sup> Frost et al., 2006

<sup>45</sup> Frost et al., 2006

### Property Rights and Land Tenure.

In Peru, the government is the sole owner of forestland and leases portions of it through concessions for different types of use. Concessionaires, in practice, have practically no incentive to protect the forest or use it in a sustainable manner because they lack secure concession rights. This system encourages overexploitation of forest resources while yielding little benefit to the regions and the government. Considering these circumstances, “state ownership means de facto lack of property rights, because the limited financial and managerial capacities of the government do not allow the exercise of effective control over the land it owns.”<sup>46</sup>

#### *Enforcement*

Many of the professionals whom I interviewed considered the state of rural property rights in Peru to be absolutely chaotic. There was wide-spread agreement from 17 of the 19 interviewed professionals that the government authorities are too far removed in order to be able to have effective control on the ground. Almost all interviewed parties agreed that the State’s capacity to deal with property rights was very limited. The ecotourism entrepreneur was very effusive when talking about the matter. He claimed that “property rights in Madre de Dios are walked over every day of the week in every district of the department without major reactions. There are invasions on private lands and concessions granted by the State. If you don’t move the earth and the sky in order to get the invaders out of your land nobody will do it for you. It’s the wild west out there.” [PS1, 7/6/09]

#### *Legal Base*

Another often cited problem surrounding property rights is the confusing legal base on which property rights are established. The laws of land titling that apply to the rainforest say basically, though not explicitly, that titles will be granted to those who come in and chop down the trees. As one environmental lawyer put it, “to those who protect and take care of their forest the law says, ‘Hey, you’re not working your land, we’re going

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<sup>46</sup> Shoobridge, 1995, p. 189

to take it away from you.’ That’s the problem with the legal base in Peru ... The laws impede those who perform desirable activities like cultivating shade-grown coffee or maintain certain forest cover from obtaining any rights over the land.” [NG11, 7/9/09]

### *Greco-Roman Property Rights Regime*

At least 9 of the 19 interviewed professionals attributed the principal driver for many of the social-environmental conflicts we see today to the Greco-Roman property rights regime under which the Peruvian Constitution defines property rights. Under this system a registered landowner has explicit rights to the surface, but he does not own the rights to mineral resources under the surface of his property. As one Government official whom I interviewed framed it:

It is true that indigenous communities can own their land but they do not own the sub-surface like they would be able to if we were in the US, Canada, Australia or other Anglo-Saxon countries. For this reason, the State can issue rights for exploration and exploitation to oil and gas companies that in theory are for the resources found below ground, but in practice they affect the surface as well. This doesn’t have much apparent logic to most people. Our legal system should undergo a Constitutional change to avoid these problems. This is the root of many of our conflicts because the indigenous communities, and most people for that matter, don’t understand why if they own the property rights over the surface that they live and farm on, can the government come in and issue rights to exploit the resources below that land to a foreign company. [G1]

In practice, this adds another layer to the already complicated problems surrounding property rights in Peru. Because even if one is able to obtain a concession from the government there is no guarantee that mining rights will not be granted to a resource extraction company.

### *Definition of Property Rights*

Swallow argues that “the requirement of secure property rights, as commonly stated in terms of land ownership, may have the effect of excluding groups of people to and even countries from environmental service mechanisms. ES mechanisms may also threaten the property rights of poor and marginalized populations.”<sup>47</sup> In many rural areas of Peru, property rights are not well established and this presents a challenge in defining PES contracts since “it is necessary to determine the property rights (ownership and/or

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<sup>47</sup>Swallow, 2005.

use rights) over the ecosystem service<sup>48</sup> in order to establish who can sell the Ecosystem Service. It is not clear from the proposed Ecosystem Services bill that is making its way in Congress how the property rights for Ecosystem Services will be determined. Implicit in the bill is that most of the sources of the ecosystem services belong to the State. However, if the State is not the sole caretaker of those sources, then certain rights must be granted to those who act as stewards of the land and directly guarantee the flow of ecosystem services through their management efforts.

Enforcement of obligations under concession contracts has been poor in Peru because, among other things, “governance failures and flawed logging laws [have] led to norms inconsistent with good management.”<sup>49</sup>

Historically, timber producers in Peru, have successfully developed mechanisms for legalizing logs extracted from unauthorized areas. For example, “when requesting authorized volumes, producers artificially inflated the volume of preferred species, relative to their existence in their contracts, and minimized the volume of less desirable species. Shortfalls relative to authorized volumes were met by ‘laundering’ timber harvested from unauthorized areas.”<sup>50</sup> Therefore, when larger benefit streams created by a market for ecosystem services are at play, monitoring and enforcement will become vital to the functioning of a market for a broader set of Ecosystem Services, including timber. One of the most important aspects of the potential to create a market is that clearly defined rights and obligations for the commercialization of ecosystem services are established. As one environmental lawyer puts it, “this must be absolutely clear in the norms, otherwise it creates judicial risk. For example, if I have limited use rights to a forestland, I would want to have clearly defined rules that state under which conditions I have the right to sell the ecosystem services.” [NG5, 6/19/09]

In order to promote investments in ecosystem services, this type of risk must be eliminated. The regulations should clearly state who has the right to those ES and under what conditions. If this is not made clear, then most PES schemes will likely take the form of paying for land management practices which are assumed to lead to the increased flow of specific ecosystem services. In these cases, “the buyer assumes the risk that

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<sup>48</sup> Greiber (ed.), 2009, p. 30.

<sup>49</sup> Smith et al., 2006, p. 463

<sup>50</sup> Smith, et al., 2006, p. 464

services will result from particular land management regimes and is, in fact, paying directly for land management, not for service provision.”<sup>51</sup> Another risk to the viability of the market mechanism lies in the fact that if the land manager has limited control over the land, he may not be able to act as a reliable service provider because he will not be able to effectively and legally exclude external actors that endanger the provision of services.

According to Sven Wunder, “It should be noted that PES do not require land sale rights or even fully formalized land tenure rights. For most, PES, it is sufficient that the landowner has effective rights of exclusion.”<sup>52</sup> This must be kept in mind as potential buyers and sellers of ES in Peru navigate through the complicated systems of property rights that include concessions, communal lands, open access and squatter rights. Swallow et al. note that property rights do not need to be individual in order to allow environmental service mechanisms to proceed. This is because while contracts with individual farmers do require individual property rights, whereas contracts with groups of farmers may be more effectively secured with group rights.

This situation need not be seen as an obstacle to the development of an ES market in Peru. On the contrary, the necessity to have secured property rights may be utilized as an incentive for agencies involved in the formulation of PES schemes to secure property rights as an early part of the program. Evidence from academic studies shows that in situations where the production of ES requires long-term commitment of land resources, land tenure security may be a very important determinant of the production of ES. In such cases, stronger and more secure rights over land and other partner resources can be used as a reward for ES instead of, or in addition to other forms of payments. This means the land tenure is conditional upon ES provision. Even where farmers have some recognized rights, participating in an ES program may strengthen their property rights.<sup>53</sup> An environmental lawyer to whom I spoke described this process as follows:

You need a framework that has a process, such as first establishing the rights, by getting a concession for forest management, or Brazil nuts for example, then conducting a participative process of zoning and distributing the rights between Juan, Jose, Luis, etc. to make sure that all of them have fixed rights that are well distributed and organized. As part

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<sup>51</sup> Greiber (ed.), 2009, p. 30

<sup>52</sup> Wunder, 2005

<sup>53</sup> Swallow et al., 2005, p. 21.

of the rights they have access to the economic benefits based on the ecosystem services under protection. If I don't have access first of all to a good relationship and a system of rights and obligations with the native community established under a management plan, and I haven't titled them all, organized them according to what they want to do with their forest, then I can't expect a cause-and-effect relationship for the delivery of an ecosystem service. This is when I start to think about compensation for ecosystem services. This is how we should be thinking...." [NG11, 7/9/09]

### Consultation - Free, Prior and Informed consent

Peru has seen a rise in the number of social-environmental conflicts throughout the last five years. A large part of this can be attributed to the lack of information sharing and multi-stakeholder decision making that surrounds the exploitation of natural resources. Therefore, most experts consulted with agree that a guiding principle in current and future environmental management legislation should be the ensured and guaranteed civil society participation in decision making, as well as transparency and availability of information.

Perhaps it is because of the composition of the sample, as most of the professionals who were interviewed work on the front lines of the conservation movement in Peru, but most of them acknowledged the fact that there needs to be a change in the rhetoric about indigenous communities and how they are affected by investment projects in the Amazon. As one NGO director stated, "You can't talk about indigenous communities in general because you have to understand that each community [in the Amazon] is very different from the other, so you really must talk about affected communities and local populations that will be impacted [by investment projects], including the "ribereños", the settlers, the natives, etc. Moreover, the land for a native of the rainforest goes beyond a medium of subsistence, it composes part of his personality, his identity and his culture." [NG7 6/3/09]

Because of the history of social-environmental conflicts in Peru, many agree that the only mechanism that can work in order to make the most of investment opportunities in natural resources, including ecosystem service projects, is to have transparent information policies. Access to information at every stage of any sort of project development must be available. The mechanism of public consultation has to be the initial step, because many believe that the environmental impact assessment has lost credibility. As one interviewee stated:

The best conservationists moving forward will be the native populations, because they are going to demand really creative ways to solve the problems caused by investment projects. I assure you that we are already at that stage. I don't know what these mechanisms will look like, but I don't believe that they don't exist either. I guarantee that if you sit down to have honest discussions and negotiations like those that native communities and local populations in all parts of Peru deserve, in order to carry out a mining or hydrocarbon project, agreements will be made and some very creative arrangements will have to be drawn. What happens is that until now there have been no real negotiations, it's all lies and swindles. We have to guarantee transparency and flow of information. That is imperative. [PS1, 7/6/09]

The question moving forward should not be how we manage the conflicts that arise from conservation and development initiatives, but how can we avoid them altogether. The key to this is the issue of information disclosure. All experts that I spoke to, including government officials, agree that one of the major problems in how things are managed in Peru is the lack of information, transparency and truthful open dialogue. That is where a large portion of the problems are born.

The mechanisms by which civil society is incorporated into the decision-making process must be improved and enforced as a general rule for improving the management of natural resources in Peru and definitely for creating PES schemes at any level. Currently, local communities are not made part of the process, or if they are, the information presented to them is laid out in very technical terms and the effects of the proposed projects are not well explained. If Peru is to take advantage of a global market opportunity for ecosystem services, the same risks apply if the mechanism for consultation is not well managed. Furthermore, for areas which are managed as communal lands, perhaps the opportunity lies in bringing together groups of citizen-stakeholders to deliberate on the economic value of a public good. By implementing a fair and openly structured procedure for deliberation, it is assumed that small groups of citizens can render informed judgments about public goods not simply in terms of their own personal utility, but also in terms of widely held social values.<sup>54</sup>

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<sup>54</sup> Wilson and Howard, 2002, p. 431-443

## Environmental Impact Assessments

Another major issue to which most of the professionals consulted to spoke about despite not having been directly prompted to do so is the importance of mandating accurate and reliable Environmental Impact Assessments (EIA). Most of these professionals believe that a key issue to address the increasing number of social conflicts due to the apparent clash between conservation and development initiatives is not only to have transparent information available to the public throughout the project development stages, but also to enforce the requirement for and mandate on the quality of EIAs. Ecosystem Service markets, many of them mentioned, must be incorporated as tool within a larger regulatory framework that begins by limiting the amount of environmental impact that investment projects can create. In essence, the improvement of regulations that mandate strict standards for the quality of EIA's is another tool in the toolbox for improving stewardship over the endowment of natural assets that Peru has been blessed with.

Currently EIAs are regulated under a dispersed system whereby each sector has its own mechanisms and procedures for conducting the assessments. Since 2001 there has been a law that establishes the System of Evaluation of Environmental Impact, but the norms have yet to be written and approved. MINAM is now working towards having a single system for enforcing EIA compliance. The aim is to homogenize the processes and procedures and centralize its enforcement in OEFA, but this is a process that will likely take some time.

A major issue lies in the agent-principal problem that is caused by the manner in which EIAs are currently regulated. It is up to the company to hire the environmental consulting firm that conducts the EIA.

Therefore, there is an incentive for the producer of the EIA to understate the impacts so that it can be approved and the firm considered for future business. Another problem is that those paying for these studies are the same people promoting the projects. This generates a system whereby if a construction company hires a consultant to develop an EIA and his assessment is that there are too many complications and obstacles to go forward with the project then it is very likely that consultant will never be hired again. What is needed is an independent, third-party hiring process where consulting companies that develop these assessments can work

with autonomous and unbiased independence and professionalism. Furthermore, because the sectors have control over EIA approval, there is an inherent conflict of interest within each sector. The same Ministry that is in charge of promoting a certain activity, for example, the Ministry of Energy and Mines or the Ministry of Agriculture, also oversees and finally approves the EIA for each specific project in that sector. The need to centralize the enforcement of EIAs in OEFA is therefore seen as critical.

Many of the professionals whom I interviewed agreed that if extraction activities must take place in areas that are very rich in biodiversity and contain ecosystems that are very sensitive and valuable to humanity, then we cannot have the same requirements and parameters as if the project was to be undertaken in another part of the country or the world. Minimum standards must be set very high and the impacts must be fully evaluated and minimized. If we are talking about creating markets for ecosystem services in order to counter-balance these impacts, then the EIA must incorporate measures of impacts related to ecosystem services.

One remarkable example of a project that incorporates biodiversity into their environmental impact assessment was provided by a Government official whom I interviewed. He recommended looking at Repsol's work in conjunction with the Smithsonian Institute in developing a biodiversity plan for Lot 39 in the northern Amazon region near the border with Ecuador. This program proposes to identify the diversity of life that resides in the lot and to record the effects of seismic testing on biodiversity. This information will lead to the creation of a sensitivity map and the identification of the most important areas for biodiversity conservation so that if oil or gas is found, the design of the following phases of the project can incorporate this information. This is an exemplary project because it demonstrates that it is feasible to undertake such studies, therefore there is no reason that biodiversity surveys should not be incorporated as requirement of all oil exploration projects. The more accurate information that stakeholders have about biodiversity in the area, the better decisions can be made regarding project design and infrastructure so as to minimize impacts on this ecosystem service. This was not seen as an expense by Repsol, but rather as an investment in information gathering that will allow the company to make better decisions about the proper management of their

concession, including which areas to return to the government, because in order to maintain certain areas under the company's control they are required to pay for the area they control.

As one interviewee placed it “I think giving a large company the opportunity to offset their impacts is the wrong way of sitting on the horse – it is like riding a horse looking backwards. The first thing we must do is give them the mandate to avoid all possible impacts and then tell them they should offset those unavoidable impacts. Given the right regulatory framework, companies will find a way to make their impacts irrelevant, but because such regulation does not exist, then we can see the effects this has on our rivers and landscapes.”

[NG3 6/16/09]

## **Conclusion**

Due to the fact that ecosystem services are a critical, yet undervalued input to the economy, and the Amazon region of Peru provides vast volumes of ecosystem services for the benefit of humanity, it is imperative that Peru develop more rigorous and effective mechanisms to protect and promote investments in its natural capital. Given the current context of social-environmental conflicts initiated by the Government's thirst for development in the Peruvian Amazon, there is a dire need for a rigorous national policy debate that establishes and defines the significance of ecosystem services to the economy and assesses the viability of establishing markets for ES, including participation in international carbon markets. This includes the need to reevaluate the way environmental and social impacts from infrastructure and development projects are assessed and dealt with as well as how the national territory will be organized and zoned to guarantee the provision of services. Given the level of expertise of the people who were interviewed over the course of 2 months in mid-2009, as well as the strong corroborating evidence found in the academic literature, certain key issues that must be addressed in this national debate stand out from the discussions as priority issues to be addressed by national policies to create viable markets for ecosystem services.

At the top of this list are issues related to addressing property rights and the need for land use planning based on a cadastre that is built using integrated information systems that aggregate information from across all sectors. This may include having to establish a centralized planning department in charge of this task or

delegating the function to an existing sector or government office. Perhaps a constitutional shift is infeasible, but getting properties accurately registered in a cadastre with proper inventories of the potential ecosystem services they provide will lead to the construction of an adequate land-use planning tool that builds on the current efforts of the ZEE. On a parallel front, efforts must be made to improve governance over forest resources, specifically focusing on building institutional capacity and providing these institutions with adequate budgets and training to conduct proper monitoring and evaluation. Furthermore, environmental management policies must include mechanisms to guarantee that decision-making processes involve the wide spread availability of transparent and accurate information to civil society as well as encouraging honest, open dialogue with multiple stakeholders in order to create more favorable conditions for attracting investments in Peru's natural capital.

Most of the key issues identified in this investigation are not specific to ES markets; rather they are general issues that must be considered for general good practices in natural resource management policies. As such, markets for ecosystem services will do little if anything to improve the long-term sustainability of Peru's natural capital and the ecosystem services that flow from it if these issues are not addressed as part of an integrated natural resource management strategy. Markets for ecosystem services must be considered as one of many tools in the toolbox of strategies to ensure the long-term sustainable use of natural resources in Peru.

## **Appendix A: Interview Guide**

### **Institutions and Organizational Capacity**

The current bill proposes that MINAM through the Organism of Environmental Evaluation and Control (OEFA) should be the competent authority regarding control of ecosystem services nationwide. The Organism for Forest and Wildlife Resources (OSINFOR) will be the organization in charge of supervising ecosystem services sourced from forests.

How familiar are you with these institutions? How would you describe their work in the area of influence of your organization's projects?

As mentioned in the above concept, other important issues to consider are property rights, duty of care expected by landowners and the need for robust methods for measuring the delivery of Ecosystem Services in trading.

How would you rate the government's capacity to deal with each of these issues in the area of influence of your organization's current and proposed projects?

### **Valuation and quantification**

How should potential conflicts between conservation / sustainable use of ecosystems and large-scale project development be addressed?

Should the regulations provide methods, recommendations or guidance on how to integrate indigenous communities into the decision-making process?

What types of methods, recommendations or guidance should the government provide in order to predict and analyze the impacts of projects of "high environmental impact"?

Should the regulations provide methods, recommendations or guidance on how to integrate health aspects into the assessment?

## **Criteria and Indicators for ecosystem service provision / damage**

What indicators and parameters should be used to assess *impacts* on ecosystem services?

Which components, values and/or scientific criteria should be used to assess the *significance* of such impacts?

How do we determine when the impacts will cause irreplaceable / irreparable damage?

## **Market Design**

To what extent should the regulations incorporate principles and guidance to compensate harm to ecosystem services/biodiversity?

What types of compensation measures should be included?

*Types of projects/offsets* – in-kind (in the same geographic area of the impact) or out-of-kind (banking system, offsets can take place in another part of the country); measurable conservation outcomes vs. quantify-and-pay type compensation scheme.

*Spatial aspects* – on-site or off-site, ecological-economic zoning (ZEE) restrictions? Landscape context? Additionality and leakage, compensation ratios, time lag?

## **Scope**

What principles should guide decisions regarding provision of and compensation for environmental services policies?

What should be the subjects of regulation (i.e., ecosystems, landscapes, biodiversity, human health)?

Do you have any further comments or anything you would like to add to this discussion?

## Appendix B: Other Payment Ecosystem Services Schemes around the World

### Costa Rica

Costa Rica's "payments for environmental services" (PSA) program has been very successful in voluntarily enlisting private landowners to maintain and protect their forests. Since its inception in 1997, the PSA program has been applied to a total of nearly 500,000 hectares (ha) of privately owned forests. Administered by the National Forest Financing Fund (FONAFIFO), the EcoMarkets (2001-2005) project was funded primarily through allocating 3.5% of the national fuel tax to FONAFIFO. The PSA program also attracted significant co-financing from bilateral donors, including KfW, NORAD, and the Government of Japan to the tune of \$41million. The Ecomarkets Project's other main achievement has been to greatly strengthen FONAFIFO's institutional and technical capacity, thereby increasing the effectiveness and efficiency of the entire PSA program, making it a model for other countries to emulate.<sup>55</sup>

The project has directly supported the implementation of Costa Rica's forestry law by providing financial incentives to forest owners for providing environmental services relating to biodiversity conservation, carbon sequestration, hydrological services, and scenic beauty. The EcoMarkets Project has successfully fulfilled, and in most cases, exceeded its principal objectives and goals which include:

- More than 130,000 ha incorporated into the priority areas selected for biodiversity conservation. The project's target was 50,000.
- An additional 81,000 ha contracted to privately owned lands within other conservation areas identified as priorities in the MDC.
- In 2000, 22 women landowners participated in the PSA. Currently, there are 474. This represents over 2,000 percent increase versus the target of 30 percent.

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<sup>55</sup> Hartshorn et al., 2005

- In 2000, 2,850 ha of indigenous community-owned lands were included in the PSA. Currently, there are 25,125 ha, representing an 882 percent increase compared with the original target of a 100 percent increase in indigenous participation.<sup>56</sup>

## Australia

The Ecosystem Services Project began in 1999 with the aim of:

- Engaging public policy developers, decision makers, and implementers throughout;
- Assessing what services are provided by a range of Australian ecosystems;
- Assessing who benefits from the services, where;
- Exploring and analyzing change under different scenarios (including interactions between ecological, economic and social processes);
- Investigating new institutional, market, and policy structures to encourage accounting of and investment in natural assets; and
- Developing and testing guidelines for performing such assessments in Australia and elsewhere.

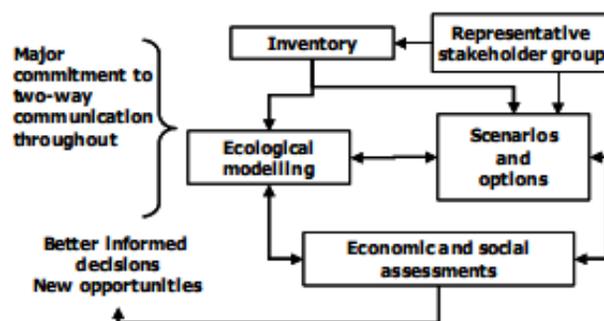


Figure 2: Key elements of the approach to assessing and valuing ecosystem services as applied by

<sup>56</sup> Campbell, 2006

The Ecosystem Services Project (Australia)<sup>57</sup>.

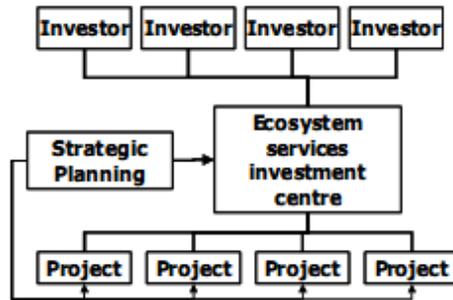


Figure 3: Generic design for an investment framework to encourage balanced environmental outcomes at regional scales.<sup>58</sup>

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<sup>57</sup> Cork et al., 2001, p. 159.

<sup>58</sup> Cork et al., 2001, p. 162.

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